

## 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 SV10A, indicates that the averaged SAR value over one cubic gram of tissue is higher than the head SAR data for model SV10B. Therefore it is concluded that the model SV10A is the worst case EUT and is the one chosen for testing for Body SAR RF exposure.

Ambient Temperature (°C): 23.0

Relative Humidity (%): 53

Model	Position	Frequency (MHz)	Output Power (dBm)	Test Type	Liquid	Phantom	Notes / Accessories	Measured (mW/g)	Limit (mW/g)	Plot #
SV10A	Body Back Touching	1880	29.27	Body worn	Body	Flat	Belt Clip & Headset	0.289	1.6	1
		1880	29.27	Body worn	Body	Flat	Headset	0.779	1.6	2
	Body Face Touching	1880	29.27	Body worn	Body	Flat	Belt Clip & Headset	0.0579	1.6	3
		1880	29.27	Body worn	Body	Flat	Headset	0.139	1.6	4
		1880	29.27	Body worn	Body	Flat	Headset	0.139	1.6	4
SV10A – GPRS Modulation	Body Back Touching	1880	29.27	Body worn	Body	Flat	Serial Cable	0.538	1.6	5
		1880	29.27	Body worn	Body	Flat	None	0.613	1.6	6
SV10A	Left Head, Cheek	1880	29.27	Face-held	Head	Flat	None	0.142	1.6	7
	Left Head, Tilted	1880	29.27	Face-held	Head	Flat	None	0.151	1.6	8
	Right Head, Cheek	1880	29.27	Face-held	Head	Flat	None	0.169	1.6	9
	Right Head, Tilted	1880	29.27	Face-held	Head	Flat	None	0.198	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 #
SV10B	Left Head, Cheek	1880	29.27	Face-held	Head	Flat	None	0.0969	1.6	11
	Left Head, Tilted	1880	29.27	Face-held	Head	Flat	None	0.141	1.6	12
	Right Head, Cheek	1880	29.27	Face-held	Head	Flat	None	0.122	1.6	13
	Right Head, Tilted	1880	29.27	Face-held	Head	Flat	None	0.127	1.6	14

**8.2 Plots of Test Result**

The plots of test result were attached as reference.

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

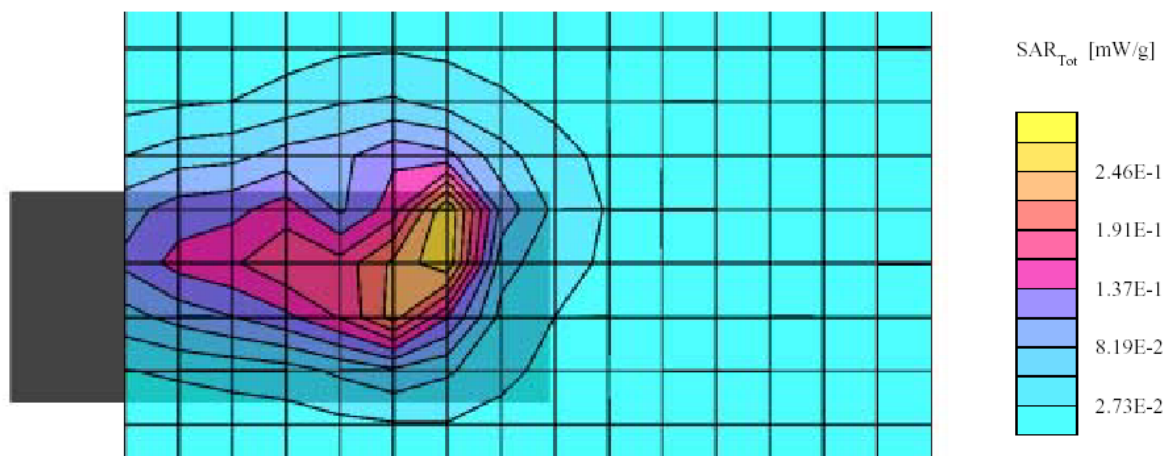
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz:  $\sigma = 1.47$  mho/m  $\epsilon_r = 52.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.289 mW/g, SAR (10g): 0.158 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: 0.02 dB



Plot #1

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)

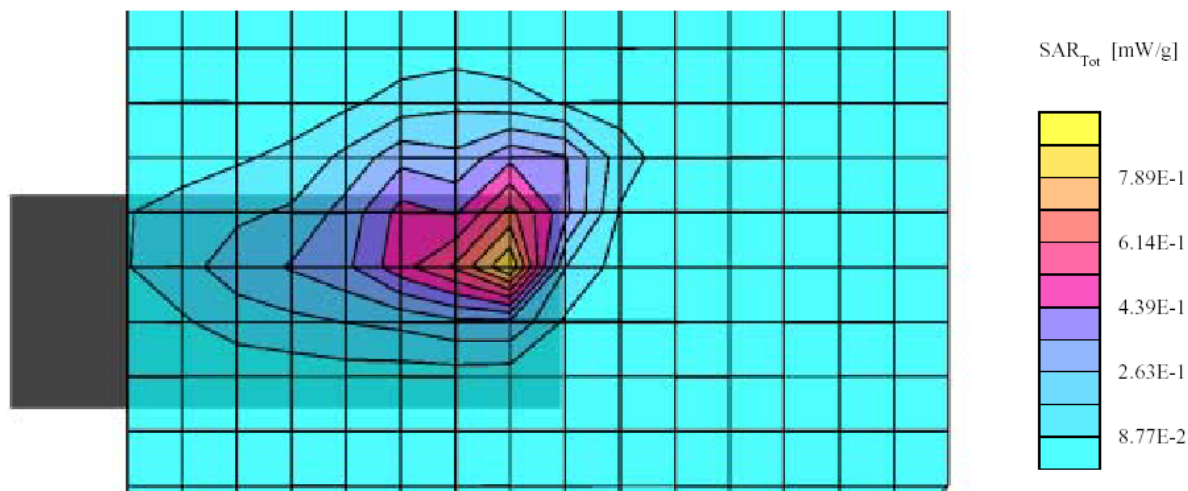
SAM Phantom; Flat Section; Position: (270°, 270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz:  $\sigma = 1.47 \text{ mho/m}$ ,  $\epsilon_r = 52.0$ ,  $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.779 mW/g, SAR (10g): 0.371 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: -0.00 dB



Plot #2

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

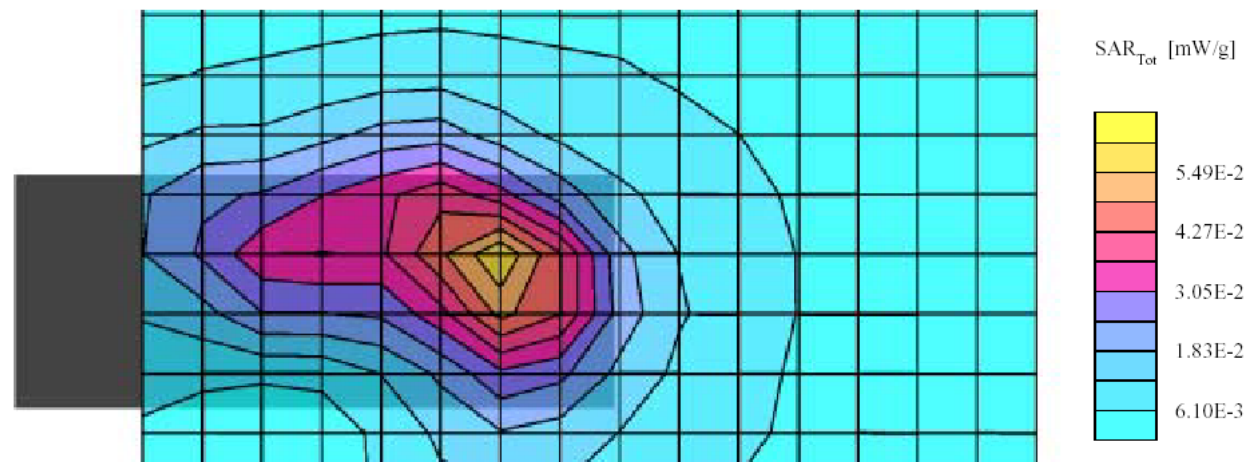
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz:  $\sigma = 1.47$  mho/m  $\epsilon_r = 52.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.0579 mW/g, SAR (10g): 0.0348 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: -0.00 dB



Plot #3

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

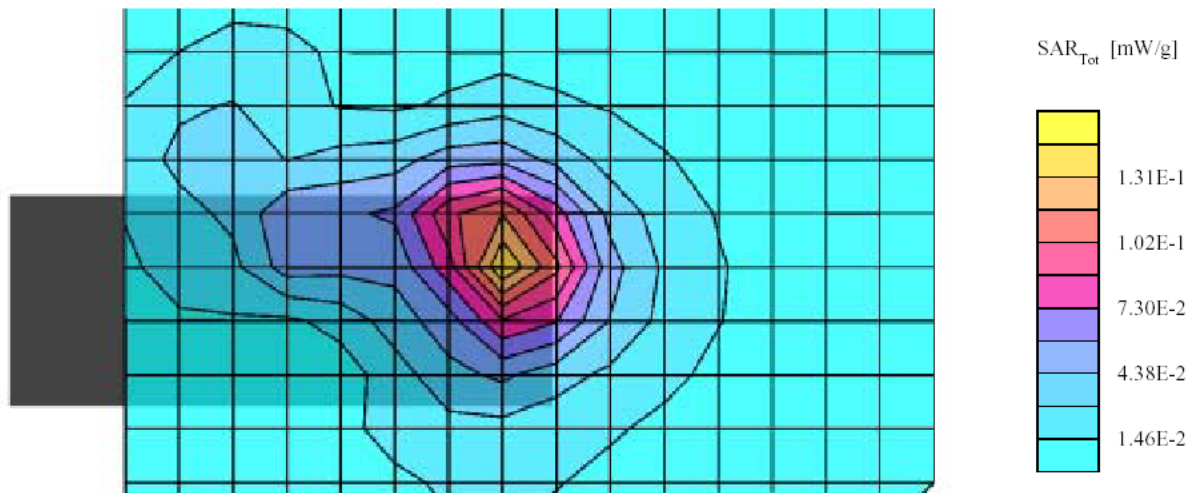
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 8.0; (Body) 1900 MHz:  $\sigma = 1.47 \text{ mho/m}$ ,  $\epsilon_r = 52.0$ ,  $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.139 mW/g, SAR (10g): 0.0789 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: -0.02 dB



Plot #4

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

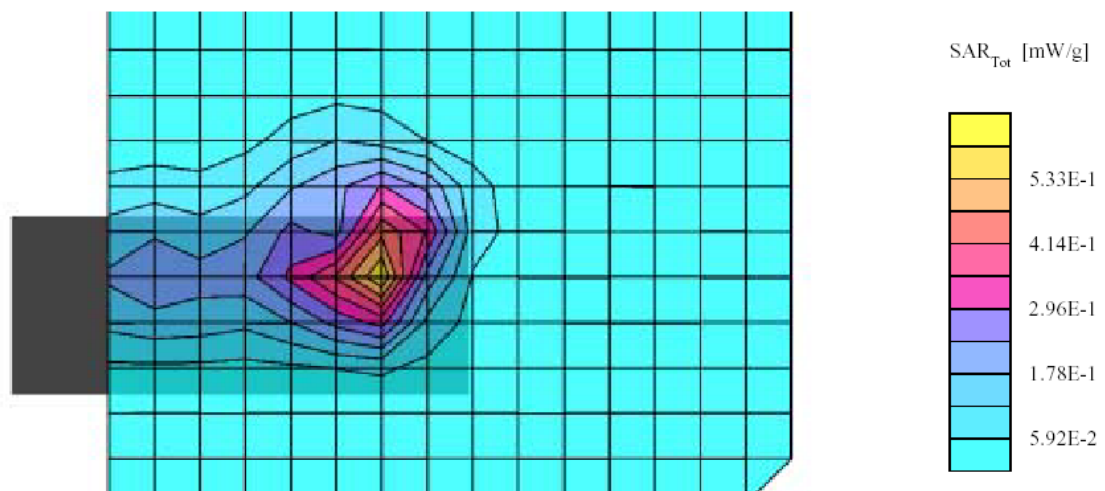
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 4.0; (Body) 1900 MHz:  $\sigma = 1.47 \text{ mho/m}$ ,  $\epsilon_r = 52.0$ ,  $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.538 mW/g, SAR (10g): 0.285 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: -0.02 dB



Plot #5

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

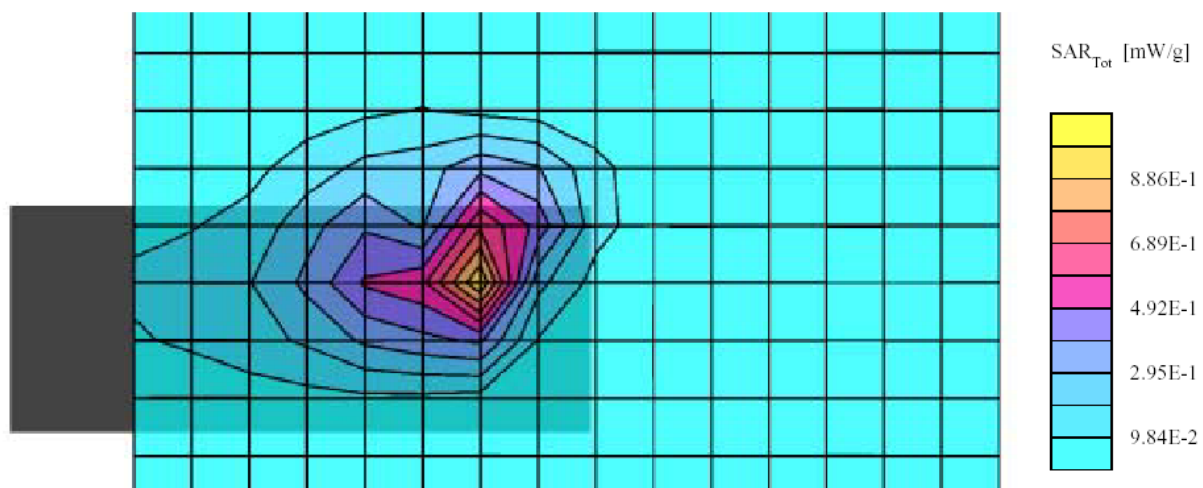
SAM Phantom; Flat Section; Position: (270°,270°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(4.90,4.90,4.90); Crest factor: 4.0; (Body) 1900 MHz:  $\sigma = 1.47 \text{ mho/m}$ ,  $\epsilon_r = 52.0$ ,  $\rho = 1.31 \text{ g/cm}^3$

Cubes (2): SAR (1g):  $0.613 \text{ mW/g} \pm 1.69 \text{ dB}$ , SAR (10g):  $0.299 \text{ mW/g} \pm 1.32 \text{ dB}$ , (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 12.0, Dz = 10.0

Powerdrift: -0.03 dB



Plot #6



High Tech Computer, Model: SV10A (Left Head, Cheek, Mid channel, Ambient Temp = 23  
DegC, Liquid Temp = 21 Deg C, 08/13/2003)

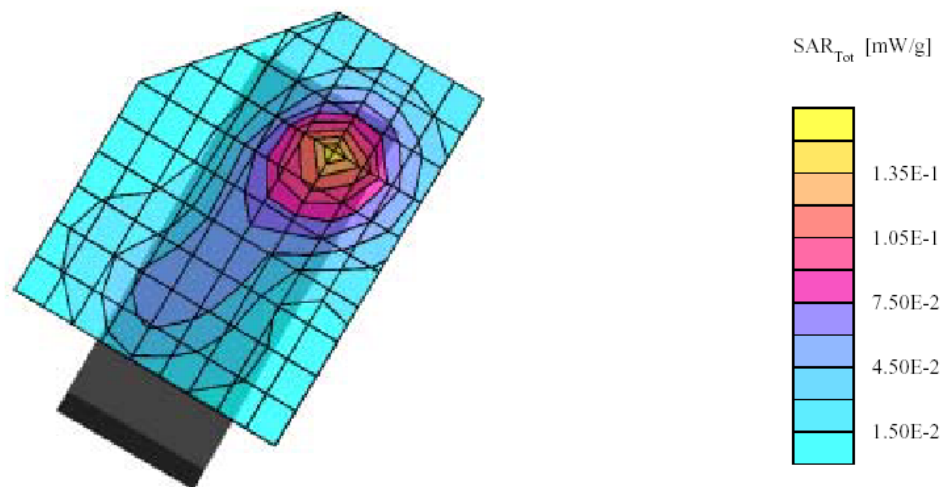
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 38.0$   $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.142 mW/g, SAR (10g): 0.0798 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0

Powerdrift: 0.03 dB



Plot #7

High Tech Computer, Model: SV10A (Left Head, Tilted, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

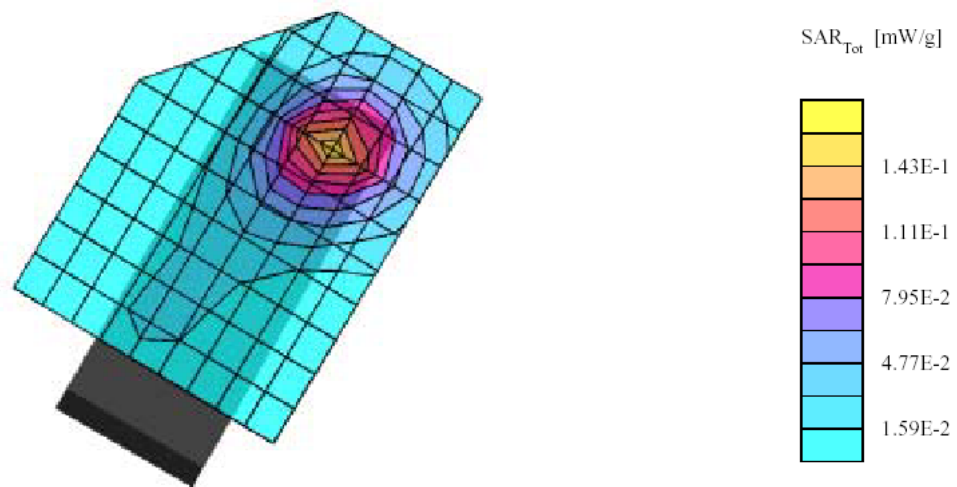
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45$  mho/m  $\epsilon_r = 38.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.151 mW/g, SAR (10g): 0.0841 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0

Powerdrift: -0.03 dB



Plot #8

High Tech Computer, Model: SV10A (Right Head, Cheek, Mid channel, Ambient Temp  
= 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

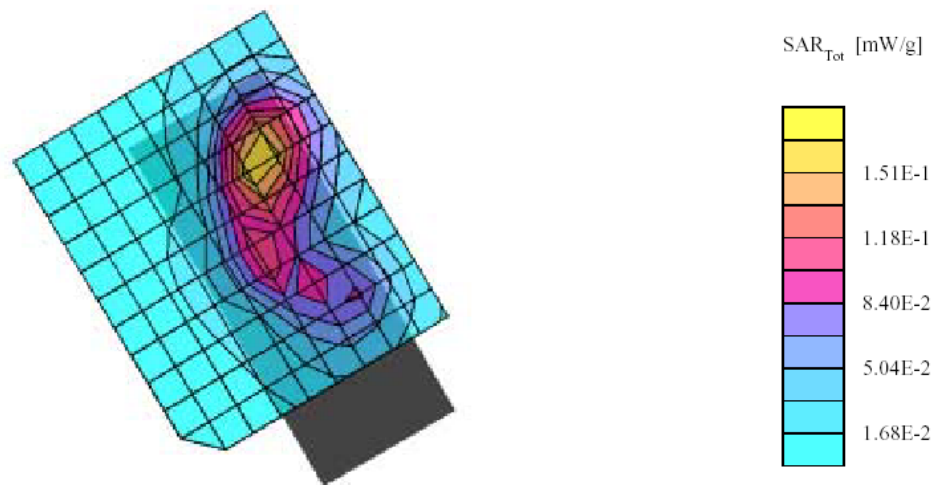
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45$  mho/m  $\epsilon_r = 38.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.169 mW/g, SAR (10g): 0.0955 mW/g, (Worst-case extrapolation)

Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0

Powerdrift: -0.02 dB



Plot #9

High Tech Computer, Model: SV10A (Right Head, Tilted, Mid channel, Ambient Temp  
= 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

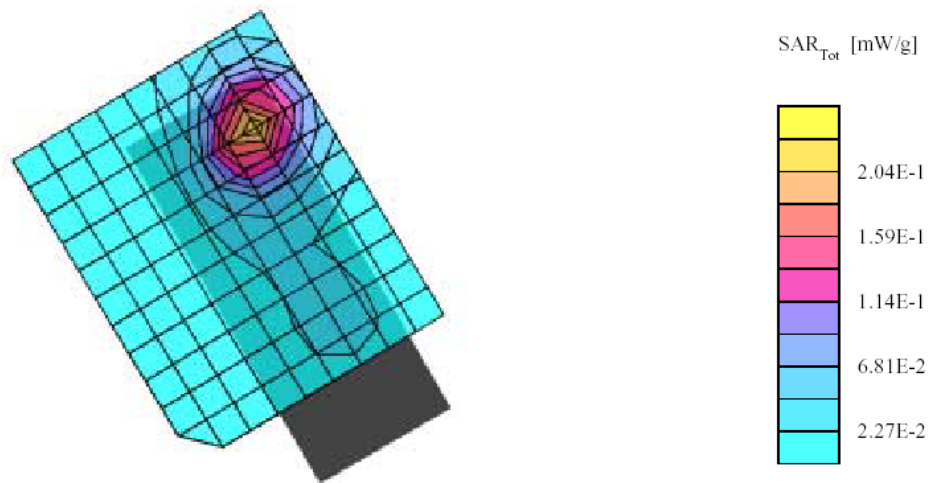
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45$  mho/m  $\epsilon_r = 38.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.198 mW/g, SAR (10g): 0.109 mW/g, (Worst-case extrapolation)

Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0

Powerdrift: -0.00 dB



Plot #10

High Tech Computer, Model: SV10B (Left Head, Cheek, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

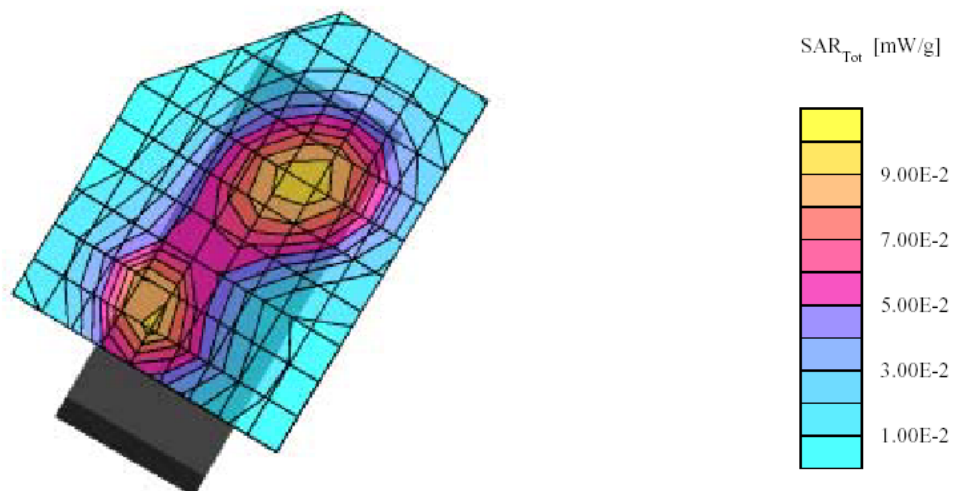
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45$  mho/m  $\epsilon_r = 38.0$   $\rho = 1.31$  g/cm<sup>3</sup>

Cube 5x5x7: SAR (1g): 0.0969 mW/g, SAR (10g): 0.0591 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0

Powerdrift: -0.01 dB



Plot #11

High Tech Computer, Model: SV10B (Left Head, Tilted, Mid channel, Ambient Temp = 23  
DegC, Liquid Temp = 21 Deg C, 08/13/2003)

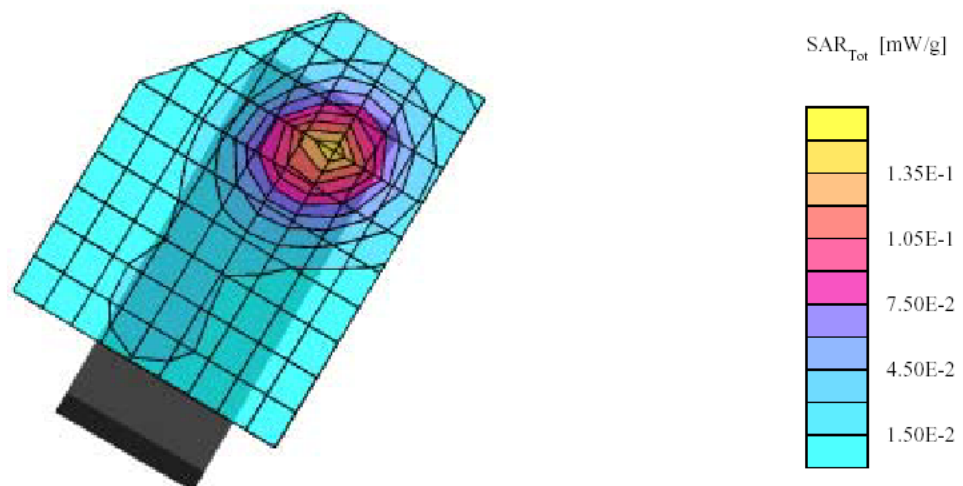
SAM Phantom; Left Hand Section; Position: (74°,60°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 38.0$   $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.141 mW/g, SAR (10g): 0.0797 mW/g, (Worst-case extrapolation)

Coarse: Dx = 12.0, Dy = 10.0, Dz = 10.0

Powerdrift: -0.02 dB



Plot #12

High Tech Computer, Model: SV10B (Right Head, Cheek, Mid channel, Ambient Temp  
= 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

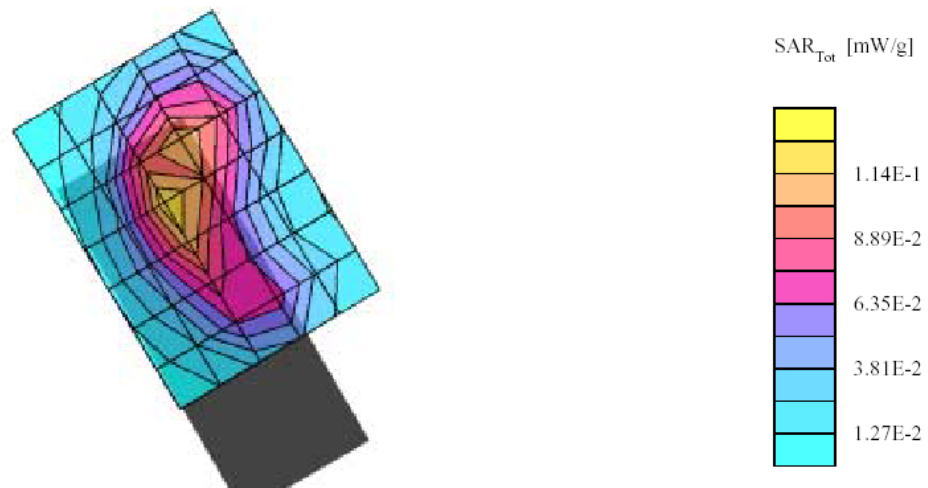
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 38.0$   $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.122 mW/g, SAR (10g): 0.0746 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Powerdrift: 0.05 dB



Plot #13

High Tech Computer, Model: SV10B (Right Head, Tilted, Mid channel, Ambient Temp = 23 DegC, Liquid Temp = 21 Deg C, 08/13/2003)

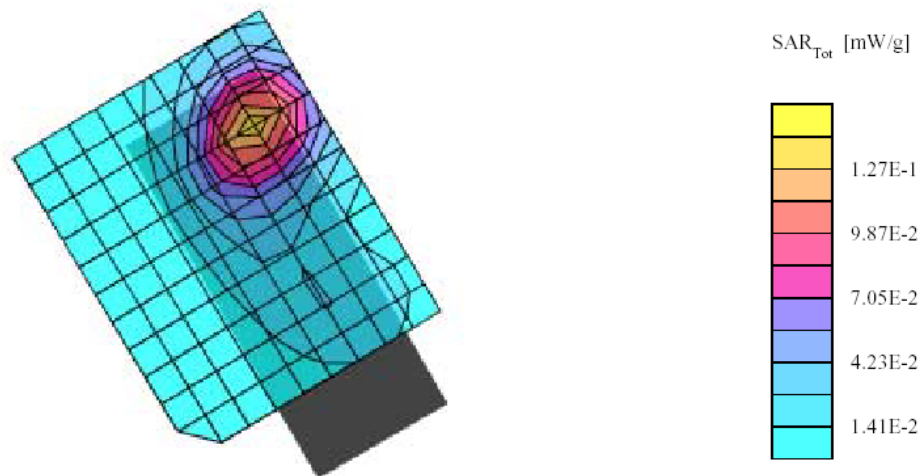
SAM Phantom; Righ Hand Section; Position: (90°,300°); Frequency: 1880 MHz

Probe: ET3DV6 - SN1604; ConvF(5.50,5.50,5.50); Crest factor: 8.0; (Head) 1900 MHz:  $\sigma = 1.45 \text{ mho/m}$   $\epsilon_r = 38.0$   $\rho = 1.31 \text{ g/cm}^3$

Cube 5x5x7; SAR (1g): 0.127 mW/g, SAR (10g): 0.0729 mW/g, (Worst-case extrapolation)

Coarse: Dx = 10.0, Dy = 10.0, Dz = 8.0

Powerdrift: -0.01 dB



Plot #14



## **EXHIBIT A - SAR SETUP PHOTOGRAPHS**

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### **SV10A Body Worn, Back Touching Flat Phantom with Headset and Belt Clip**



### **SV10A Body Worn, Back Touching Flat Phantom with Headset**



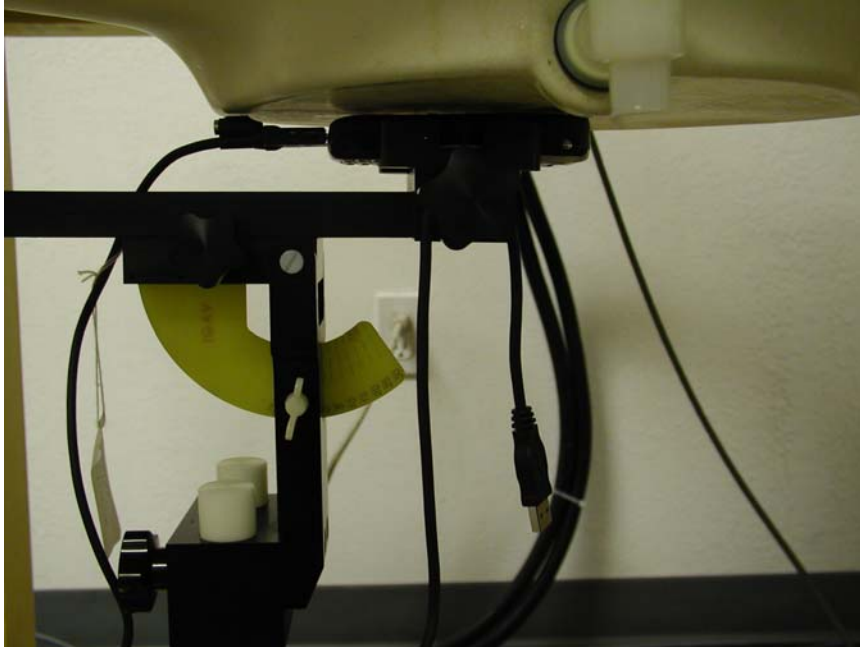
**SV10A Body Worn, Face Touching Flat Phantom with Headset and Belt Clip**



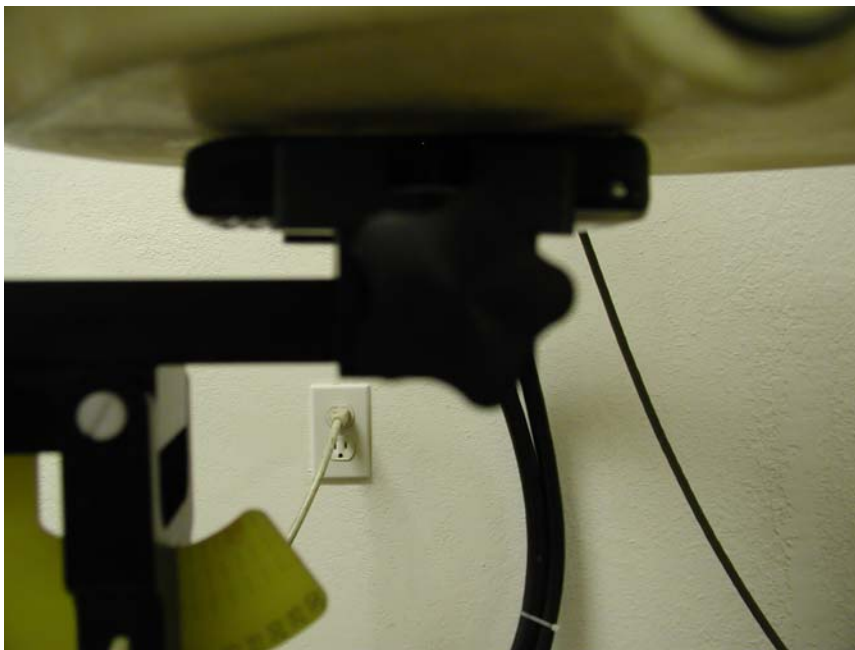
**SV10A Body Worn, Face Touching Flat Phantom with Headset**



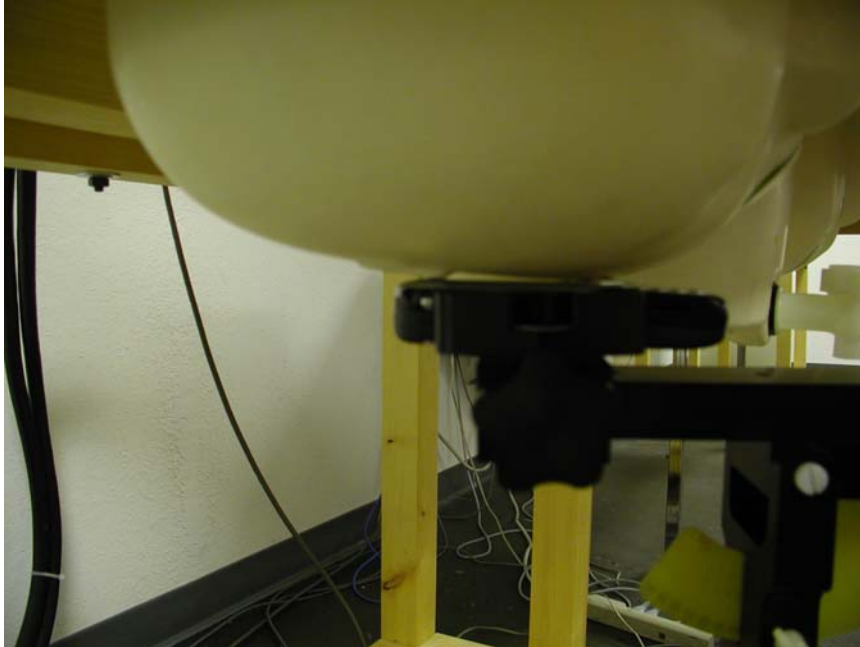
### **GPRS – Body Worn, Back Touching with Phantom with Serial Cable**



### **GPRS – Body Worn, Back Touching with Phantom**



### **SV10A Left Head, Cheek**



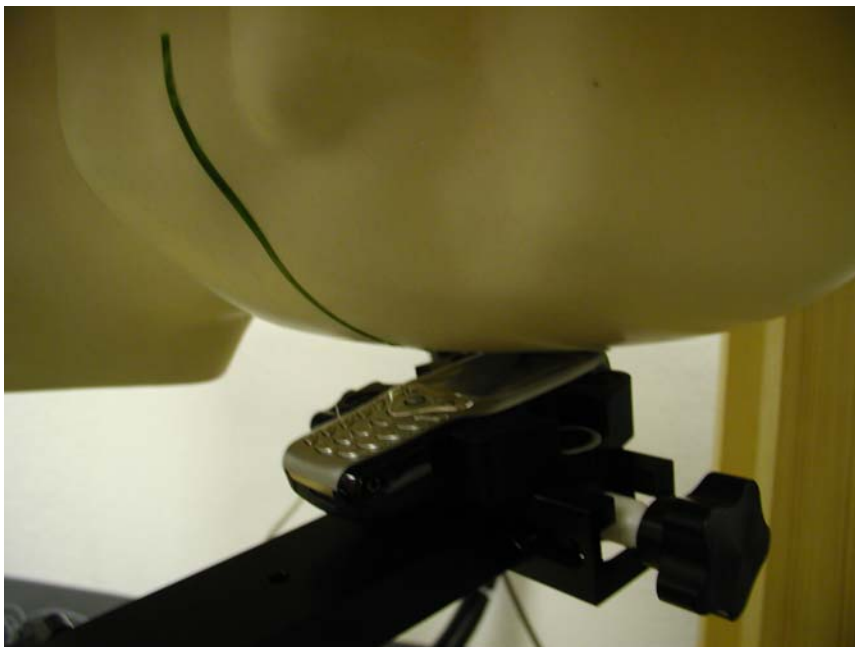
### **SV10A Left Head, Tilted**



### **SV10A Right Head, Cheek**



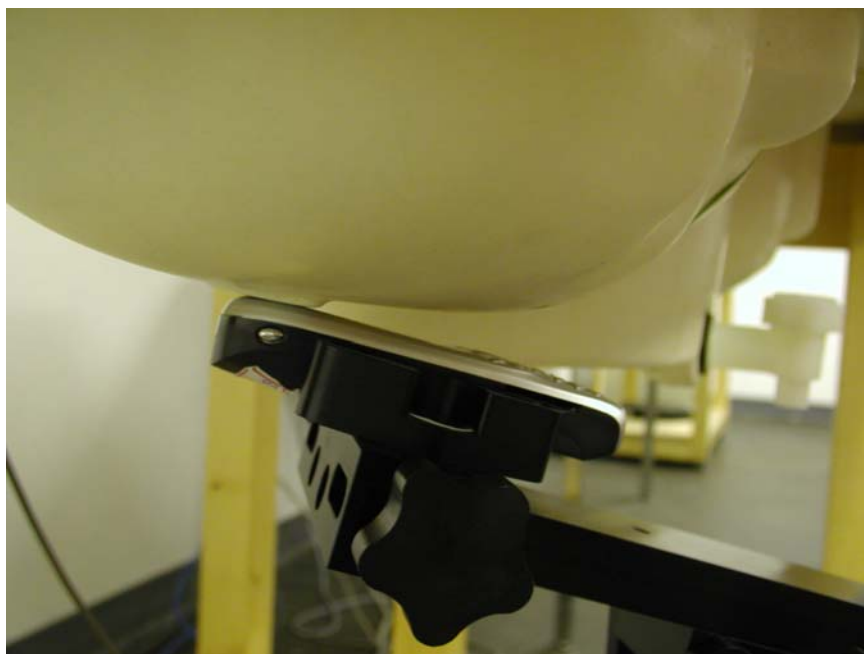
### **SV10A Right Head, Tilted**



### **SV10B Left Head, Cheek**

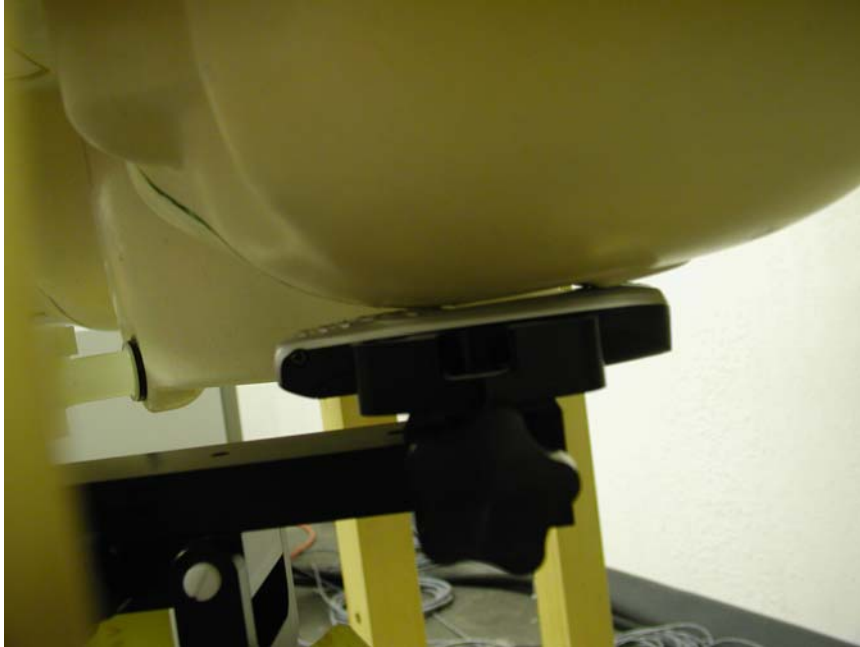


### **SV10B Left Head, Tilted**

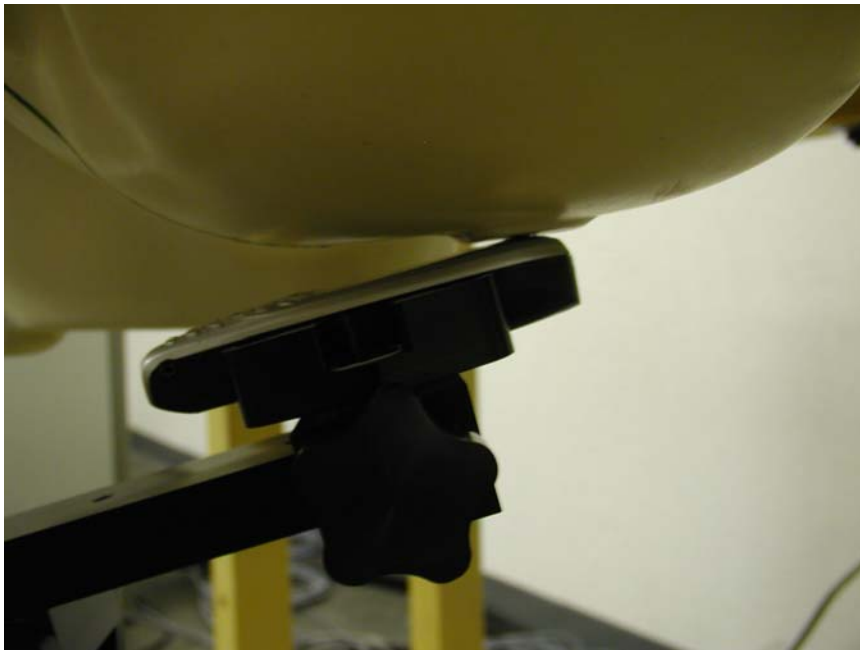




### **SV10B Right Head, Cheek**



### **SV10B Right Head, Tilted**

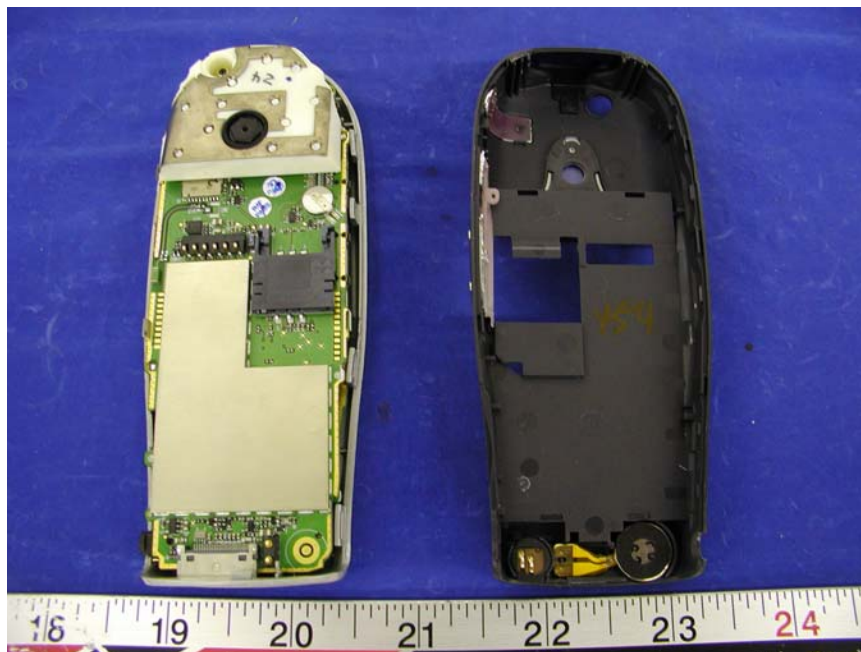


**EXHIBIT B – EUT PHOTOGRAPHS**

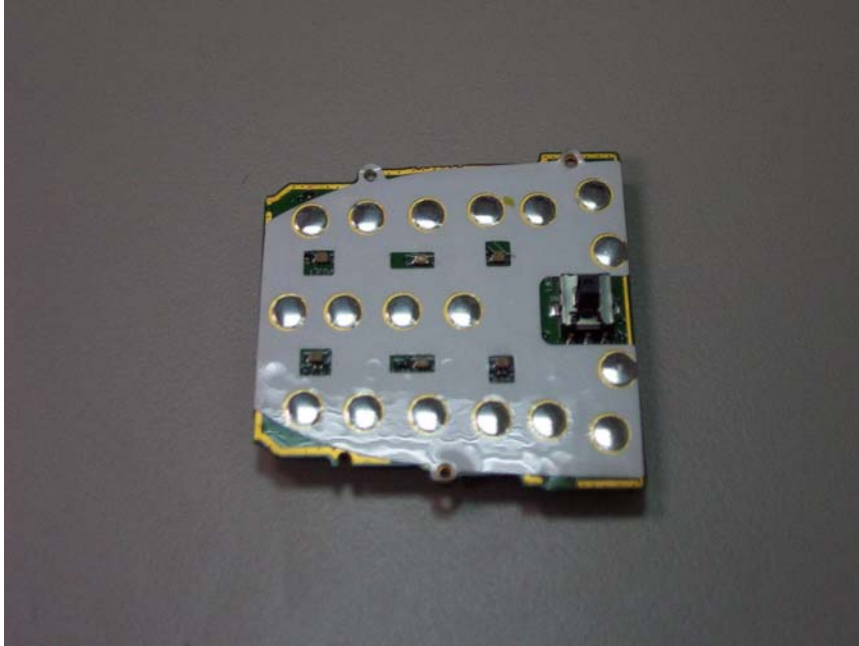
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**EUT – SV10A Top View****EUT – SV10A Rear View**



**EUT – SV10A Rear View without Battery****EUT – SV10A Chassis Cover Off View**

### EUT – SV10A Keypad Front View



### EUT – SV10A Keypad Rear View



**EUT – SV16A Dynapack Battery Front View****EUT – SV16A Dynapack Battery Rear View**

**EUT – SV16A Samsung SDI Battery Front View****EUT – SV16A Samsung SDI Battery Rear View**



**EUT – SV10A Bezel Front View**



**EUT – SV10A Bezel Rear View**



### EUT – SV10B Top View



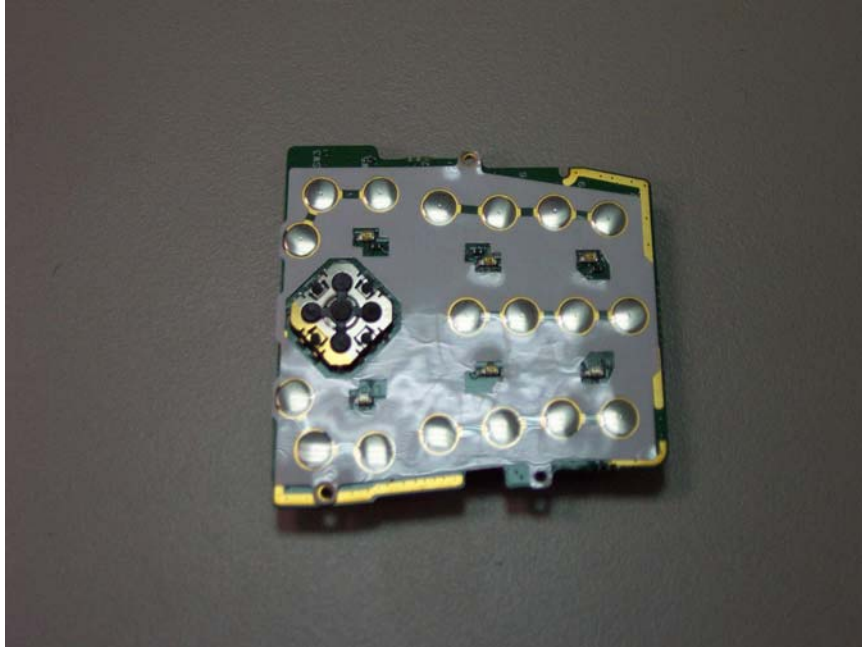
### EUT – SV10B Rear View



**EUT – SV10B Rear View without Battery****EUT – SV10B Chassis Cover Off View**



## EUT – SV10B Keypad Front View



## EUT – SV10B Keypad Rear View

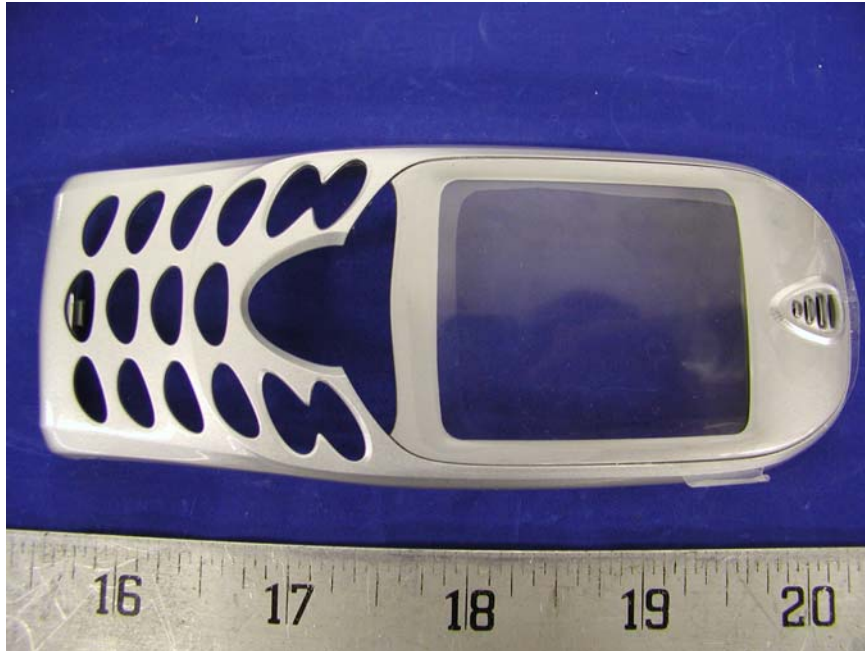




**EUT – SV16B Dynapack Battery Front View****EUT – SV16B Dynapack Battery Rear View**

**EUT – SV16B Samsung SDI Battery Front View****EUT – SV16B Samsung SDI Battery Rear View**

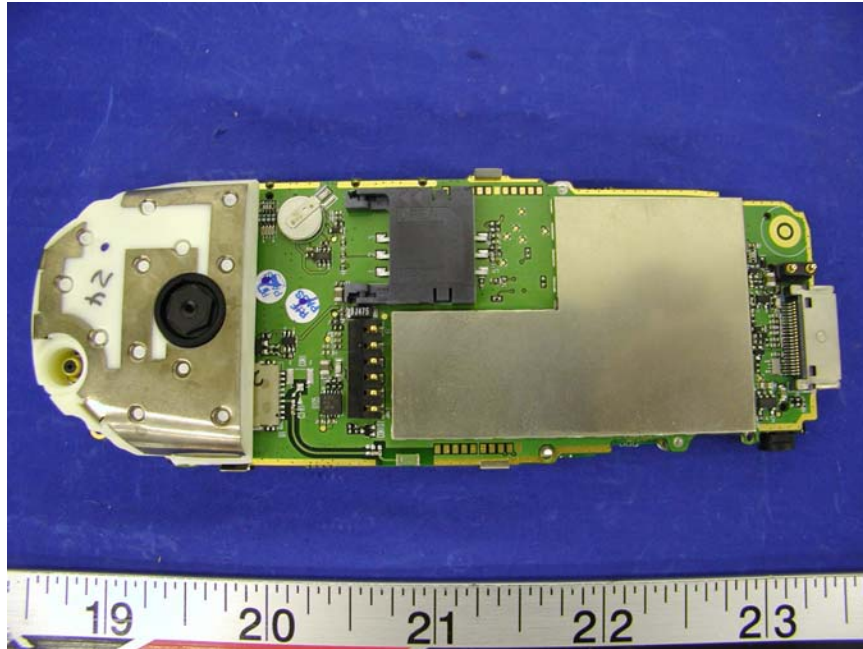
**EUT – SV10B Bezel Front View**



**EUT – SV10B Bezel Rear View**



### **EUT SV10A/SV10B – Component View**

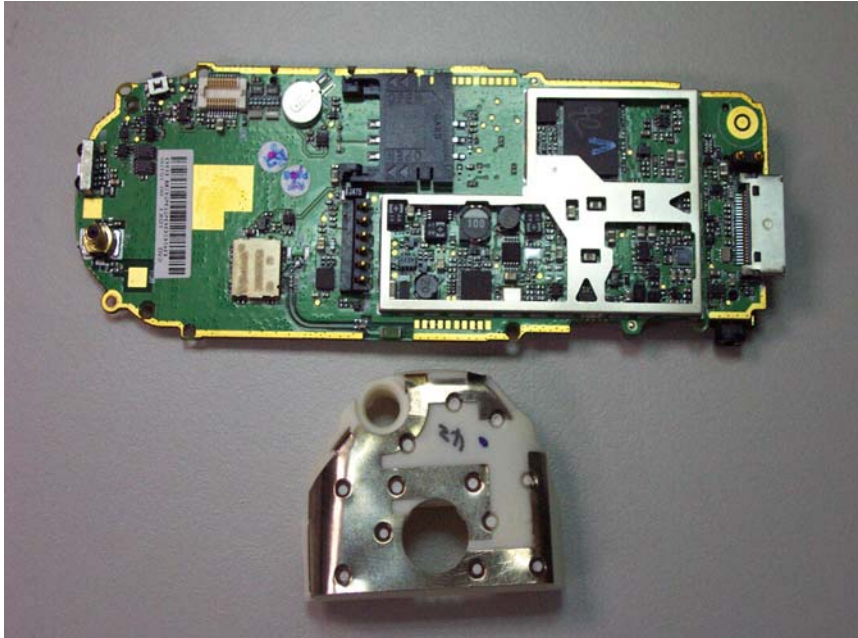


### **EUT SV10A/SV10B – Component View with Shield**

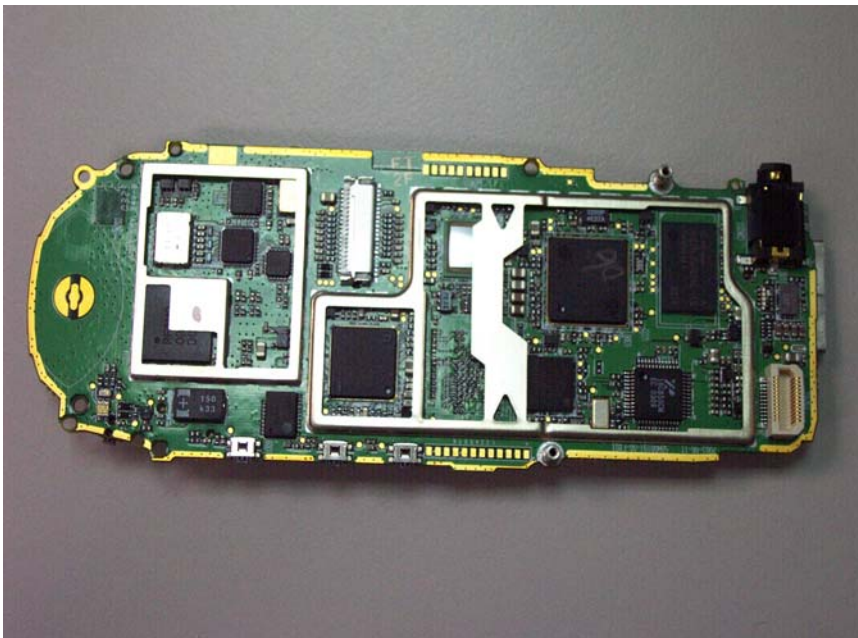


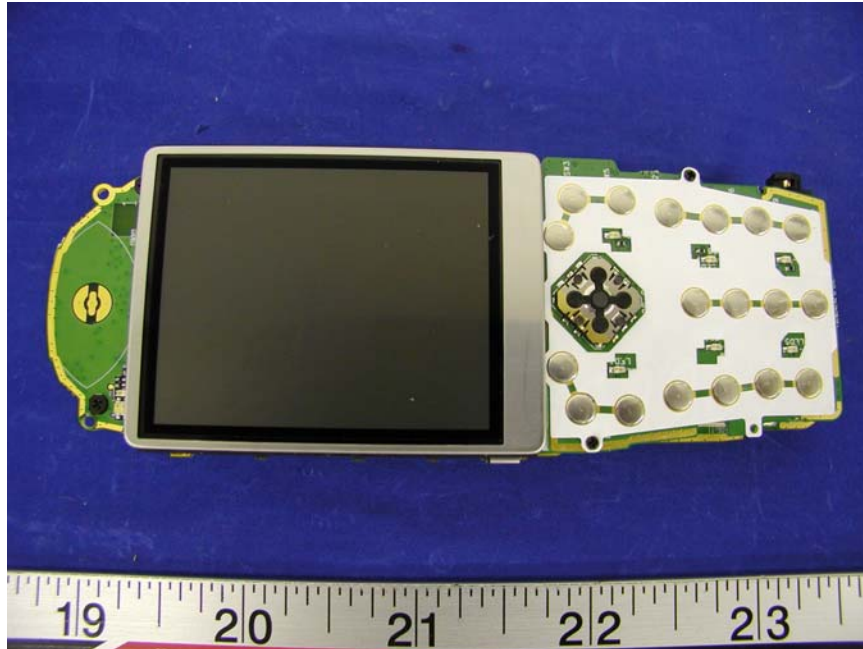


### **EUT SV10A/SV10B – Component View without Shield 1**



### **EUT SV10A/SV10B – Component View without Shield 2**



**EUT SV10A/SV10B – LCD Display View****DELTA Adapter View**

**PHIHONG Adapter View****USB Cradle View**



### RS-232 Cradle View



### Earphone View





### USB Cable View



### RS-232 Cable View



### Pouch View



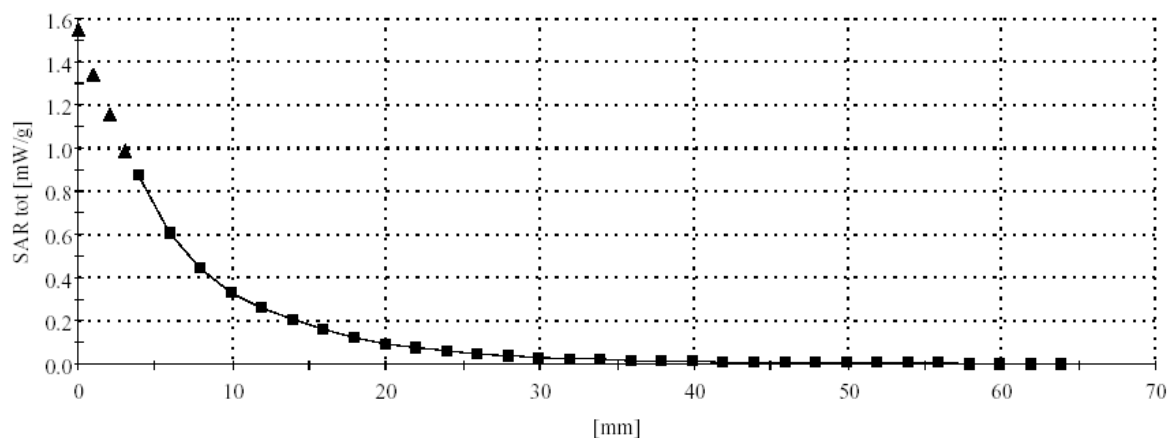
**EXHIBIT C – Z-Axis**

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:  $\sigma = 1.47$  mho/m  $\epsilon_r = 52.0$   $\rho = 1.31$  g/cm<sup>3</sup>  
: , 0

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



High Tech Computer, Model: SV10A (Body Worn, Back touching flat phantom, 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: 4.0; (Body) 1900 MHz:  $\sigma = 1.47 \text{ mho/m}$   $\epsilon_r = 52.0$   $\rho = 1.31 \text{ g/cm}^3$

∴, 0

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

