8 - SAR TEST RESULTS

This page summarizes the results of the performed dosimetric evaluation. The plots with the corresponding SAR distributions, which reveal information about the location of the maximum SAR with respect to the device could be found in the following pages.

The output power was measured prior to testing and a fresh battery charge was ensured before each test. The modulation characteristics of the EUT is GSM, therefore, a crest factor of 8 was used during the test.

8.1 SAR Body and Head Worst-Case Test Data

The data for head SAR for model PH10B, indicates that the averaged SAR value over one cubic gram of tissue is higher than the head SAR data for model PH10A. Therefore it is concluded that that the model PH10B is the worst case EUT and is the one chosen for testing for Body SAR RF exposure.

Ambient Temperature (ºC): 23.0
Relative Humidity (%): 53

The thickness of backpack: 12.43mm; pouch: 6.24mm

Model	Position	Frequency (MHz)	Output Power (dBm)	Test Type	Liquid	Phantom	Notes / Accessories	Measured (mW/g)	Limit (mW/g)	Plot #
PH10B	Body Back Touching	1880	29.93	Body worn	Body	Flat	Backpack, Headset & Pouch	0.0963	1.6	1
		1880	29.93	Body worn	Body	Flat	Backpack & Headset	0.376	1.6	2
	Body Face Touching	1880	29.93	Body worn	Body	Flat	Backpack	0.0355	1.6	3
		1880	29.93	Body worn	Body	Flat	Backpack	0.209	1.6	4
PH10B – GPRS Modulation	Body Back Touching	1880	29.93	Body worn	Body	Flat	Backpack & Serial Cble	0.726	1.6	5
		1880	29.93	Body worn	Body	Flat	Backpack	0.726	1.6	6
PH10A	Left Head, Cheek	1880	29.60	Face-held	Head	Head	Backpack	0.213	1.6	7
	Left Head, Tilted	1880	29.60	Face-held	Head	Head	Backpack	0.300	1.6	8
	Right Head, Cheek	1880	29.60	Face-held	Head	Head	Backpack	0.210	1.6	9
	Right Head, Tilted	1880	29.60	Face-held	Head	Head	Backpack	0.264	1.6	10

SAR Test Data (Continued)

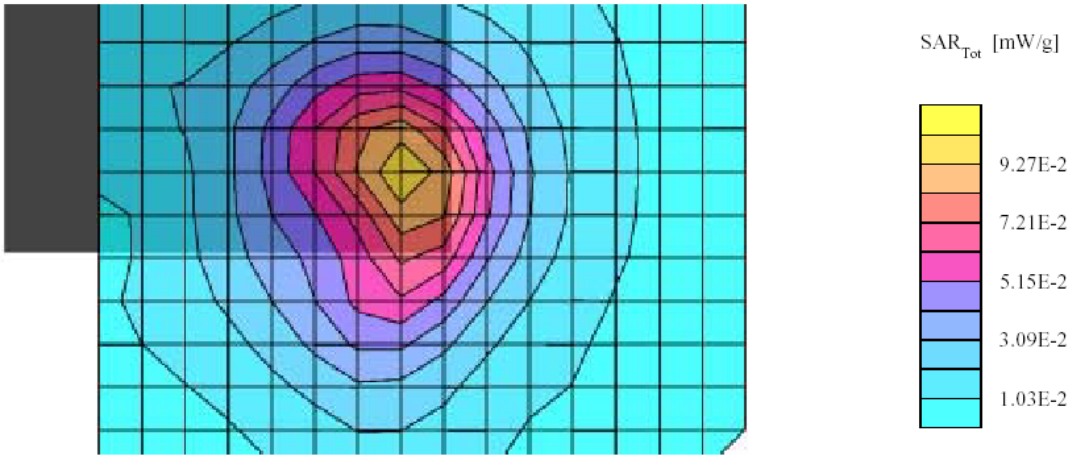
Model	Position	Frequency (MHz)	Output Power (dBm)	Test Type	Liquid	Phantom	Notes / Accessories	Measured (mW/g)	Limit (mW/g)	Plot #
PH10B	Left Head, Cheek	1880	29.93	Face-held	Head	Head	Backpack	0.273	1.6	11
	Left Head, Tilted	1880	29.93	Face-held	Head	Head	Backpack	0.362	1.6	12
	Right Head, Cheek	1880	29.93	Face-held	Head	Head	Backpack	0.336	1.6	13
	Right Head, Tilted	1880	29.93	Face-held	Head	Head	Backpack	0.358	1.6	14

8.2 Plots of Test Result

The plots of test result were attached as reference.

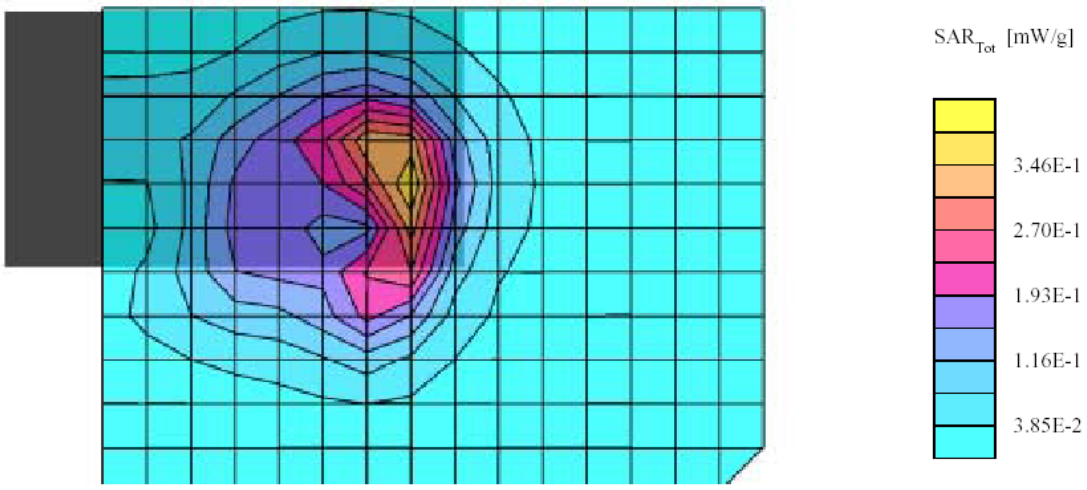
High Tech Computer, Model: PH10B (Body Worn, Back touching flat phantom with accessocery (headset and pouch), Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)

SAM Phantom; Flat Section; Position: (90°,90°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm³
Cube 5x5x7: SAR (1g): 0.0963 mW/g, SAR (10g): 0.0623 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: 0.04 dB



Plot #1

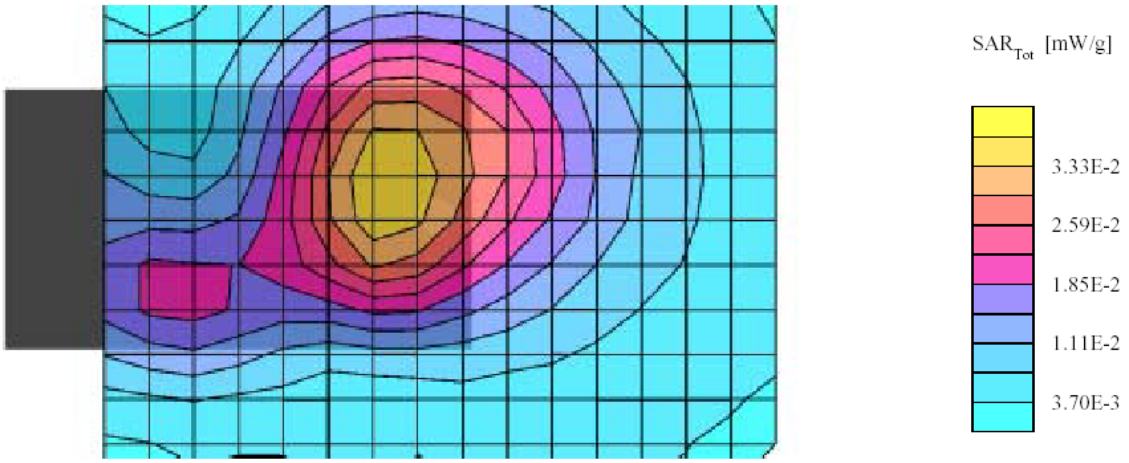
High Tech Computer, Model: PH10B (Body Worn, Back touching flat phantom with headset, Middle channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)
SAM Phantom; Flat Section; Position: (90°,90°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.376 mW/g, SAR (10g): 0.220 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: 0.03 dB



Plot #2

High Tech Computer, Model: PH10B (Body Worn, Face touching flat phantom with accessocery (headset and pouch), Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)

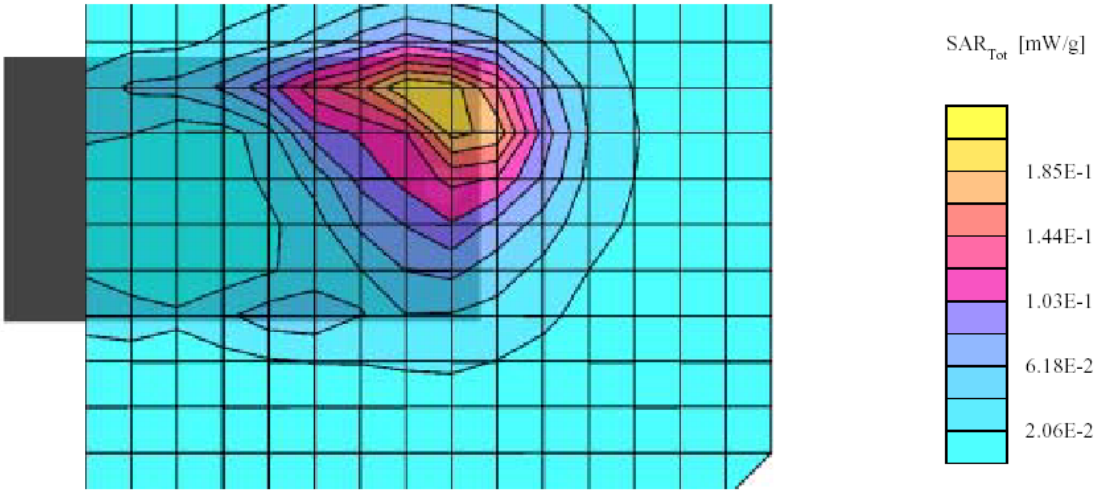
SAM Phantom; Flat Section; Position: (90°,90°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.0355 mW/g, SAR (10g): 0.0238 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: -0.01 dB



Plot #3

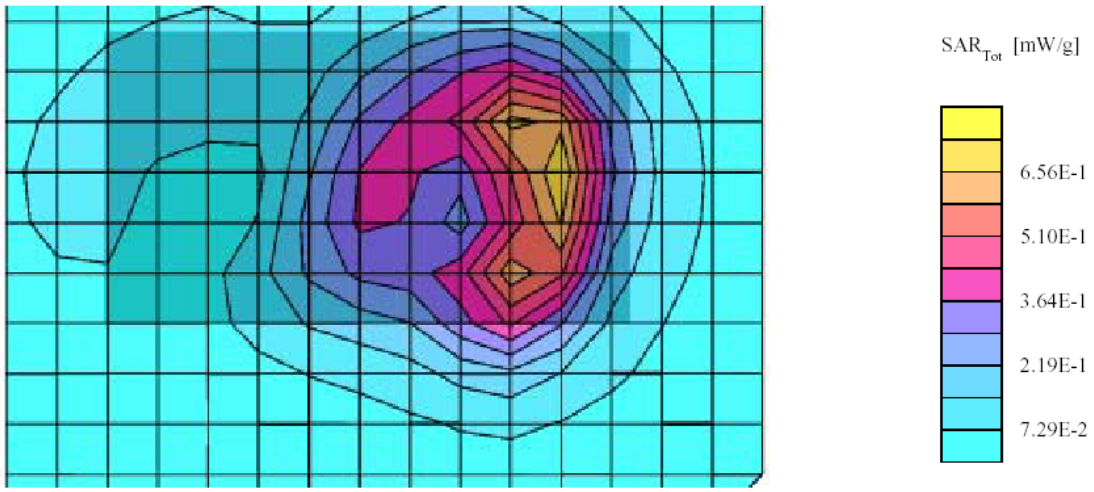
High Tech Computer, Model: PH10B (Body Worn, Face touching flat phantom with headset, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)

SAM Phantom; Flat Section; Position: (90°,90°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.209 mW/g, SAR (10g): 0.119 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: -0.04 dB



Plot #4

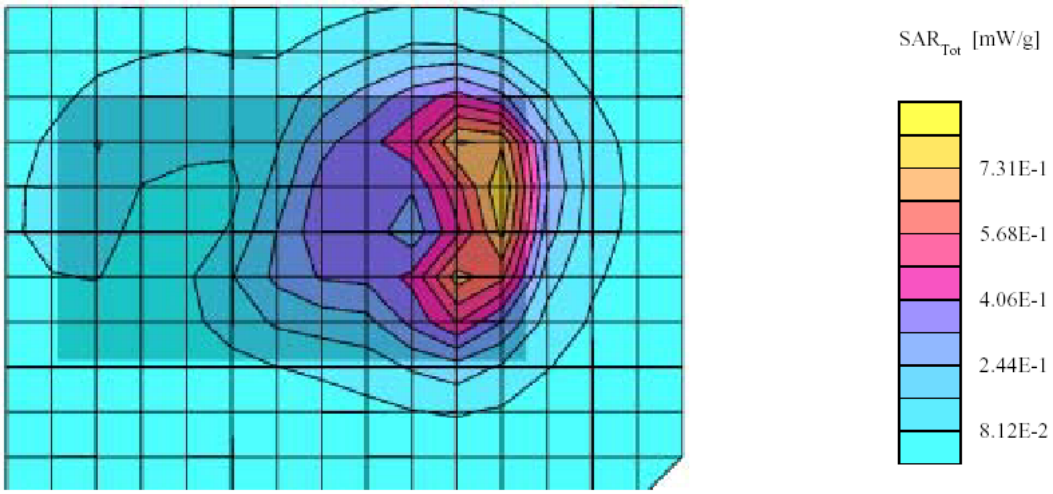
High Tech Computer, Model: PH10B (GPRS Body Worn, Back touching flat phantom with Serial cable, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 4.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.726 mW/g, SAR (10g): 0.432 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: 0.04 dB



Plot #5

High Tech Computer, Model: PH10B (GPRS Body Worn, Back touching flat phantom, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/22/2003)

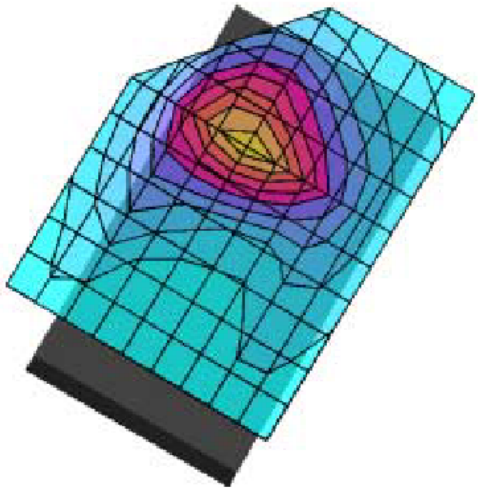
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 4.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 53.4 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.726 mW/g, SAR (10g): 0.432 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0
Powerdrift: 0.01 dB



Plot #6

High Tech Computer, Model: PH10A (Left Head, Cheek, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/19/2003)

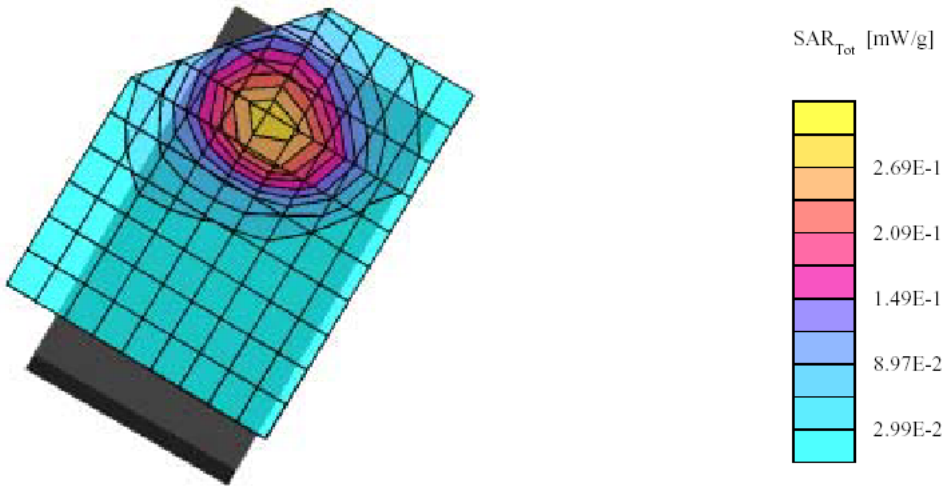
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.213 mW/g, SAR (10g): 0.125 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0
Powerdrift: -0.02 dB



Plot #7

High Tech Computer, Model: PH10A (Left Head, Tilted, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/19/2003)

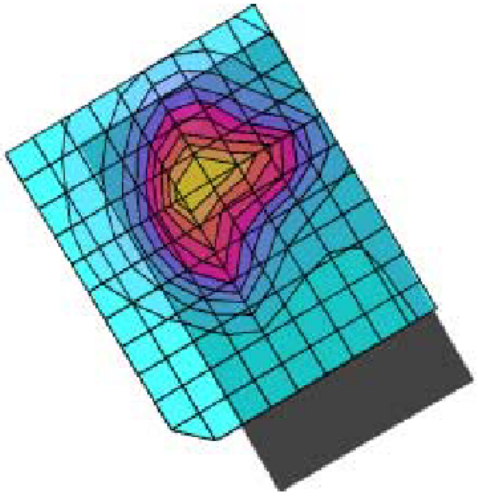
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.300 mW/g, SAR (10g): 0.174 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0
Powerdrift: 0.01 dB

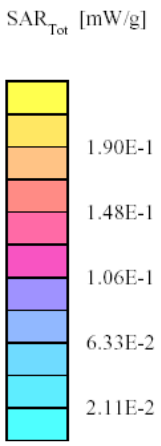


Plot #8

High Tech Computer, Model: PH10A (Right Head, Cheek, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/19/2003)

SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm³
Cube 5x5x7: SAR (1g): 0.210 mW/g, SAR (10g): 0.119 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0
Powerdrift: 0.00 dB

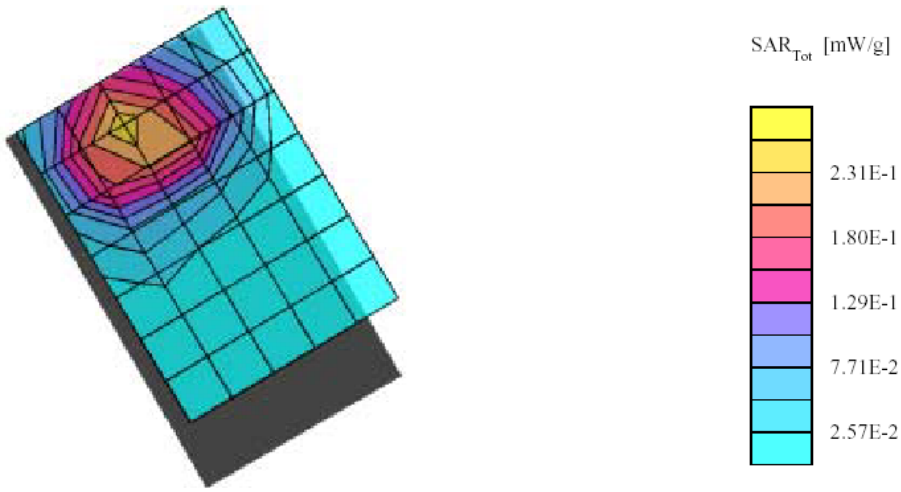




Plot #9

High Tech Computer, Model: PH10A (Right Head, Tilted, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/19/2003)

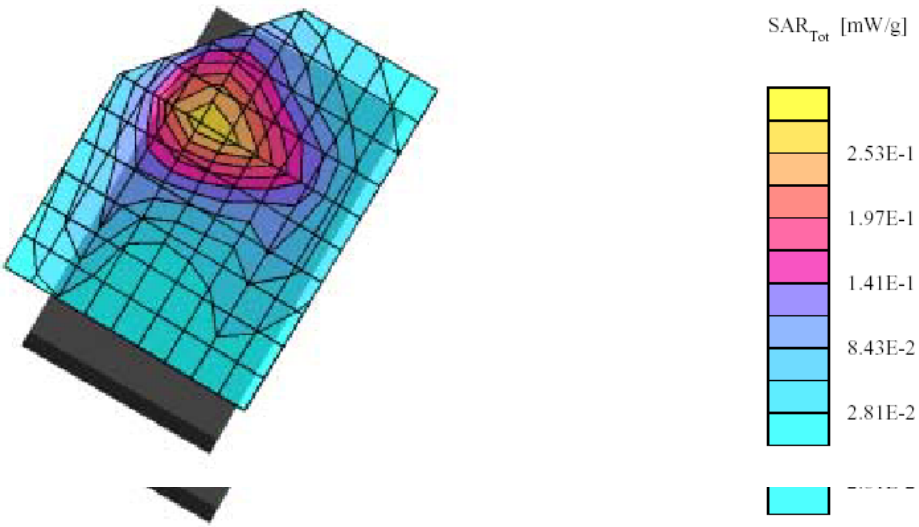
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.264 mW/g, SAR (10g): 0.153 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Powerdrift: -0.04 dB



Plot #10

High Tech Computer, Model: PH10B (Left Head, Cheek, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/19/2003)

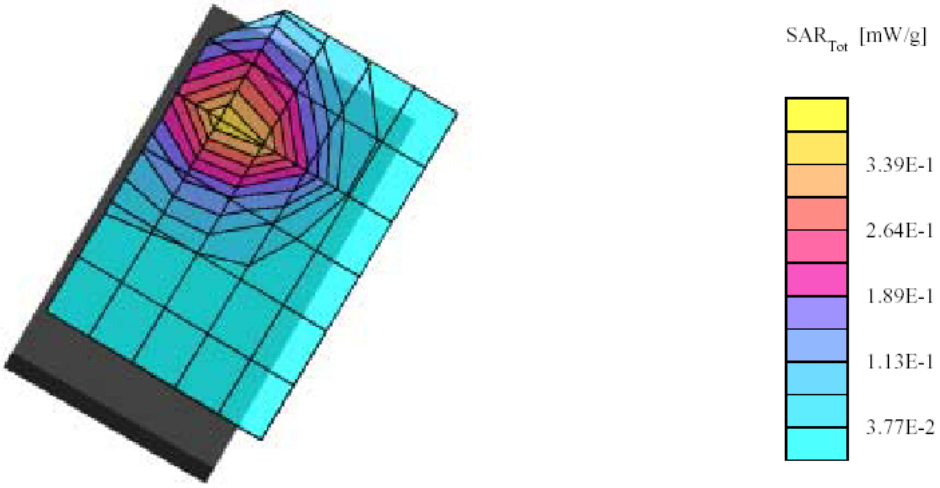
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.273 mW/g, SAR (10g): 0.163 mW/g, (Worst-case extrapolation)
Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0
Powerdrift: 0.02 dB



Plot #11

High Tech Computer, Model: PH10B (Left Head, Tilted, Mid channel, Ambient Temp = 23 Deg C, Liquid Temp = 21 Deg C, 08/19/2003)

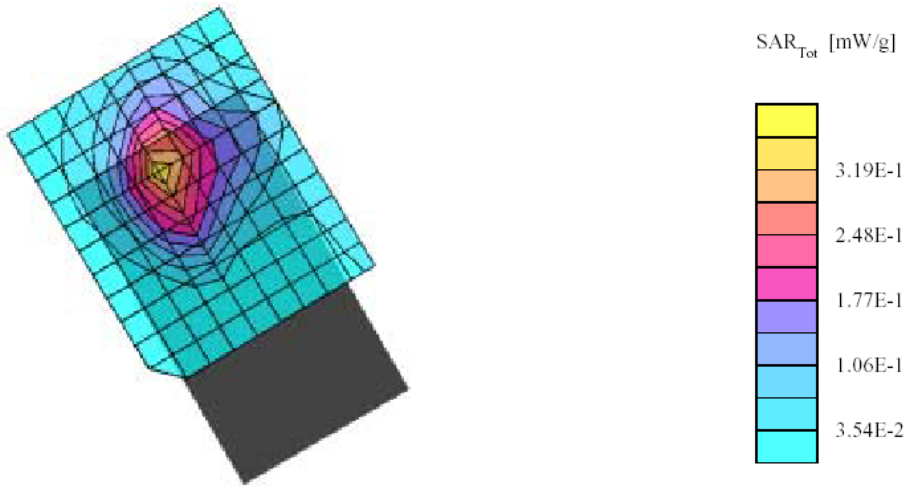
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.362 mW/g, SAR (10g): 0.211 mW/g, (Worst-case extrapolation)
Coarse: Dx = 19.0, Dy = 15.0, Dz = 10.0
Powerdrift: -0.02 dB



Plot #12

High Tech Computer, Model: PH10B (Right Head, Cheek, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/19/2003)

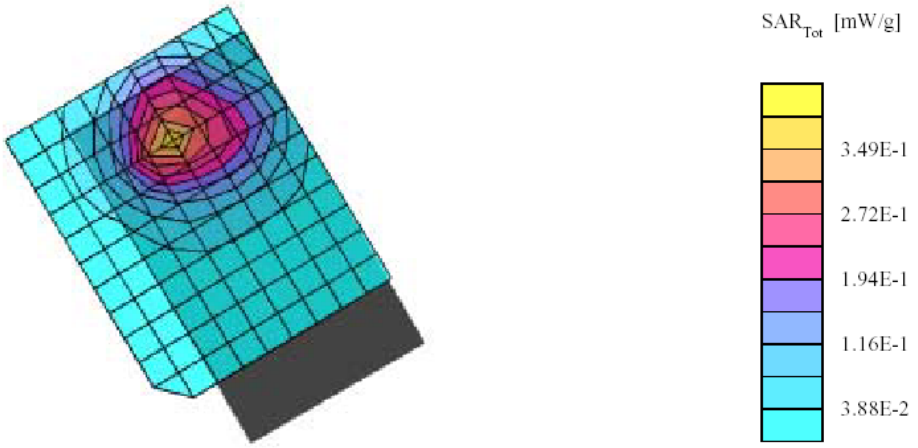
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.336 mW/g, SAR (10g): 0.183 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0
Powerdrift: 0.02 dB



Plot #13

High Tech Computer, Model: PH10B (Right Head, Tilted, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/19/2003)

SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz: σ = 1.37 mho/m ε_r = 39.5 ρ = 1.31 g/cm^3
Cube 5x5x7: SAR (1g): 0.358 mW/g, SAR (10g): 0.195 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0
Powerdrift: -0.03 dB

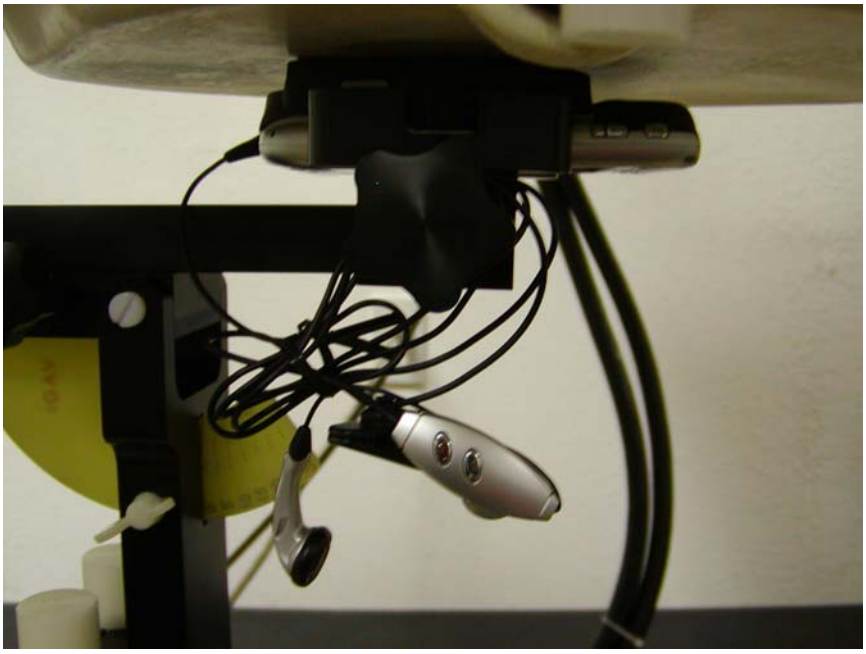


Plot #14

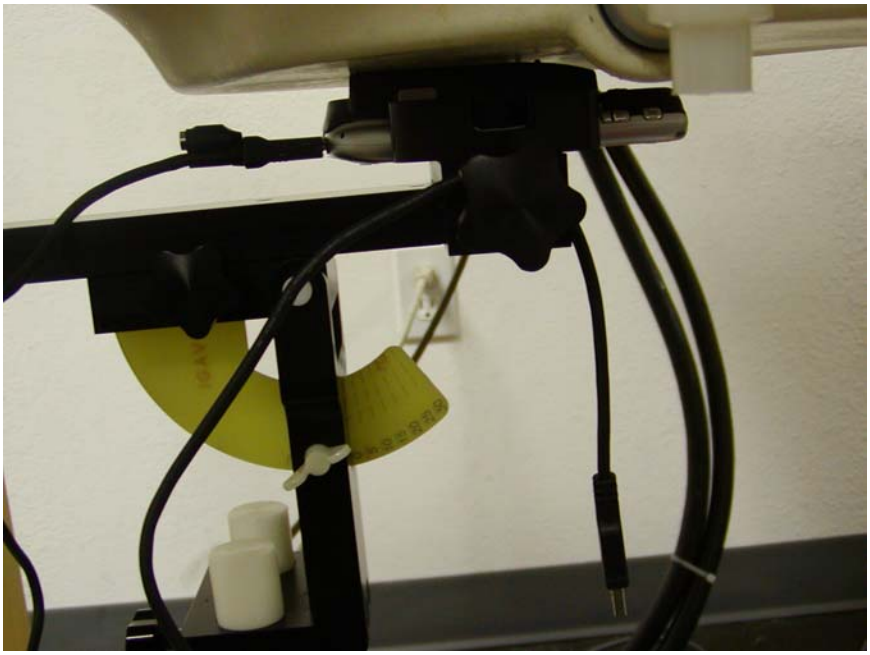
EXHIBIT A - SAR SETUP PHOTOGRAPHS

Body Worn, Back Touching Flat Phantom with Headset and Pouch

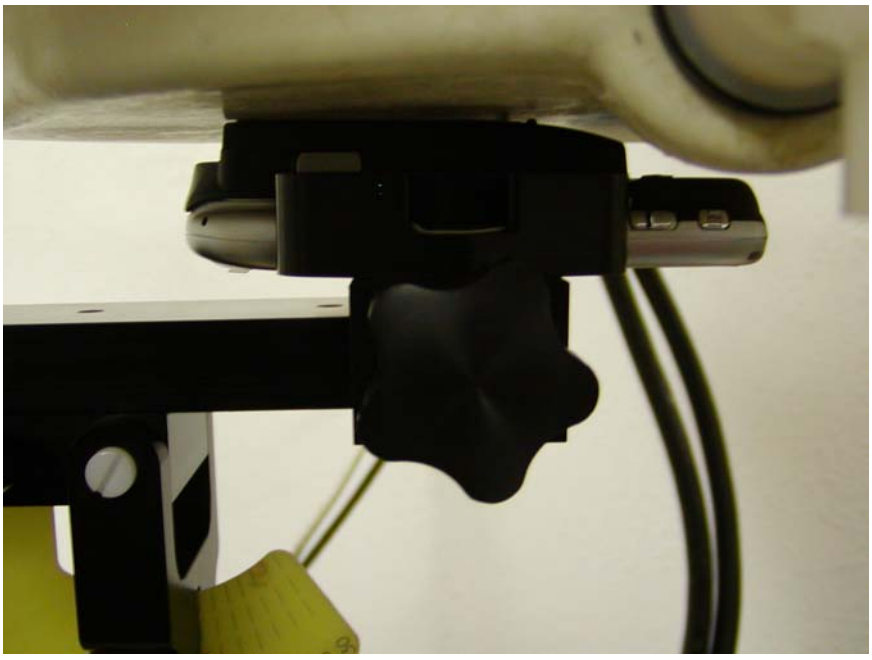
Body Worn, Back Touching Flat Phantom with Headset and Backpack



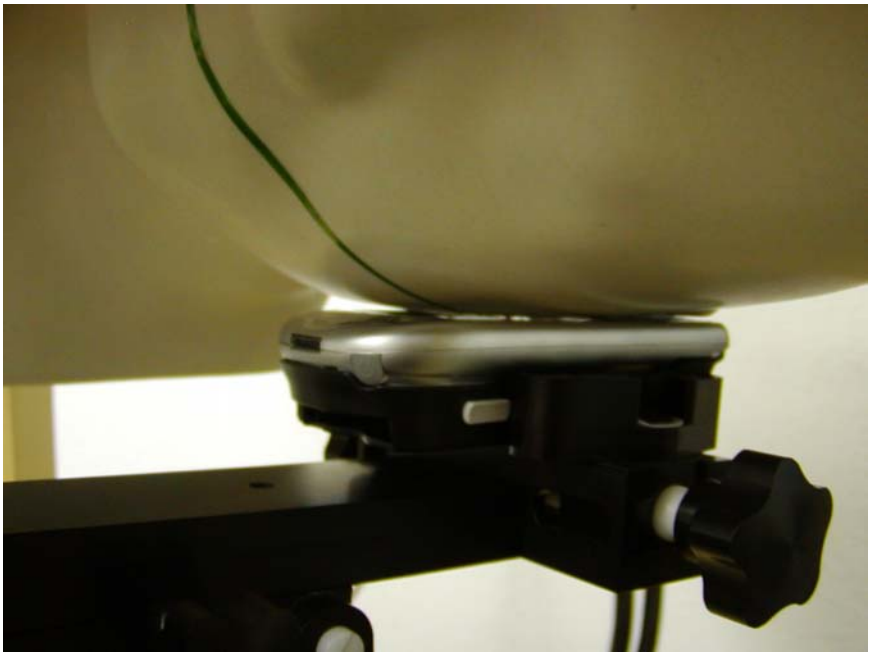
Back Touching Flat Phantom with Serial Cable and Backpack



Back Touching Flat Phantom with Backpack

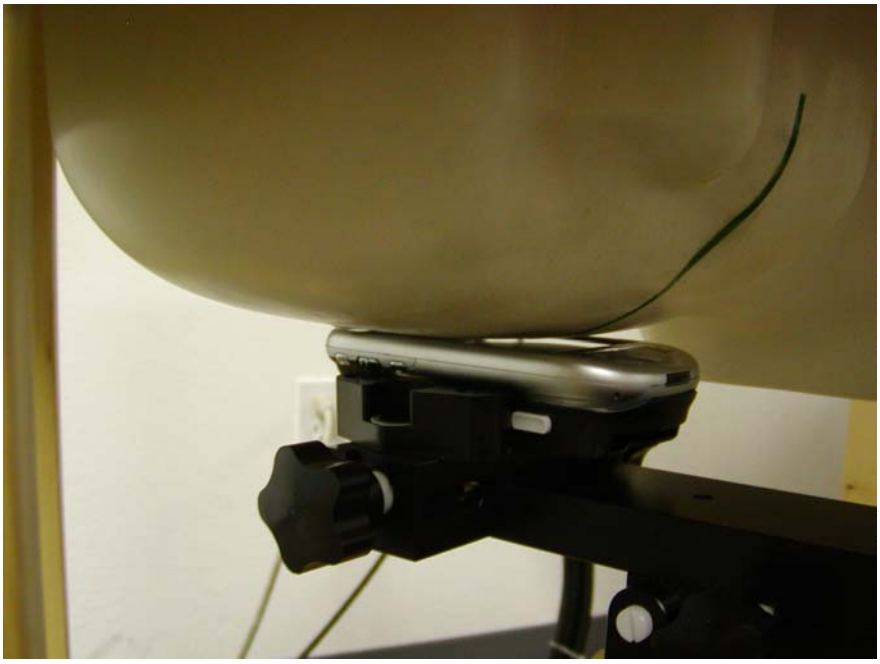


Left Head, Cheek with Backpack



Left Head, Tilted with Backpack

Right Head, Cheek with Backpack



Right Head, Tilted with Backpack

EXHIBIT B – EUT PHOTOGRAPHS

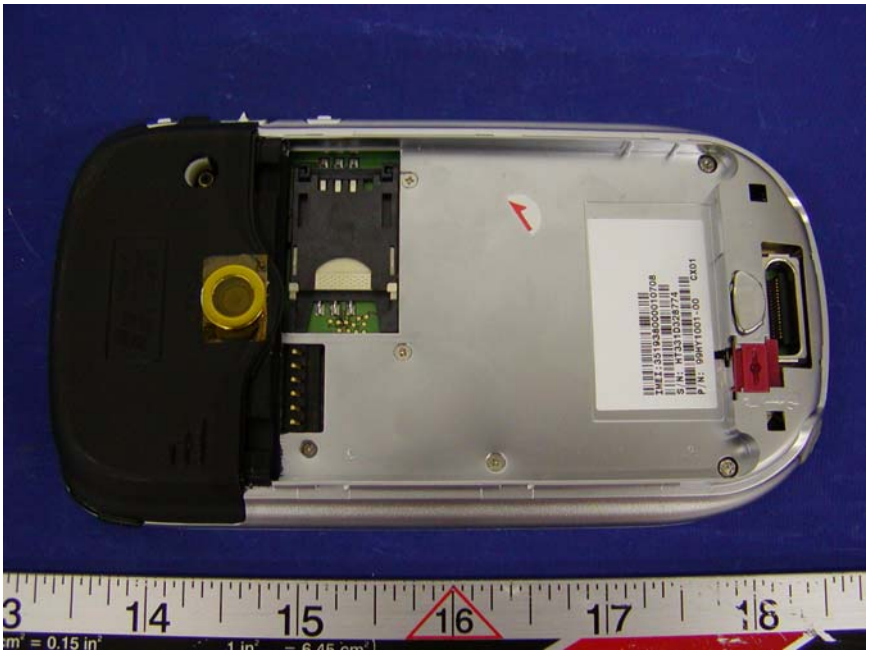
EUT – PH10A Top View

EUT – PH10A Rear View

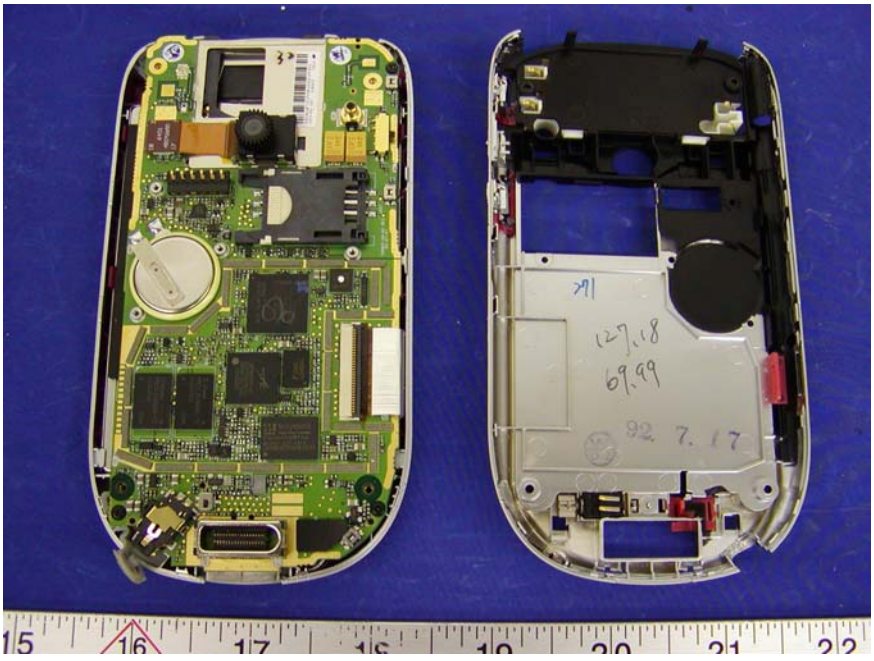
EUT – PH10B Front View

EUT – PH10B Rear View

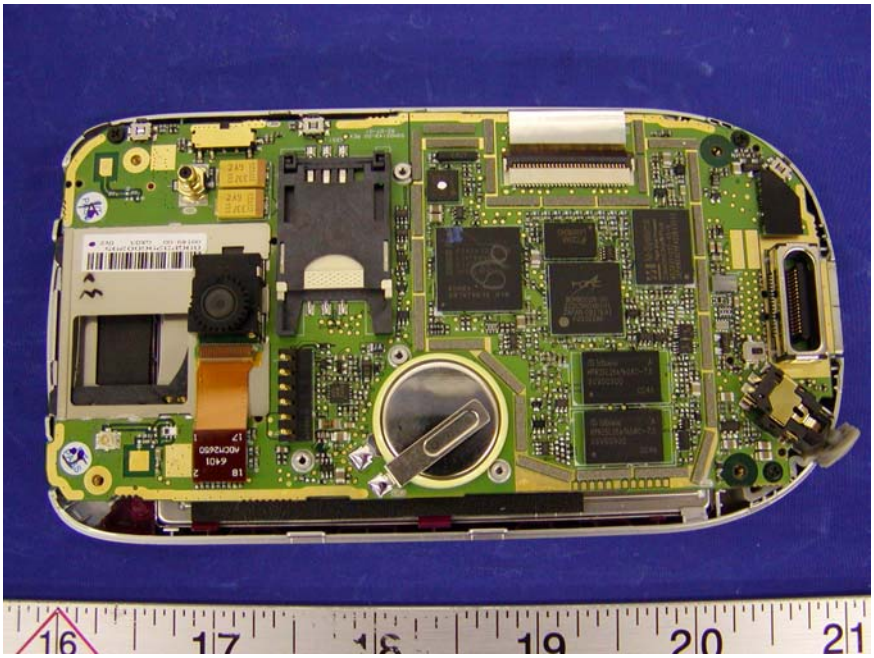
EUT – Rear View without Battery



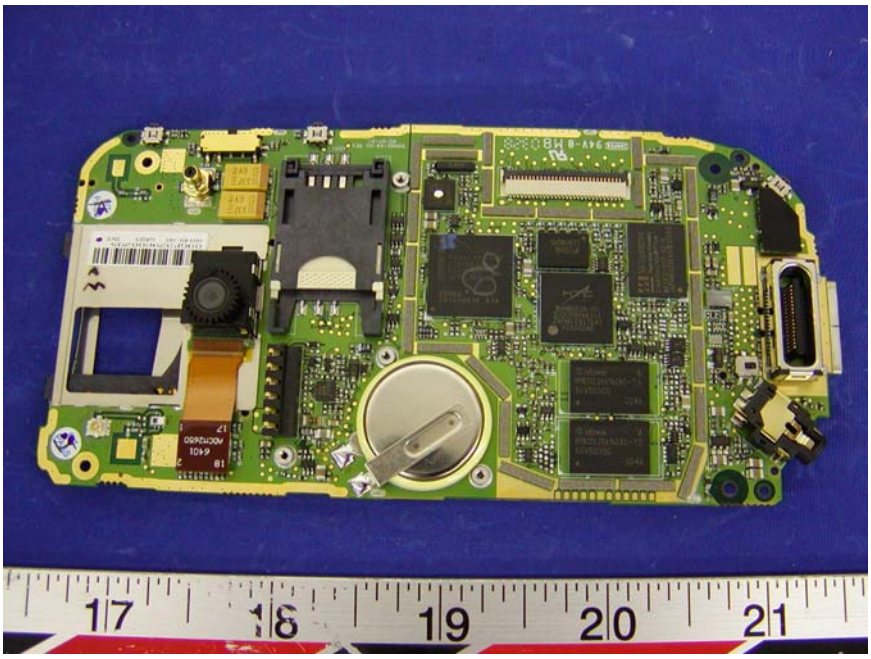
EUT – PH10A/PH10B Chassis Cover Off View



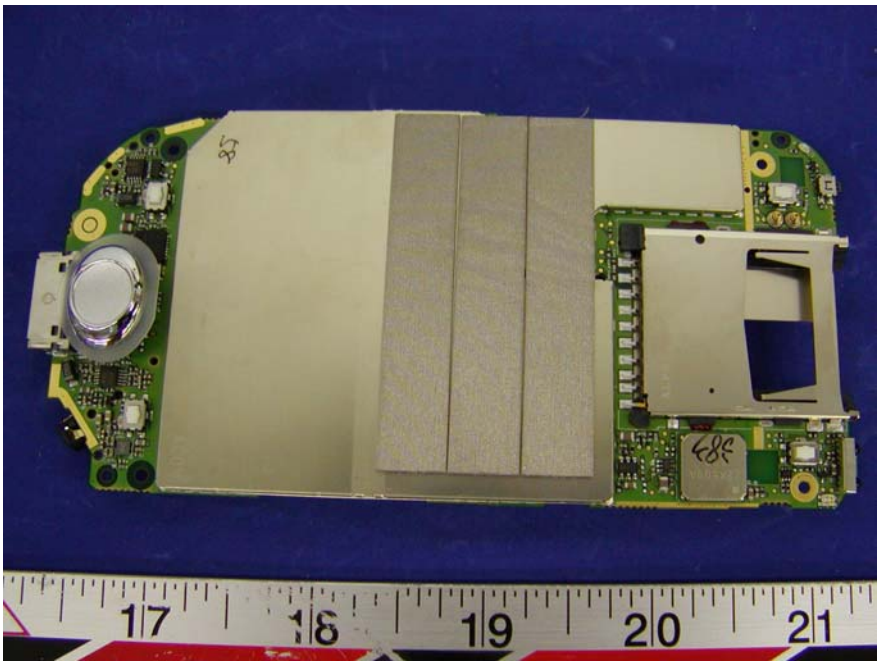
EUT – PH10A/PH10B Component View with Housing



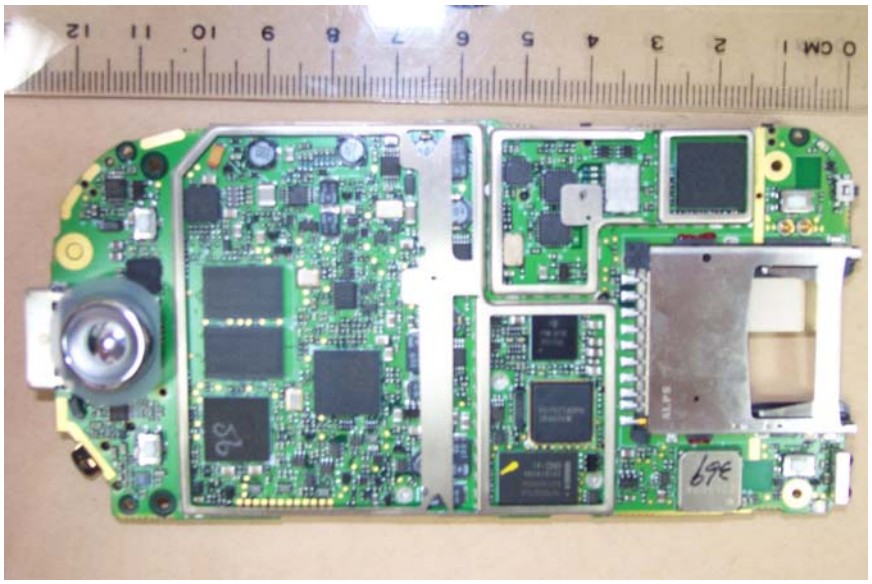
EUT – PH10A/PH10B Component View



EUT – PH10A/PH10B Solder View with Shield



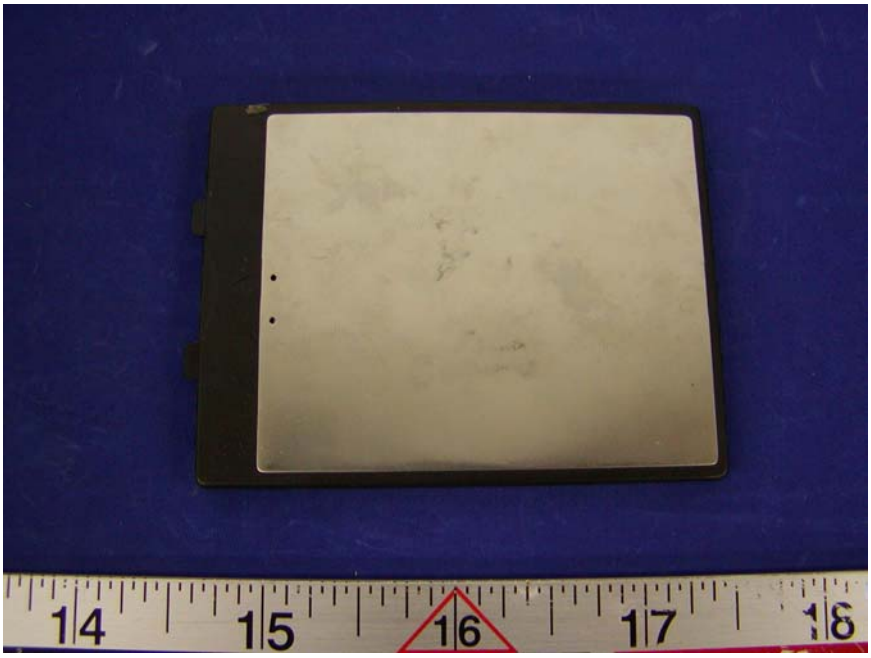
EUT – PH10A/PH10B Solder View without Shield



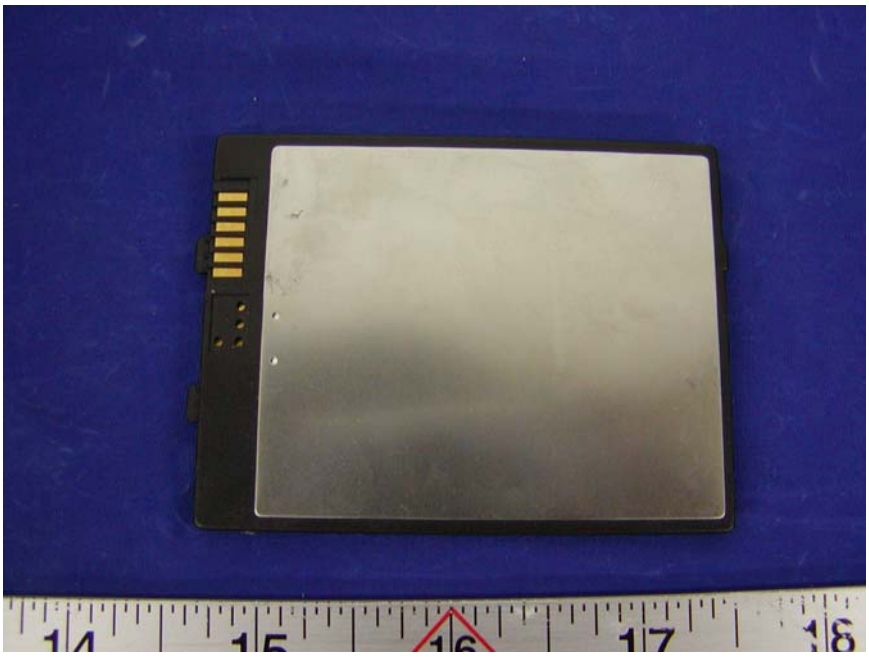
EUT – PH10A/PH10B Connector View 1

EUT – PH10A/PH10B Connector View 2

EUT – PH10A/PH10B Battery Front View



EUT – PH10A/PH10B Battery Rear View

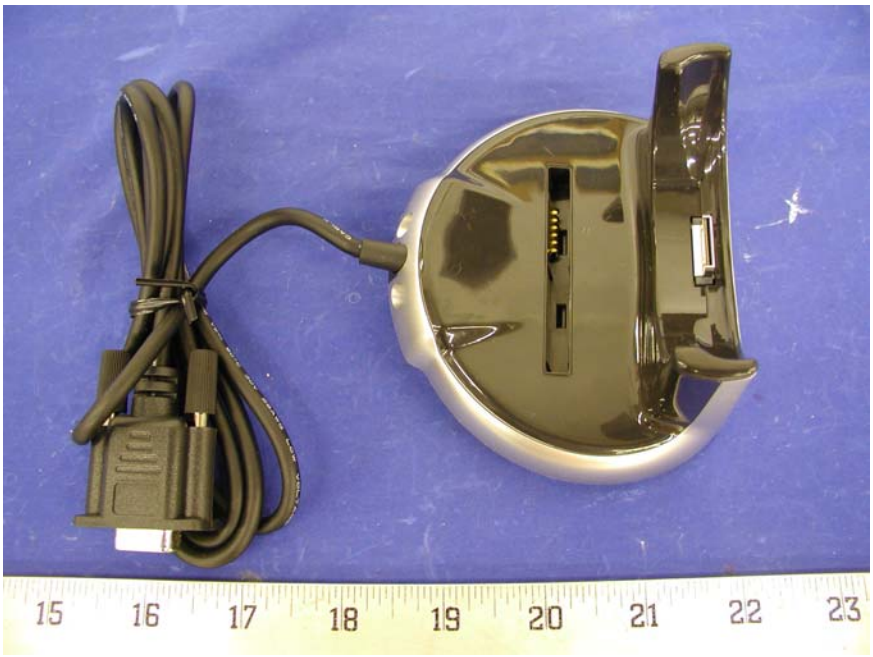


EUT – PH10A/PH10B Back Pack Top View

EUT – PH10A/PH10B Back Pack Bottom View

EUT – PH10A/PH10B Back Pack Rear View

Serial Cradle with Cable



USB Cradle with Cable

Serial Cable

USB Cable

VGA Cable

DC Connector View

Stereo Headset

Mono Headset

Pouch View 1

Pouch View 2


13 14 15 16 17 18 19 20 21 22 23 24 25 26
35 34 33 32 31 30 29 28 27 26 25 24 23 22

EXHIBIT C – Z-Axis

High Tech Computer, Model: SV10A (Body Worn, Back touching flat phantom with accessory (Headset), Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 22 Deg C, 08/21/2003)

SAM Phantom; Section; Position: ; Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 52.0 ρ = 1.31 g/cm^3

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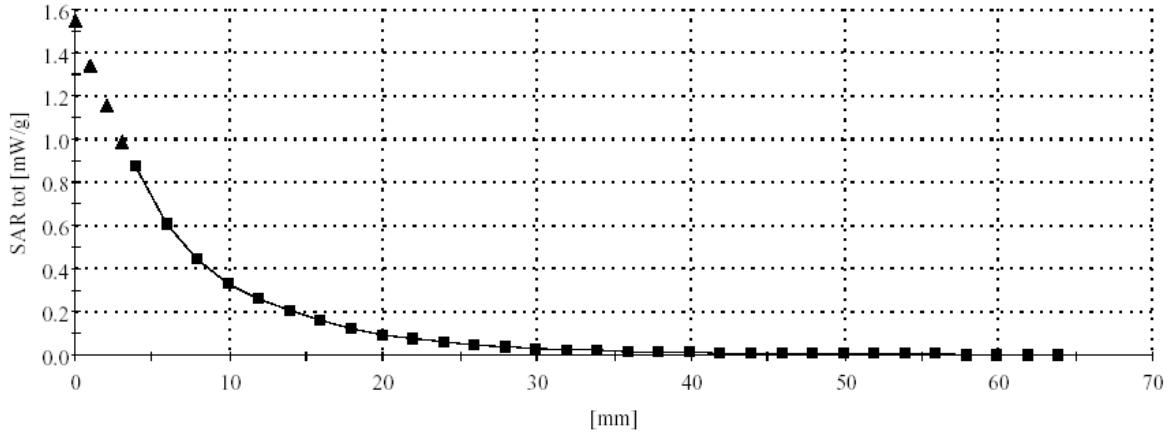
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 2.0



High Tech Computer, Model: SV10A (Body Worn, Back touching flat phantom, Mid channe
Ambient Temp = 23 DegC, Liquid Temp = 22 Deg C, 08/21/2003)
SAM Phantom; Section; Position: ; Frequency: 1880 MHz
Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 4.0; (Body) 1900 MHz: σ = 1.47 mho/m ε_r = 52.0 ρ = 1.31 g/cm^3
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Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 2.0