



## CERTIFICATE OF COMPLIANCE (SAR EVALUATION)

**APPLICANT NAME & ADDRESS:**

SAMSUNG ELECTRONICS CO., LTD.  
 416 Maetan-3 Dong, Paldal-Ku  
 Suwon City Kyungki-Do 441-742, KOREA  
 Attn: Wallace Oh, Engineering Manager  
 Samsung Electronics America (QA Lab)

**DATE & LOCATION OF TESTING:**

Dates of Tests: March 25-28, 2002  
 Test Report S/N: 22/24.220325126.A3L  
 Test Site: PCTEST Lab, Columbia MD

<b>FCC ID:</b>	<b>A3LSPHI330</b>
<b>APPLICANT:</b>	<b>SAMSUNG ELECTRONICS CO., LTD.</b>

<b>EUT Type:</b>	Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)
<b>Tx Frequency:</b>	824.04 – 848.97 MHz (AMPS) / 824.70 – 848.31 MHz (CDMA) 1851.25 – 1908.75 MHz (PCS CDMA)
<b>Rx Frequency:</b>	869.04 – 893.97 MHz (AMPS) / 869.70 – 893.31 MHz (CDMA) 1931.25 – 1988.75 MHz (PCS CDMA)
<b>Max. RF Output Power:</b>	0.535 W ERP AMPS (27.283 dBm) / 26.5 dBm Conducted 0.477 W ERP CDMA (26.783 dBm) / 26.0 dBm Conducted 0.452 W EIRP PCS CDMA (26.551 dBm) / 24.5 dBm Conducted
<b>Max. SAR Measurement:</b>	1.400W/kg AMPS Head SAR; 0.989W/kg AMPS Body SAR; 1.090W/kg CDMA Head SAR; 0.788W/kg CDMA Body SAR; 1.370W/kg PCS CDMA Head SAR; 0.714W/kg PCS CDMA Body SAR
<b>Trade Name/Model(s):</b>	<i>SPH-i330</i>
<b>FCC Classification:</b>	Licensed Portable Transmitter Held to Ear (PCE)
<b>FCC Rule Part(s):</b>	§2.1093; FCC/OET Bulletin 65 Supplement C [July 2001]
<b>Application Type:</b>	Certification
<b>Test Device Serial No.:</b>	<i>identical prototype</i>

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in FCC/OET Bulletin 65 Supplement C (2001) and IEEE Std. 1528-200X (Draft 6.4, July 2001).

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

*PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.*

  
**Alfred Cirwithian**  
**Vice President Engineering**



<b>PCTEST™ SAR REPORT</b>		<b>FCC CERTIFICATION</b>		<b>Reviewed by:</b> Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 1 of 35

## 12. SYSTEM VERIFICATION

### Tissue Verification

Table 12.1 Simulated Tissue Verification [5]

MEASURED TISSUE PARAMETERS									
Date(s)	03/18/02	835MHz Brain		835MHz Muscle		1900MHz Brain		1900MHz Muscle	
Liquid Temperature (°C)	22.6	Target	Measured	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: $\epsilon$		41.50	43.40	55.20	55.50	40.00	40.30	53.30	54.00
Conductivity: $\sigma$		0.900	0.870	0.970	0.990	1.400	1.440	1.520	1.560

### Test System Validation

Prior to assessment, the system is verified to the  $\pm 10\%$  of the specifications at 835MHz and 1900MHz by using the system validation kit(s). (Graphic Plots Attached)

Table 12.2 System Validation [5]

SYSTEM DIPOLE VALIDATION TARGET & MEASURED				
System Validation Kit: D-835V2, S/N: 406	835MHz Brain	Targeted SAR <sub>1g</sub> (mW/g) 2.375	Measured SAR <sub>1g</sub> (mW/g) <b>2.45</b>	Deviation (%) <b>+ 3.2</b>
System Validation Kit: D-1900V2, S/N: 502	1900MHz Brain	Targeted SAR <sub>1g</sub> (mW/g) 9.925	Measured SAR <sub>1g</sub> (mW/g) <b>10.1</b>	Deviation (%) <b>+ 1.8</b>

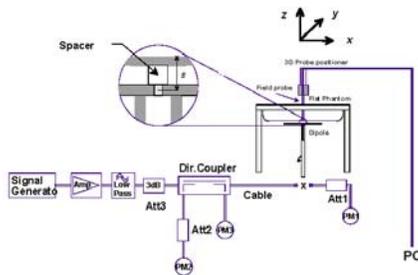


Figure 12.1 Dipole Validation Test Setup

PCTEST™ SAR REPORT	FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 16 of 35

## 13. SAR TEST DATA SUMMARY

[See Measurement Result Data Pages](#)

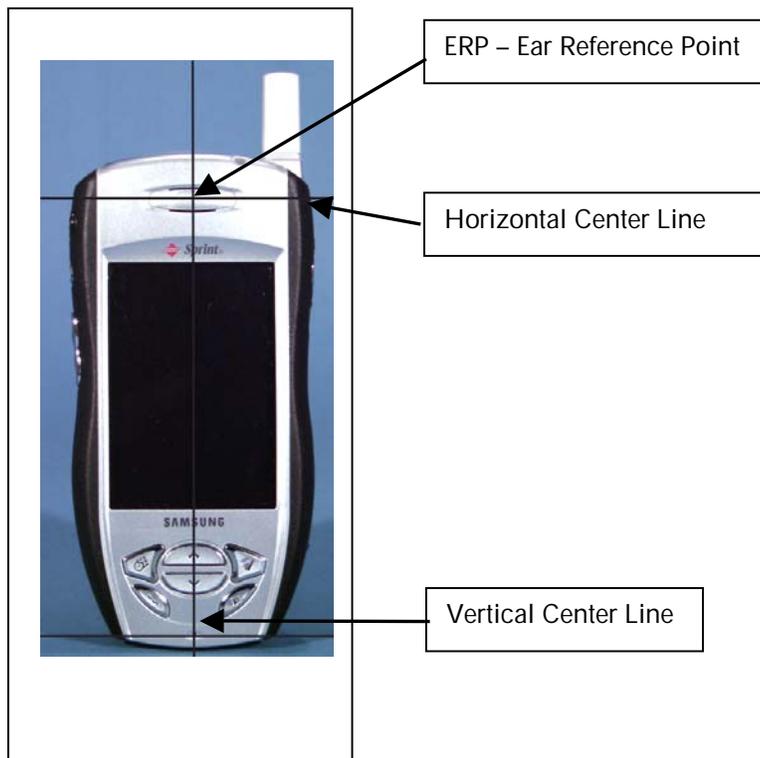
### Procedures Used To Establish Test Signal

The handset was placed into simulated call mode (AMPS, Cellular CDMA & PCS CDMA modes) using manufacturers test codes. Such test signals offer a consistent means for testing SAR and are recommended for evaluating SAR [4]. When test modes are not available or inappropriate for testing a handset, the actual transmission is activated through a base station simulator or similar equipment. See data pages for actual procedure used in measurement.

### Device Test Conditions

The handset is battery operated. Each SAR measurement was taken with a fully charged battery. In order to verify that the device was tested at full power, conducted output power measurements were performed before and after each SAR measurement to confirm the output power. If a conducted power deviation of more than 5% occurred, the test was repeated.

### EUT Handset Reference Points



**Figure 13.1 Handset Reference Points**

PCTEST™ SAR REPORT	 <b>FCC CERTIFICATION</b> 		Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330 Page 17 of 35

# SAR DATA SUMMARY

Mixture Type: 835MHz Brain

14.1 MEASUREMENT RESULTS (AMPS Right Head SAR – Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
824.04	0991	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	0.959
836.49	0383	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	1.120
848.97	0799	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	1.160
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP                  |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |  |
| <input type="checkbox"/> Left Head                   | <input type="checkbox"/> Flat Phantom           | <input checked="" type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand                  |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |  |
- SAR Measurement System
  - Phantom Configuration
  - SAR Configuration
  - Test Signal Call Mode
  - Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1

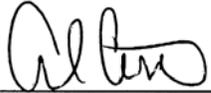
  
**Alfred Cirwithian**  
Vice President Engineering



Figure 14.1 Right Head SAR Test Setup -- Cheek / Touch Position --

PCTEST™ SAR REPORT	FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 18 of 35

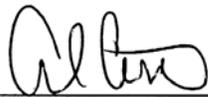
## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.2 MEASUREMENT RESULTS (AMPS Right Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
824.04	0991	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	0.776
836.49	0383	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	0.928
848.97	0799	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	0.871
<b>ANSI / IEEE C95.1 1992 - SAFETY LIMIT</b>						<b>Brain</b>		
<b>Spatial Peak</b>						<b>1.6 W/kg (mW/g)</b>		
<b>Uncontrolled Exposure/General Population</b>						averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP                  |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |  |
| <input type="checkbox"/> Left Head                   | <input type="checkbox"/> Flat Phantom           | <input checked="" type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand                  |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |  |
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



**Figure 14.2 Right Head SAR Test Setup**  
-- Ear / 15° Tilt Position --

PCTEST™ SAR REPORT	 <b>FCC CERTIFICATION</b> 			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 19 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.3 MEASUREMENT RESULTS (AMPS Left Head SAR - Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
824.04	0991	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	1.360
836.49	0383	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	1.290
848.97	0799	AMPS	26.5	26.5	Standard	Cheek / Touch	Fixed	1.400
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |                                     |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP       |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |                                     |
| <input checked="" type="checkbox"/> Left Head        | <input type="checkbox"/> Flat Phantom           | <input type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand       |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |                                     |
- SAR Measurement System
  - Phantom Configuration
  - SAR Configuration
  - Test Signal Call Mode
  - Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



Figure 14.3 Left Head SAR Test Setup  
-- Cheek / Touch Position --

PCTEST™ SAR REPORT	 			FCC CERTIFICATION	Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330		Page 20 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.4 MEASUREMENT RESULTS (AMPS Left Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
824.04	0991	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	1.150
836.49	0383	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	1.170
848.97	0799	AMPS	26.5	26.5	Standard	Ear / 15° Tilt	Fixed	1.180
<b>ANSI / IEEE C95.1 1992 - SAFETY LIMIT</b>						<b>Brain</b>		
<b>Spatial Peak</b>						<b>1.6 W/kg (mW/g)</b>		
<b>Uncontrolled Exposure/General Population</b>						averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |                                     |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP       |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |                                     |
| <input checked="" type="checkbox"/> Left Head        | <input type="checkbox"/> Flat Phantom           | <input type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand       |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |                                     |
- SAR Measurement System
  - Phantom Configuration
  - SAR Configuration
  - Test Signal Call Mode
  - Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



Figure 14.4 Left Head SAR Test Setup  
-- Ear / 15° Tilt Position --

PCTEST™ SAR REPORT	FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 21 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.5 MEASUREMENT RESULTS (CELLULAR CDMA Right Head SAR – Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
848.31	0777	CDMA	26.0	26.0	Standard	Cheek / Touch	Fixed	1.010
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured                       Conducted                       ERP                       EIRP
- SAR Measurement System                       DASY3                       IDX
  - Phantom Configuration                       Left Head                       Flat Phantom                       Right Head
  - SAR Configuration                       Head                       Body                       Hand
  - Test Signal Call Mode                       Manu. Test Codes                       Base Station Simulator
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1
  - Justification for reduced test configurations: Per FCC P1528 Power Rule (Jan. 31, 2002), SAR measurements were taken on only one channel because the peak SAR value is less than 85% of the maximum SAR value in AMPS mode.

  
**Alfred Cirwithian**  
**Vice President Engineering**



Figure 14.5 Right Head SAR Test Setup  
-- Cheek / Touch Position --

PCTEST™ SAR REPORT	  			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 22 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.6 MEASUREMENT RESULTS (CELLULAR CDMA Right Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
848.31	0777	CDMA	26.0	26.0	Standard	Ear / 15° Tilt	Fixed	0.866
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured                       Conducted                       ERP                       EIRP
4. SAR Measurement System                       DASY3                       IDX
- Phantom Configuration                       Left Head                       Flat Phantom                       Right Head
5. SAR Configuration                       Head                       Body                       Hand
6. Test Signal Call Mode                       Manu. Test Codes                       Base Station Simulator
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1
  - Justification for reduced test configurations: Per FCC P1528 Power Rule (Jan. 31, 2002), SAR measurements were taken on only one channel because the peak SAR value is less than 85% of the maximum SAR value in AMPS mode.

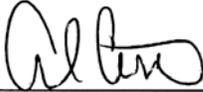
  
**Alfred Cirwithian**  
Vice President Engineering



Figure 14.6 Right Head SAR Test Setup  
-- Ear / 15° Tilt Position --

PCTEST™ SAR REPORT	  			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 23 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.7 MEASUREMENT RESULTS (CELLULAR CDMA Left Head SAR – Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Device Test Position	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
848.31	0777	CDMA	26.0	26.0	Standard	Cheek / Touch	Fixed	1.090
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured                       Conducted                       ERP                       EIRP  
 4. SAR Measurement System                       DASY3                       IDX  
 Phantom Configuration                       Left Head                       Flat Phantom                       Right Head  
 5. SAR Configuration                       Head                       Body                       Hand  
 6. Test Signal Call Mode                       Manu. Test Codes                       Base Station Simulator
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1
  - Justification for reduced test configurations: Per FCC P1528 Power Rule (Jan. 31, 2002), SAR measurements were taken on only one channel because the peak SAR value is less than 85% of the maximum SAR value in AMPS mode.

  
**Alfred Cirwithian**  
 Vice President Engineering



Figure 14.7 Left Head SAR Test Setup  
 -- Cheek / Touch Position --

PCTEST™ SAR REPORT	 FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 24 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Brain

14.8 MEASUREMENT RESULTS (CELLULAR CDMA Left Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
848.31	0777	CDMA	26.0	26.0	Standard	Ear / 15° Tilt	Fixed	1.070
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- †Power Measured
- |  |   |                                     |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP       |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |                                     |
| <input checked="" type="checkbox"/> Left Head        | <input type="checkbox"/> Flat Phantom           | <input type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand       |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |                                     |
- SAR Measurement System
  - Phantom Configuration
  - SAR Configuration
  - Test Signal Call Mode
  - Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1
  - Justification for reduced test configurations: Per FCC P1528 Power Rule (Jan. 31, 2002), SAR measurements were taken on only one channel because the peak SAR value is less than 85% of the maximum SAR value in AMPS mode.



**Alfred Cirwithian**  
Vice President Engineering



Figure 14.8 Left Head SAR Test Setup  
-- Ear / 15° Tilt Position --

PCTEST™ SAR REPORT			FCC CERTIFICATION		Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 25 of 35	

## SAR DATA SUMMARY (Continued)

Mixture Type: 1900MHz Brain

14.9 MEASUREMENT RESULTS (PCS CDMA Right Head SAR – Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>‡</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
1851.25	0025	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	0.915
1880.00	0600	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	1.200
1908.75	1175	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	1.060
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>‡</sup>Power Measured
- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP                  |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |  |
| <input type="checkbox"/> Left Head                   | <input type="checkbox"/> Flat Phantom           | <input checked="" type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand                  |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |  |
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1

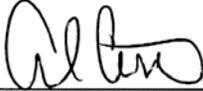
  
**Alfred Cirwithian**  
Vice President Engineering



Figure 14.9 Right Head SAR Test Setup -- Cheek / Touch Position --

PCTEST™ SAR REPORT	  		Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330 Page 26 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 1900MHz Brain

14.10 MEASUREMENT RESULTS (PCS CDMA Right Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
1851.25	0025	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	0.966
1880.00	0600	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	1.200
1908.75	1175	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	1.130
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP                  |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |  |
| <input type="checkbox"/> Left Head                   | <input type="checkbox"/> Flat Phantom           | <input checked="" type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand                  |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |  |
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



Figure 14.10 Right Head SAR Test Setup  
-- Ear / Tilt Position --

PCTEST™ SAR REPORT	FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 27 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 1900MHz Brain

14.11 MEASUREMENT RESULTS (PCS CDMA Left Head SAR – Touch)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
1851.25	0025	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	0.902
1880.00	0600	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	1.170
1908.75	1175	CDMA	24.5	24.5	Standard	Cheek / Touch	Fixed	1.160
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Brain 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |                                     |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP       |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |                                     |
| <input checked="" type="checkbox"/> Left Head        | <input type="checkbox"/> Flat Phantom           | <input type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand       |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |                                     |
- SAR Measurement System Phantom Configuration
  - SAR Configuration
  - Test Signal Call Mode
  - Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1

  
Alfred Cirwithian  
Vice President Engineering



Figure 14.11 Left Head SAR Test Setup -- Cheek / Touch Position --

PCTEST™ SAR REPORT	FCC CERTIFICATION			Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 28 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 1900MHz Brain

14.12 MEASUREMENT RESULTS (PCS CDMA Left Head SAR – Tilt)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Device Test Position	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
1851.25	0025	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	1.030
1880.00	0600	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	1.310
1908.75	1175	CDMA	24.5	24.5	Standard	Ear / 15° Tilt	Fixed	1.370
<b>ANSI / IEEE C95.1 1992 - SAFETY LIMIT</b>						<b>Brain</b>		
<b>Spatial Peak</b>						<b>1.6 W/kg (mW/g)</b>		
<b>Uncontrolled Exposure/General Population</b>						averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |  |   |                                     |
|--|---|-------------------------------------|
| <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                    | <input type="checkbox"/> EIRP       |
| <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                    |                                     |
| <input checked="" type="checkbox"/> Left Head        | <input type="checkbox"/> Flat Phantom           | <input type="checkbox"/> Right Head |
| <input checked="" type="checkbox"/> Head             | <input type="checkbox"/> Body                   | <input type="checkbox"/> Hand       |
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |                                     |
- Tissue parameters and temperatures are listed on the SAR plots.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



Figure 14.12 Left Head SAR Test Setup  
-- Ear / Tilt Position --

PCTEST™ SAR REPORT	 <b>FCC CERTIFICATION</b> 		Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330 Page 29 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Muscle

14.13 MEASUREMENT RESULTS (AMPS Body SAR w/o Holster)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Separation Distance (cm) <sup>**</sup>	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
824.04	0991	AMPS	26.5	26.5	Standard	1.5 [w/o Holster]	Fixed	0.951
836.49	0383	AMPS	26.5	26.5	Standard	1.5 [w/o Holster]	Fixed	0.969
848.97	0799	AMPS	26.5	26.5	Standard	1.5 [w/o Holster]	Fixed	0.989
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Muscle 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in atypical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |   |                              |                               |
|---|------------------------------|-------------------------------|
| <input checked="" type="checkbox"/> Conducted | <input type="checkbox"/> ERP | <input type="checkbox"/> EIRP |
|---|------------------------------|-------------------------------|
4. SAR Measurement System
- |   |                              |
|---|------------------------------|
| <input checked="" type="checkbox"/> DASY3 | <input type="checkbox"/> IDX |
|---|------------------------------|
- Phantom Configuration
- |                                    |  |                                     |
|------------------------------------|--|-------------------------------------|
| <input type="checkbox"/> Left Head | <input checked="" type="checkbox"/> Flat Phantom | <input type="checkbox"/> Right Head |
|------------------------------------|--|-------------------------------------|
5. SAR Configuration
- |                               |  |                               |
|-------------------------------|--|-------------------------------|
| <input type="checkbox"/> Head | <input checked="" type="checkbox"/> Body | <input type="checkbox"/> Hand |
|-------------------------------|--|-------------------------------|
6. Test Signal Call Mode
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |
|--|---|
7. <sup>\*\*</sup>Test Configuration
- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> With Holster | <input checked="" type="checkbox"/> Without Holster |
|---------------------------------------|---|
- Tissue parameters and temperatures are listed on the SAR plots.
  - Both sides of the phone were tested and the worst-case side is reported.
  - Liquid tissue depth is 15.1 cm. ± 0.1



**Alfred Cirwithian**  
Vice President Engineering



**Figure 14.13 Body SAR Test Setup**  
-- w/o Holster --

PCTEST™ SAR REPORT	 <b>FCC CERTIFICATION</b> 		Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330 Page 30 of 35

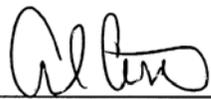
# SAR DATA SUMMARY (Continued)

Mixture Type: 835MHz Muscle

<b>14.14 MEASUREMENT RESULTS (CELLULAR CDMA Body SAR w/o Holster)</b>								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>			Separation Distance (cm) <sup>**</sup>	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
848.31	0777	CDMA	26.0	26.0	Standard	1.5 [w/o Holster]	Fixed	<b>0.788</b>
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Muscle <b>1.6 W/kg (mW/g)</b> averaged over 1 gram		

**NOTES:**

1. The test data reported are the worst-case SAR value with the antenna-head position set in atypical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  2. All modes of operation were investigated, and worst-case results are reported.
  3. Battery is fully charged for all readings.
- |                                     |  |   |                                     |
|-------------------------------------|--|---|-------------------------------------|
| <sup>†</sup> Power Measured         | <input checked="" type="checkbox"/> Conducted        | <input type="checkbox"/> ERP                        | <input type="checkbox"/> EIRP       |
| 4. SAR Measurement System           | <input checked="" type="checkbox"/> DASY3            | <input type="checkbox"/> IDX                        |                                     |
| Phantom Configuration               | <input type="checkbox"/> Left Head                   | <input checked="" type="checkbox"/> Flat Phantom    | <input type="checkbox"/> Right Head |
| 5. SAR Configuration                | <input type="checkbox"/> Head                        | <input checked="" type="checkbox"/> Body            | <input type="checkbox"/> Hand       |
| 6. Test Signal Call Mode            | <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator     |                                     |
| 7. <sup>**</sup> Test Configuration | <input type="checkbox"/> With Holster                | <input checked="" type="checkbox"/> Without Holster |                                     |
8. Tissue parameters and temperatures are listed on the SAR plots.
  9. Both sides of the phone were tested and the worst-case side is reported.
  10. Liquid tissue depth is 15.1 cm. ± 0.1
  11. Justification for reduced test configurations: Per FCC P1528 Power Rule (Jan. 31, 2002), SAR measurements were taken on only one channel because the peak SAR value is less than 85% of the maximum SAR value in AMPS mode.


---

**Alfred Cirwithian**  
**Vice President Engineering**



**Figure 14.14 Body SAR Test Setup  
-- w/o Holster --**

<b>PCTEST™ SAR REPORT</b>	<b>FCC CERTIFICATION</b>			<b>Reviewed by:</b> Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 31 of 35

## SAR DATA SUMMARY (Continued)

Mixture Type: 1900MHz Muscle

14.15 MEASUREMENT RESULTS (PCS CDMA Body SAR w/o Holster)								
FREQUENCY		Modulation	Begin / End POWER <sup>†</sup>		Separation Distance (cm) <sup>**</sup>	Antenna Position	SAR (W/kg)	
MHz	Ch.		(dBm)	Battery				
1851.25	0025	CDMA	24.5	24.5	Standard	1.5 [w/o Holster]	Fixed	0.709
1880.00	0600	CDMA	24.5	24.5	Standard	1.5 [w/o Holster]	Fixed	0.714
1908.75	1175	CDMA	24.5	24.5	Standard	1.5 [w/o Holster]	Fixed	0.707
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Muscle 1.6 W/kg (mW/g) averaged over 1 gram		

**NOTES:**

- The test data reported are the worst-case SAR value with the antenna-head position set in atypical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
  - All modes of operation were investigated, and worst-case results are reported.
  - Battery is fully charged for all readings.
- <sup>†</sup>Power Measured
- |   |                              |                               |
|---|------------------------------|-------------------------------|
| <input checked="" type="checkbox"/> Conducted | <input type="checkbox"/> ERP | <input type="checkbox"/> EIRP |
|---|------------------------------|-------------------------------|
4. SAR Measurement System
- |   |                              |
|---|------------------------------|
| <input checked="" type="checkbox"/> DASY3 | <input type="checkbox"/> IDX |
|---|------------------------------|
- Phantom Configuration
- |                                    |  |                                     |
|------------------------------------|--|-------------------------------------|
| <input type="checkbox"/> Left Head | <input checked="" type="checkbox"/> Flat Phantom | <input type="checkbox"/> Right Head |
|------------------------------------|--|-------------------------------------|
5. SAR Configuration
- |                               |  |                               |
|-------------------------------|--|-------------------------------|
| <input type="checkbox"/> Head | <input checked="" type="checkbox"/> Body | <input type="checkbox"/> Hand |
|-------------------------------|--|-------------------------------|
6. Test Signal Call Mode
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Manu. Test Codes | <input type="checkbox"/> Base Station Simulator |
|--|---|
7. <sup>\*\*</sup>Test Configuration
- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> With Holster | <input checked="" type="checkbox"/> Without Holster |
|---------------------------------------|---|
- Tissue parameters and temperatures are listed on the SAR plots.
  - Both sides of the phone were tested and the worst-case side is reported.
  - Liquid tissue depth is 15.1 cm. ± 0.1

  
**Alfred Cirwithian**  
Vice President Engineering



Figure 14.15 Body SAR Test Setup  
-- w/o Holster --

PCTEST™ SAR REPORT	 		FCC CERTIFICATION	Reviewed by: Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330	Page 32 of 35

## 15. SAR TEST EQUIPMENT

### Equipment Calibration

Table 15.1 Test Equipment Calibration

EQUIPMENT SPECIFICATIONS		
Type	Calibration Date	Serial Number
Stäubli Robot RX60L	February 2002	599131-01
Stäubli Robot Controller	February 2002	PCT592
Stäubli Teach Pendant (Joystick)	February 2002	3323-00161
Micron Computer, 450 MHz Pentium III, Windows NT	February 2002	PCT577
SPEAG EDC3	February 2002	321
SPEAG DAE3	February 2002	330
SPEAG E-Field Probe ET3DV6	February 2002	1560
SPEAG Dummy Probe	February 2002	PCT583
SPEAG SAM Twin Phantom V4.0	February 2002	PCT666
SPEAG Light Alignment Sensor	February 2002	205
SPEAG Validation Dipole D1900V2	February 2002	PCT613
Brain Equivalent Matter (835MHz)	March 2002	PCTBEM101
Brain Equivalent Matter (1900MHz)	March 2002	PCTBEM301
Muscle Equivalent Matter (835MHz)	March 2002	PCTMEM201
Muscle Equivalent Matter (1900MHz)	March 2002	PCTMEM401
Microwave Amp. Model: 5S1G4, (800MHz - 4.2GHz)	January 2002	22332
Gigatronics 8651A Power Meter	January 2002	1835299
HP-8648D (9kHz ~ 4GHz) Signal Generator	January 2002	PCT530
Amplifier Research 5S1G4 Power Amp	January 2002	PCT540
HP-8753E (30kHz ~ 3GHz) Network Analyzer	January 2002	PCT552
HP85070B Dielectric Probe Kit	January 2002	PCT501
Ambient Noise/Reflection, etc.	<12mW/kg/<3%of SAR	January 2002
		Anechoic Room PCT01

**NOTE:**

The E-field probe was calibrated by SPEAG, by temperature measurement procedure. Dipole Validation measurement is performed by PCTEST Lab. before each test. The brain simulating material is calibrated by PCTEST using the dielectric probe system and network analyzer to determine the conductivity and permittivity (dielectric constant) of the brain-equivalent material.

<b>PCTEST™ SAR REPORT</b>	 <b>FCC CERTIFICATION</b> 		<b>Reviewed by:</b> Quality Manager
SAR Filename: SAR-220325126.A3L	Test Dates: March 25-28, 2002	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHI330
			Page 33 of 35

# SAMSUNG FCC ID: A3LSPHI330 -- FM Head SAR

SAM Phantom; Right Hand Section; Probe:ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

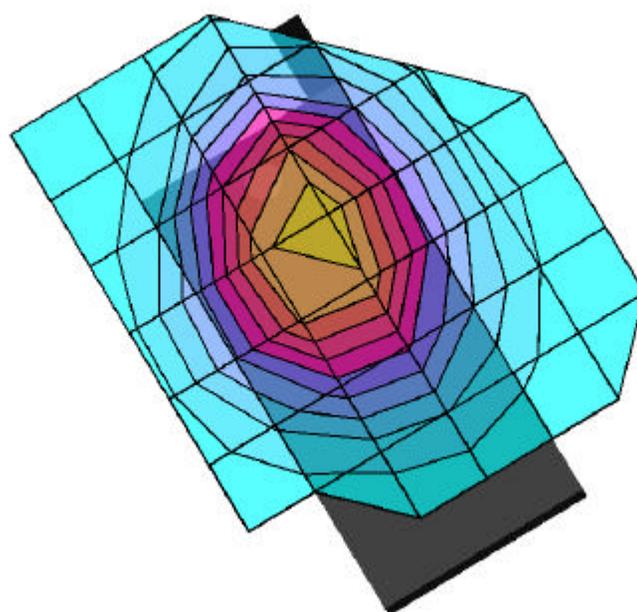
**SAR (1g): 1.16 mW/g, SAR (10g): 0.841 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

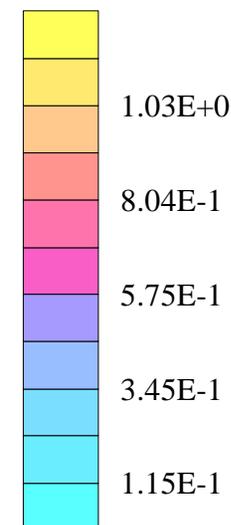
FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 26.5dBm; Right Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



SAR<sub>Tot</sub> [mW/g]



# SAMSUNG FCC ID: A3LSPHI330 -- FM Head SAR

SAM Phantom; Right Hand Section; Probe:ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

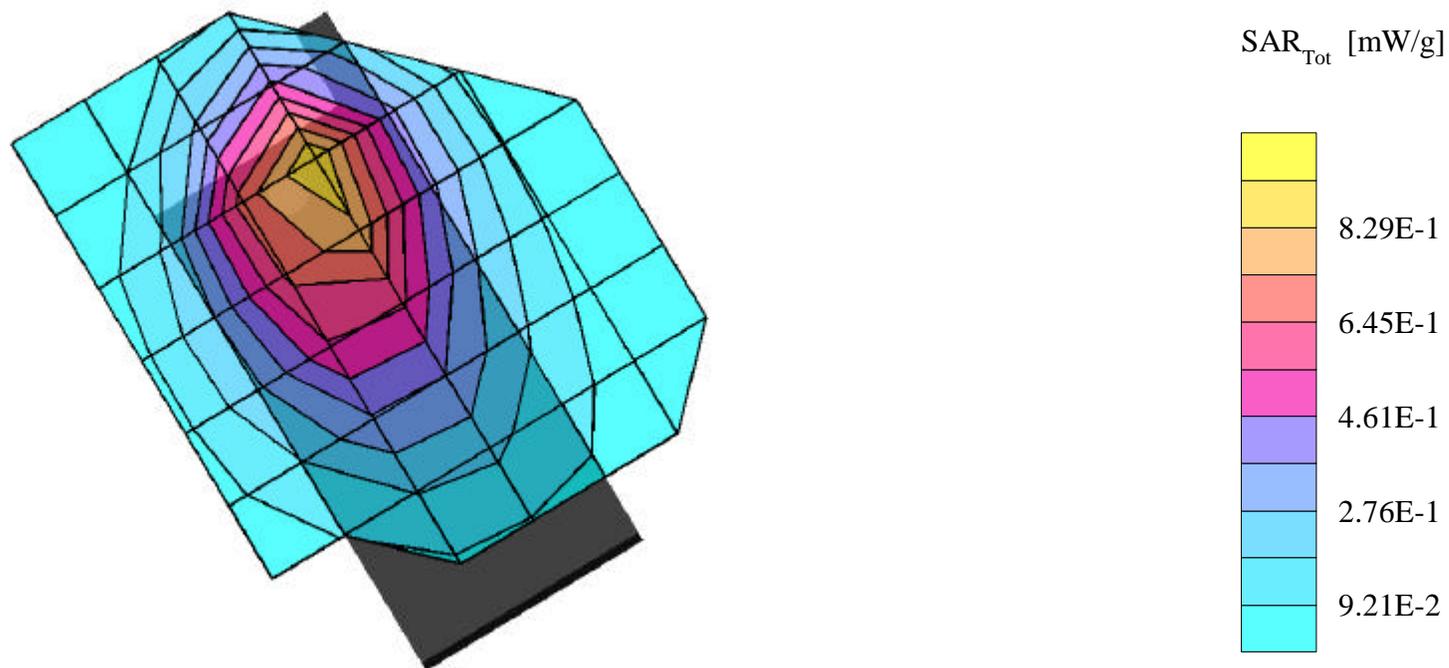
**SAR (1g): 0.928 mW/g**, SAR (10g): 0.631 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0383 [836.49MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 26.5dBm; Right Head SAR, Ear/15 degree Tilt position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- FM Head SAR

SAM Phantom; Left Hand Section; Probe:ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

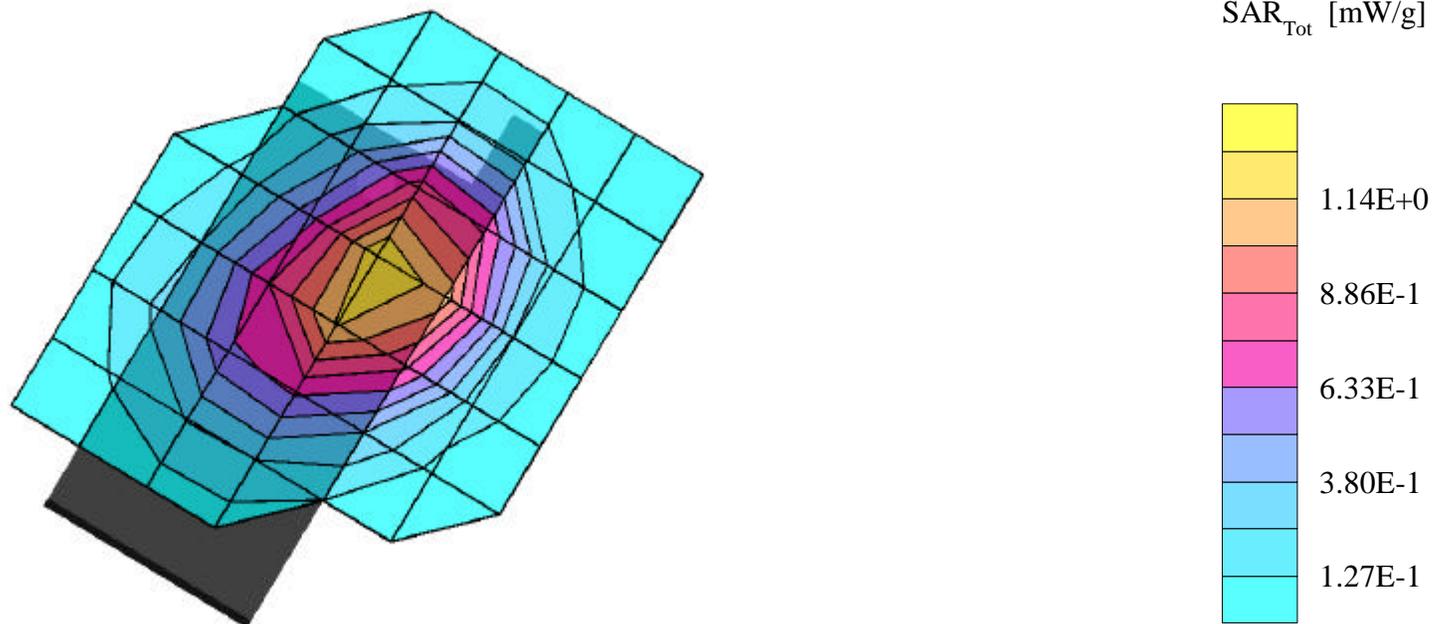
**SAR (1g): 1.40 mW/g**, SAR (10g): 0.911 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 26.5dBm; Left Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- FM Head SAR

SAM Phantom; Left Hand Section; Probe:ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

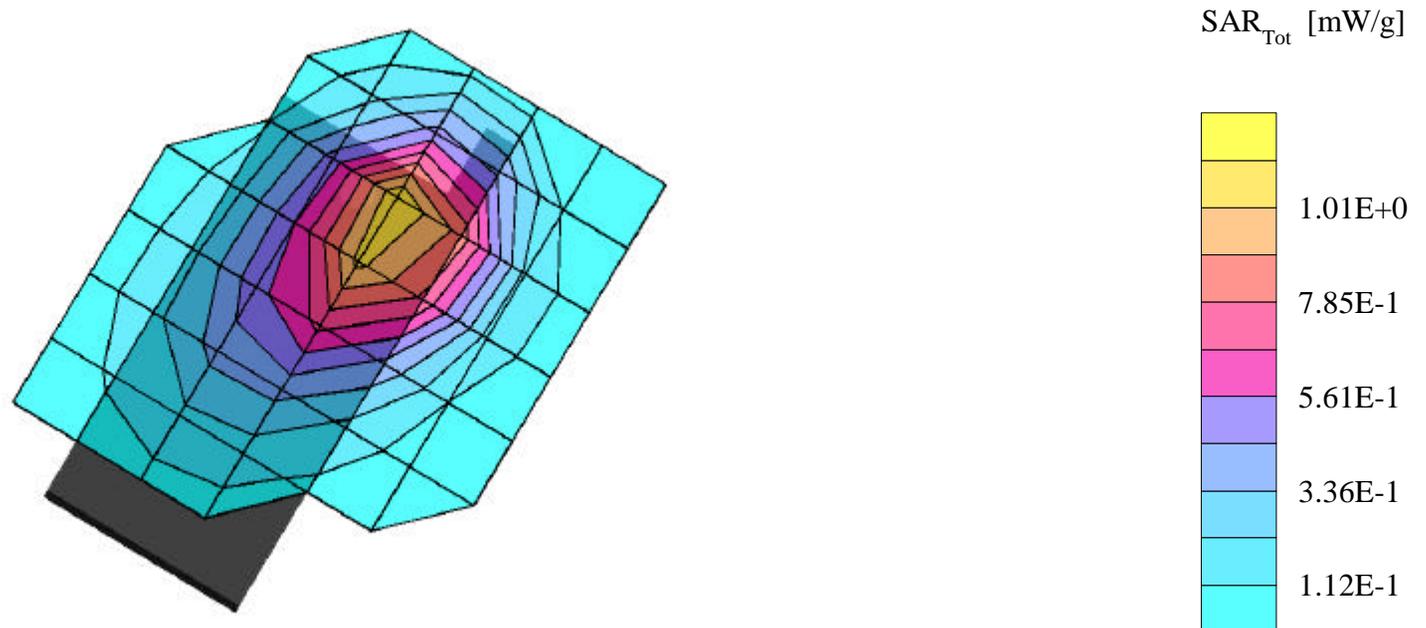
**SAR (1g): 1.18 mW/g**, SAR (10g): 0.781 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 26.5dBm; Left Head SAR, Ear/15 degree Tilt position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- Cellular CDMA Head SAR

SAM Phantom; Left Hand Section; Probe:ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

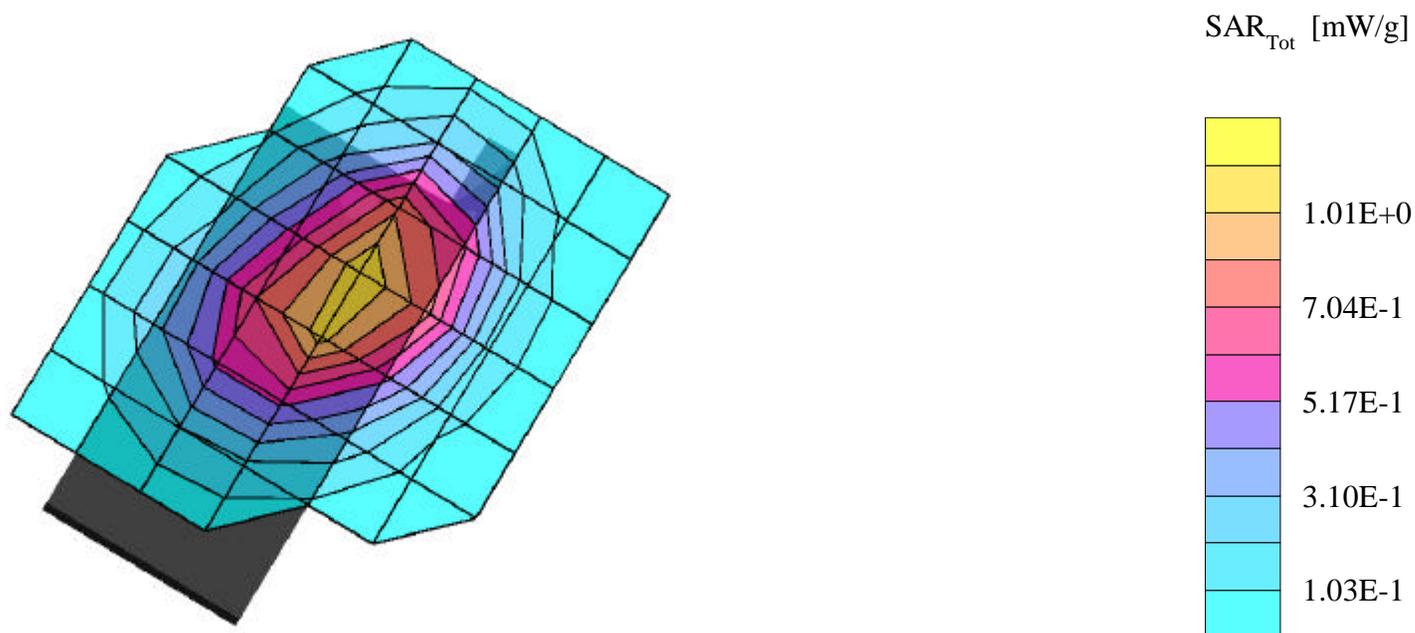
**SAR (1g): 1.09 mW/g, SAR (10g): 0.743 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

Cellular CDMA Mode, Ch.0777 [848.31MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.3°C

Conducted Power = 26.0dBm; Left Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Head SAR

SAM Phantom; Right Hand Section; Probe:ET3DV6 - SN1560; ConvF(5.16,5.16,5.16)

Med. Parameters 1900 MHz Brain:  $\sigma = 1.44$  mho/m  $\epsilon_r = 40.3$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

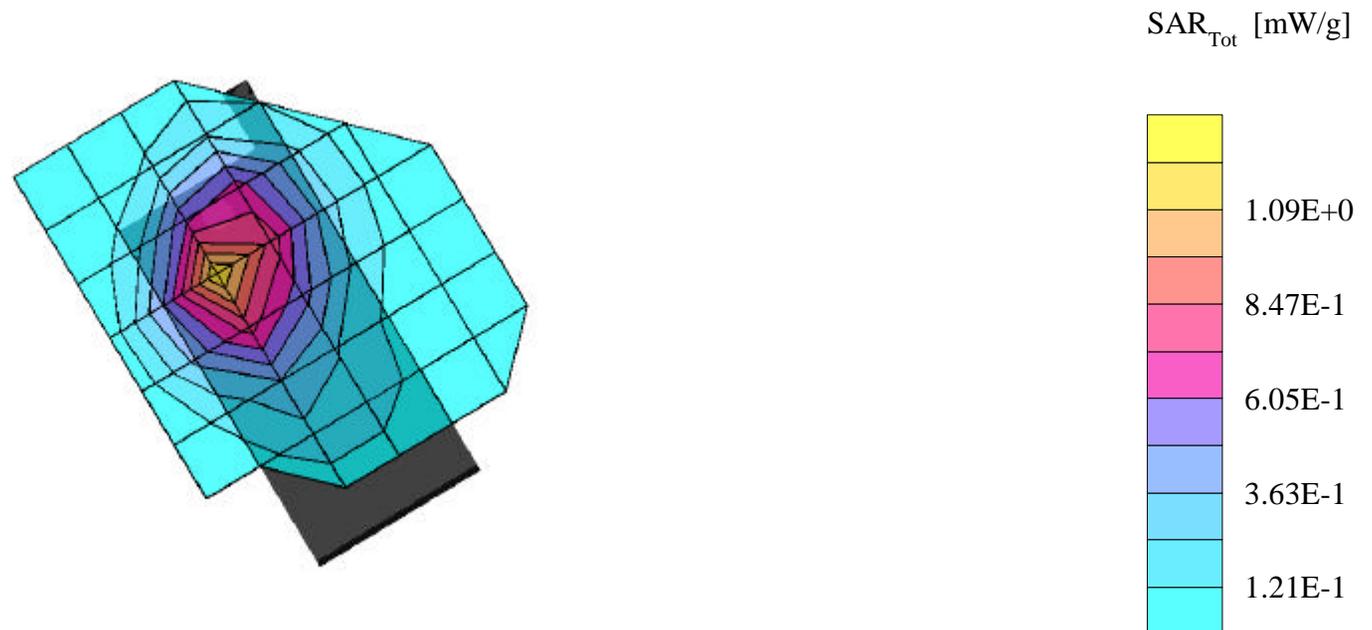
**SAR (1g): 1.20 mW/g, SAR (10g): 0.755 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

PCS CDMA Mode, Ch.0600 [1880.00MHz]; Standard Battery; Ambient Temp. = 22.2°C / Meas. Tissue Temp. = 22.0°C

Conducted Power = 24.5dBm; Right Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Head SAR

SAM Phantom; Right Hand Section; Probe:ET3DV6 - SN1560; ConvF(5.16,5.16,5.16)

Med. Parameters 1900 MHz Brain:  $\sigma = 1.44$  mho/m  $\epsilon_r = 40.3$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

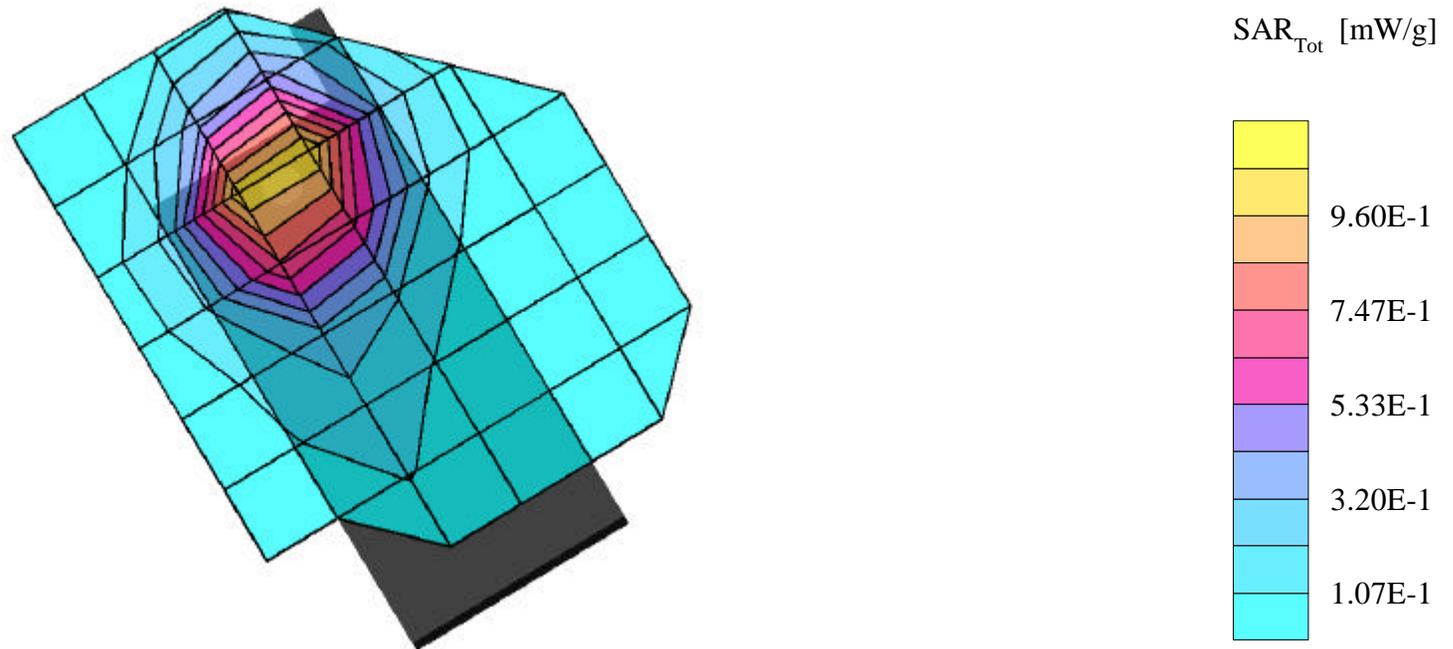
**SAR (1g): 1.20 mW/g, SAR (10g): 0.741 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

PCS CDMA Mode, Ch.0600 [1880.00MHz]; Standard Battery; Ambient Temp. = 22.2°C / Meas. Tissue Temp. = 22.0°C

Conducted Power = 24.5dBm; Right Head SAR, Ear/15 degree Tilt position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Head SAR

SAM Phantom; Left Hand Section; Probe:ET3DV6 - SN1560; ConvF(5.16,5.16,5.16)

Med. Parameters 1900 MHz Brain:  $\sigma = 1.44$  mho/m  $\epsilon_r = 40.3$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

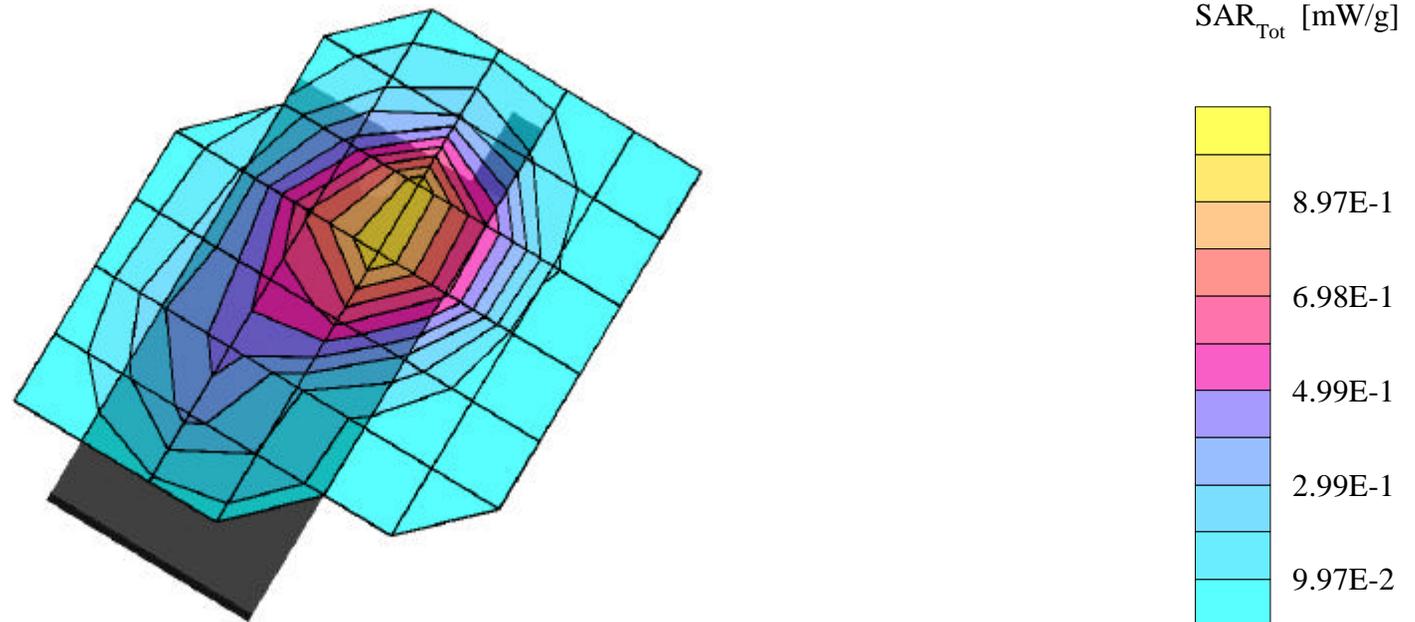
**SAR (1g): 1.17 mW/g, SAR (10g): 0.690 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

PCS CDMA Mode, Ch.0600 [1880.00MHz]; Standard Battery; Ambient Temp. = 22.2°C / Meas. Tissue Temp. = 22.0°C

Conducted Power = 24.5dBm; Left Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Head SAR

SAM Phantom; Left Hand Section; Probe:ET3DV6 - SN1560; ConvF(5.16,5.16,5.16)

Med. Parameters 1900 MHz Brain:  $\sigma = 1.44$  mho/m  $\epsilon_r = 40.3$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

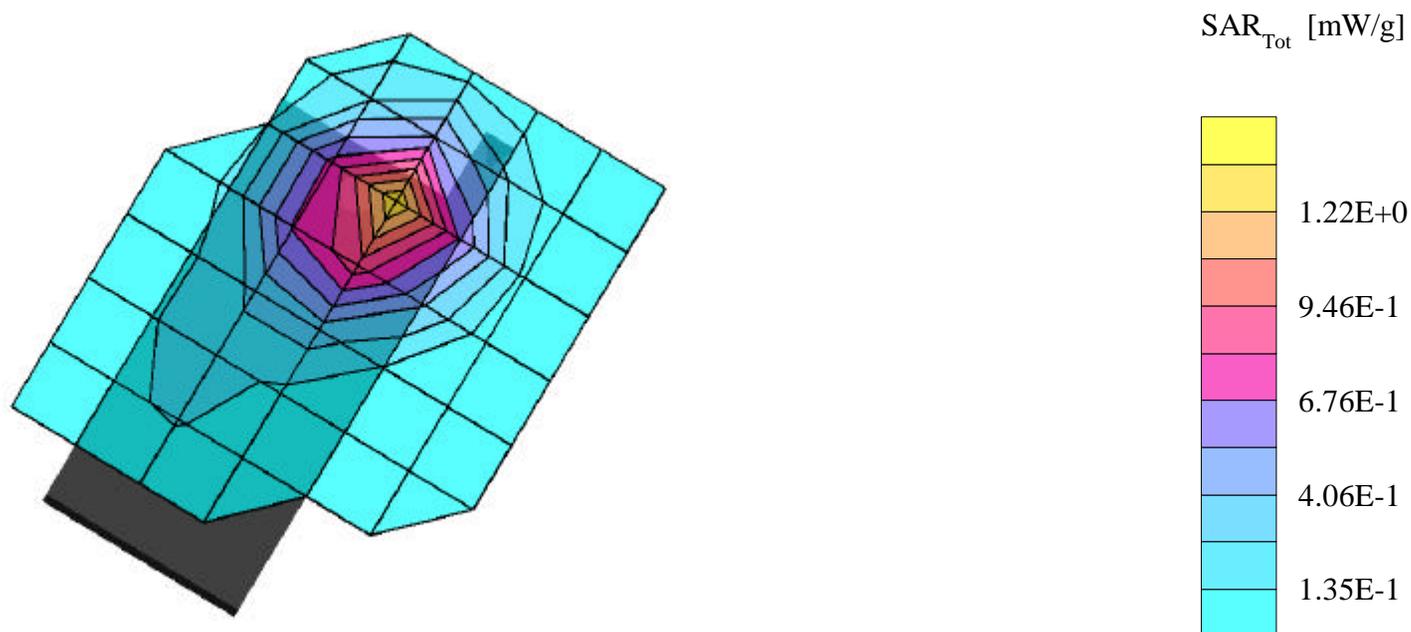
**SAR (1g): 1.37 mW/g, SAR (10g): 0.803 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

PCS CDMA Mode, Ch.1175 [1908.75MHz]; Standard Battery; Ambient Temp. = 22.2°C / Meas. Tissue Temp. = 22.0°C

Conducted Power = 24.5dBm; Left Head SAR, Ear/15 degree Tilt position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- FM Body SAR

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1560; ConvF(6.52,6.52,6.52)

Med. Parameters 835 MHz Muscle:  $\sigma = 0.99$  mho/m  $\epsilon_r = 55.5$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

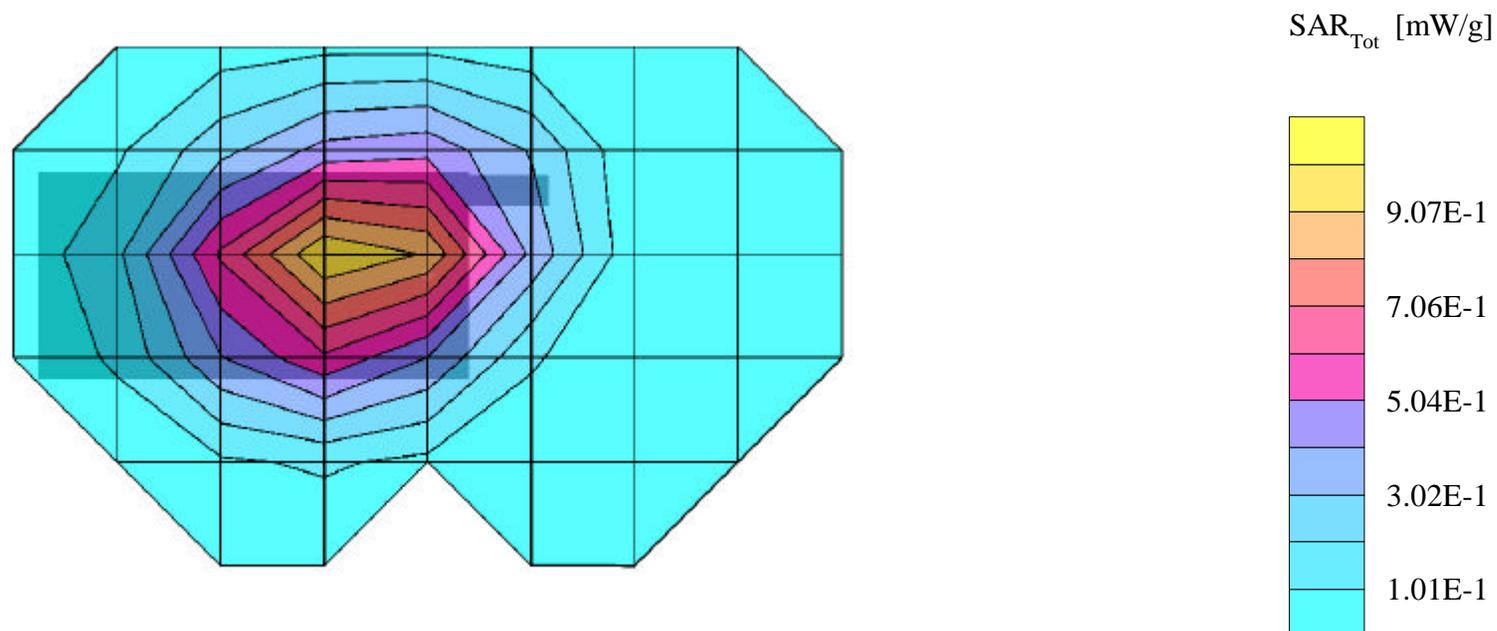
**SAR (1g): 0.989 mW/g, SAR (10g): 0.734 mW/g**

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.3°C

Conducted Power = 26.5dBm; Spacing = 1.5cm from EUT (antenna side) to flat phantom, No BeltClip/No Holster

Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- Cellular CDMA Body SAR

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1560; ConvF(6.52,6.52,6.52)

Med. Parameters 835 MHz Muscle:  $\sigma = 0.99$  mho/m  $\epsilon_r = 55.5$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

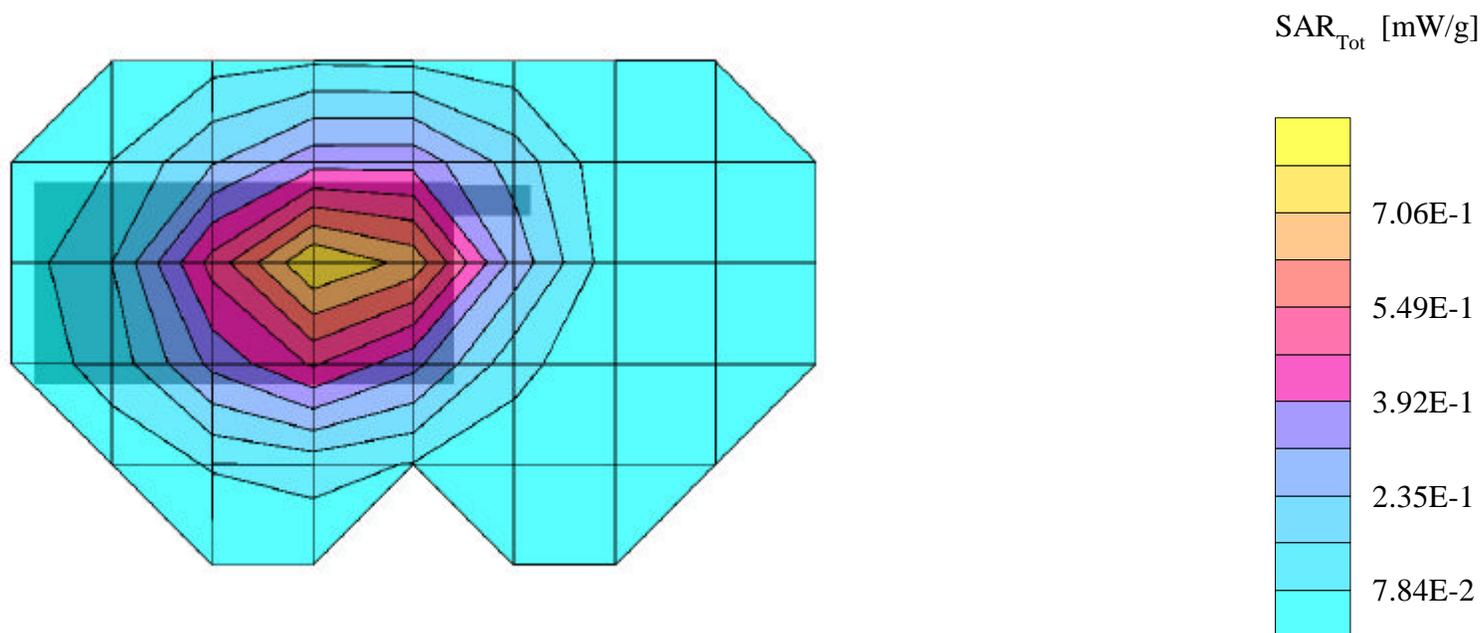
**SAR (1g): 0.788 mW/g**, SAR (10g): 0.585 mW/g

SAMSUNG TriMode Phone Model: SPH-i330

Cellular CDMA Mode, Ch.0777 [848.31MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.3°C

Conducted Power = 26.0dBm; Spacing = 1.5cm from EUT (antenna side) to flat phantom, No BeltClip/No Holster

Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Body SAR

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1560; ConvF(4.70,4.70,4.70)

Med. Parameters 1900 MHz Muscle:  $\sigma = 1.56$  mho/m  $\epsilon_r = 54.0$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

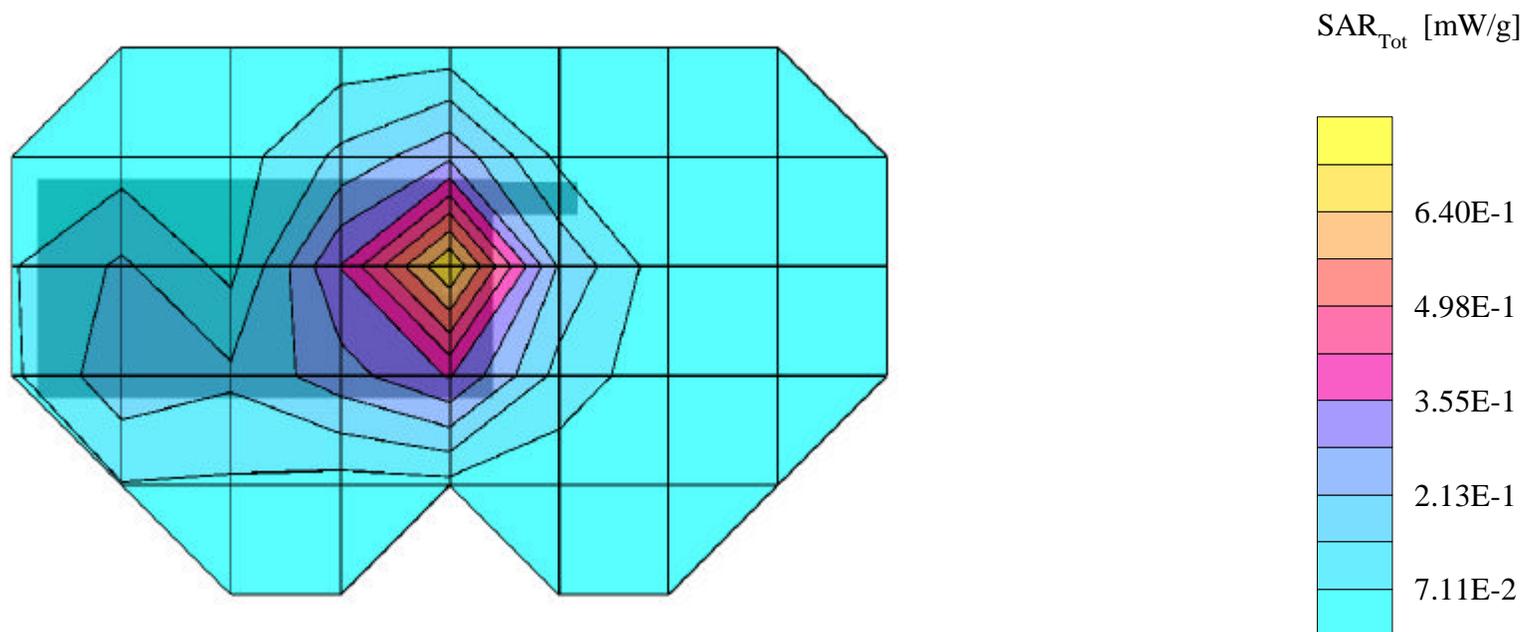
**SAR (1g): 0.714 mW/g, SAR (10g): 0.405 mW/g**

SAMSUNG TriMode Phone Model: SPH-i330

PCS CDMA Mode, Ch.0600 [1880.00MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 24.5dBm; Spacing = 1.5cm from EUT (antenna side) to flat phantom, No BeltClip/No Holster

Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- FM Head SAR

SAM Phantom; Left Hand Section; Probe: ET3DV6 - SN1560; ConvF(6.78,6.78,6.78)

Med. Parameters 835 MHz Brain:  $\sigma = 0.87$  mho/m  $\epsilon_r = 43.4$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

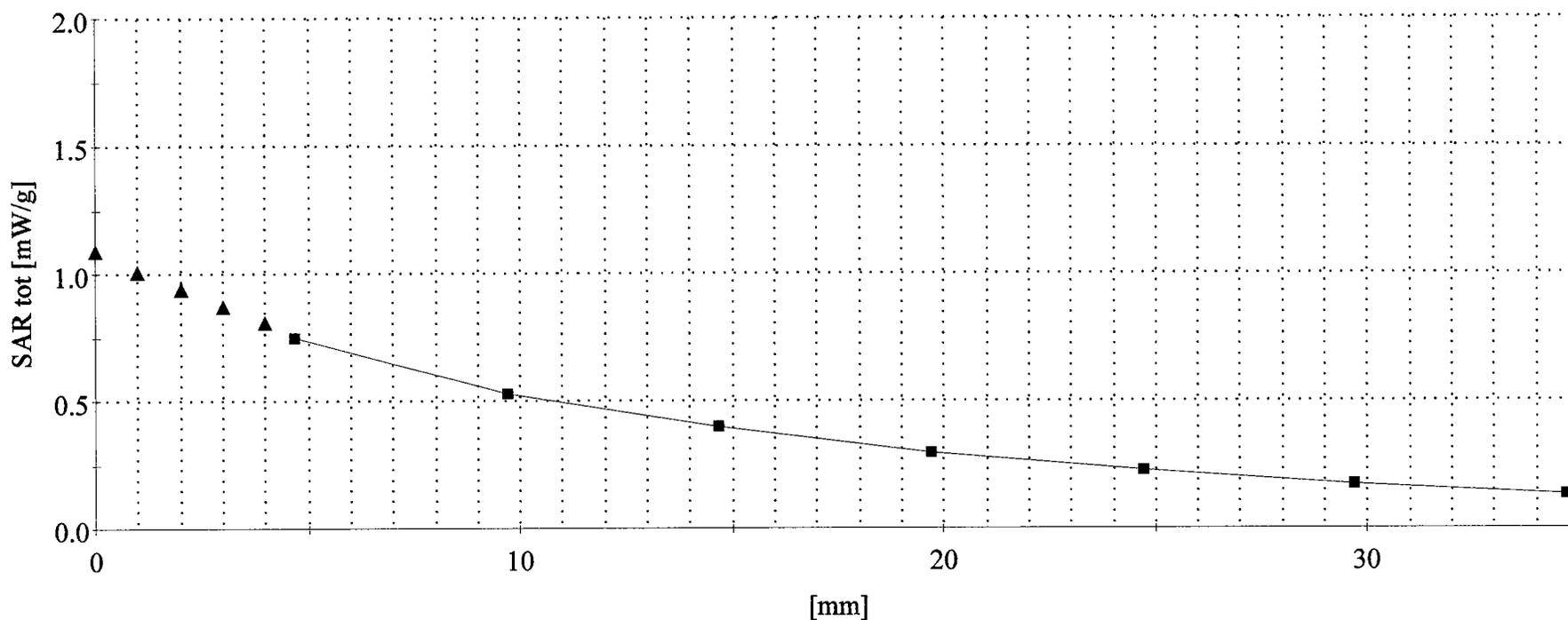
SAR (1g): 1.40 mW/g, SAR (10g): 0.911 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C

Conducted Power = 26.5dBm; Left Head SAR, Cheek/Touch position

Test Date -- 03/26/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Head SAR

SAM Phantom; Left Hand Section; Probe: ET3DV6 - SN1560; ConvF(5.16,5.16,5.16)

Med. Parameters 1900 MHz Brain:  $\sigma = 1.44$  mho/m  $\epsilon_r = 40.3$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0

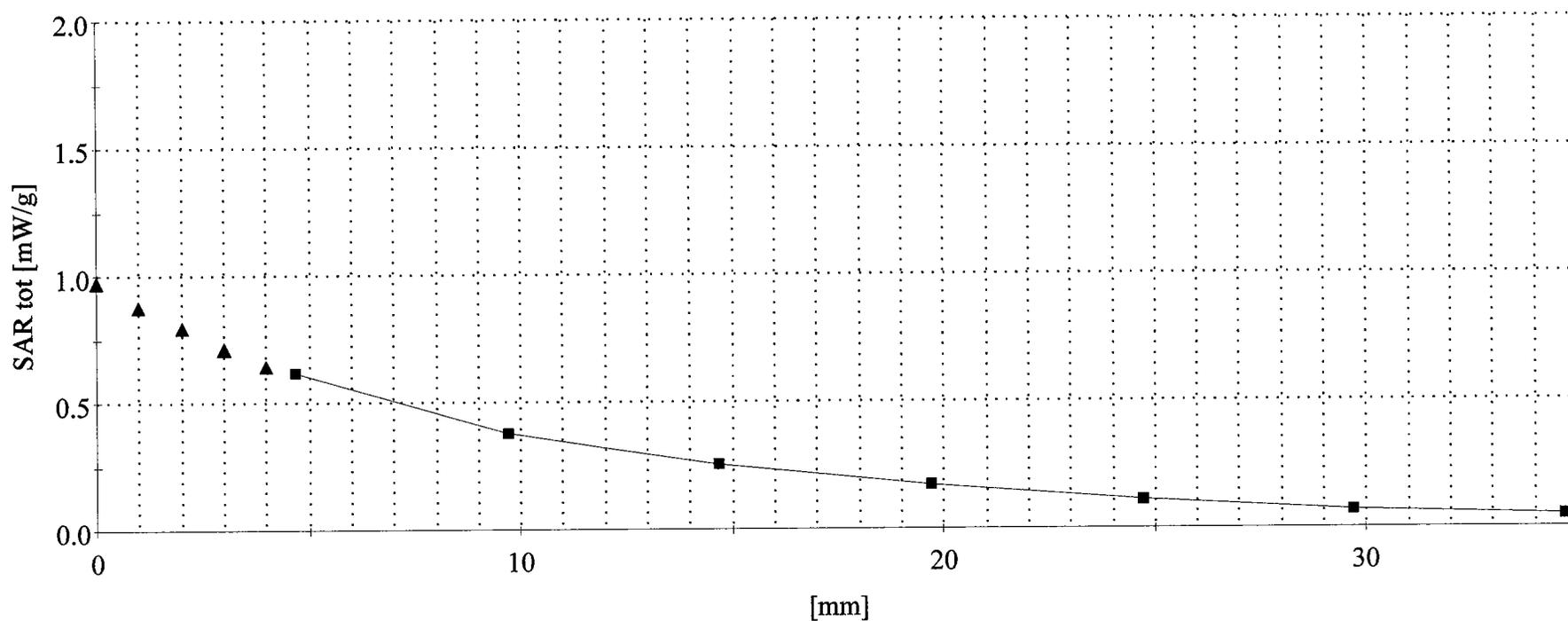
SAR (1g): 1.37 mW/g, SAR (10g): 0.803 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

PCS CDMA Mode, Ch.1175 [1908.75MHz]; Standard Battery; Ambient Temp. = 22.2°C / Meas. Tissue Temp. = 22.0°C

Conducted Power = 24.5dBm; Left Head SAR, Ear/15 degree Tilt position

Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



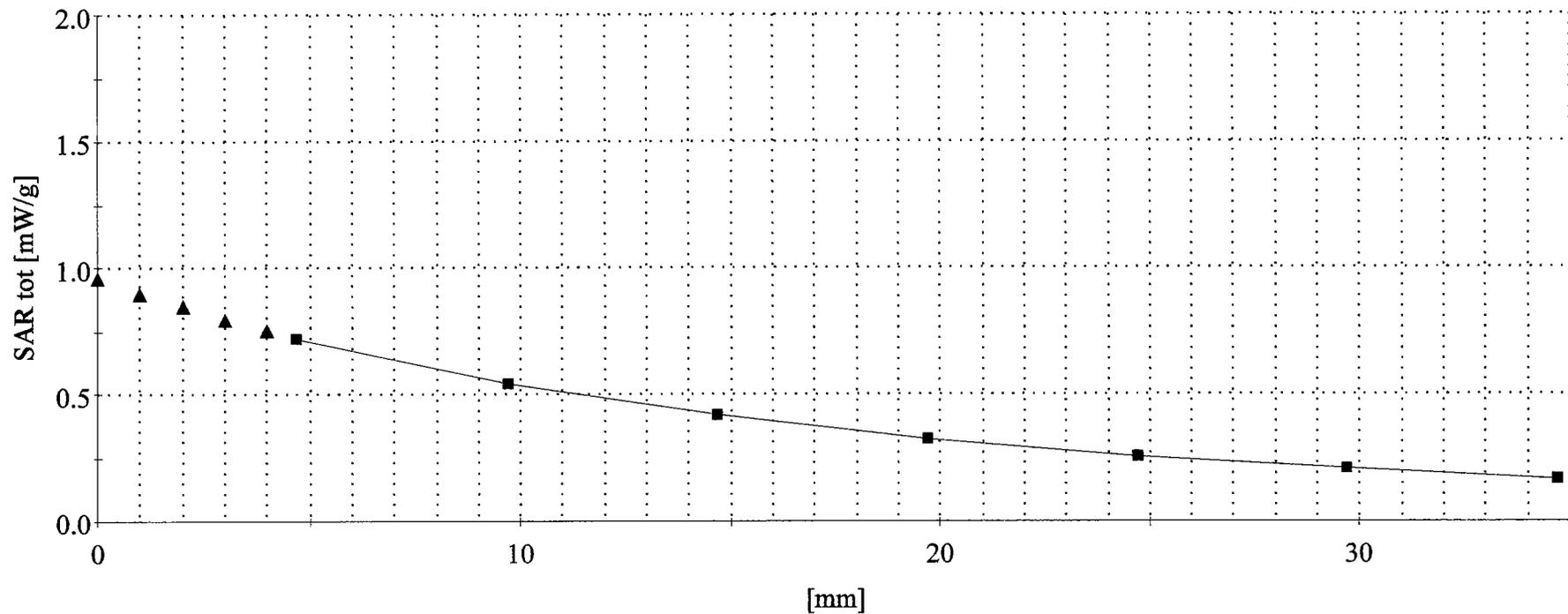
# SAMSUNG FCC ID: A3LSPHI330 -- FM Body SAR

SAM Phantom; Flat Section; Probe: ET3DV6 - SN1560; ConvF(6.52,6.52,6.52)

Med. Parameters 835 MHz Muscle:  $\sigma = 0.99$  mho/m  $\epsilon_r = 55.5$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0  
SAR (1g): 0.989 mW/g, SAR (10g): 0.734 mW/g

SAMSUNG TriMode Phone Model: SPH-I330

FM Mode, Ch.0799 [848.97MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.3°C  
Conducted Power = 26.5dBm; Spacing = 1.5cm from EUT (antenna side) to flat phantom, No BeltClip/No Holster  
Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]



# SAMSUNG FCC ID: A3LSPHI330 -- PCS CDMA Body SAR

SAM Phantom; Flat Section; Probe: ET3DV6 - SN1560; ConvF(4.70,4.70,4.70)

Med. Parameters 1900 MHz Muscle:  $\sigma = 1.56$  mho/m  $\epsilon_r = 54.0$   $\rho = 1.00$  g/cm<sup>3</sup>; Antenna Position -- In; Crest Factor 1.0  
SAR (1g): 0.714 mW/g, SAR (10g): 0.405 mW/g

SAMSUNG TriMode Phone Model: SPH-i330

PCS CDMA Mode, Ch.0600 [1880.00MHz]; Standard Battery; Ambient Temp. = 22.4°C / Meas. Tissue Temp. = 22.2°C  
Conducted Power = 24.5dBm; Spacing = 1.5cm from EUT (antenna side) to flat phantom, No BeltClip/No Holster  
Test Date -- 03/27/2002 [FCC/OET Bulletin 65 - Supplement C, July 2001]

