October 29, 2004
Supplement to SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56ED1)

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Summary of FCC request for additional information

There was a request for additional information regarding Motorola's SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56ED1). The requested information is addressed below in the same numbering sequence received.

1. Please provide SAR test setup photographs.

Response: The pictures are attached below in the supplement to Appendix 7.

3. Pages 8 and 9 of the SAR report have SAR data for PCS head that exceeds the original grant. Please submit SAR plots for this data.

Response: Additional testing was required. Updated versions of tables that required changes based on the new data are attached here. All other tables were unaffected and the versions in the original report are valid. The scans to support additional testing are attached in the supplement to Appendix 1 and supplement to Appendix 2.

4 Electrical parameters of the tissue simulating liquid

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ε_r	σ (S/m)	Temp (°C)
835	Head	**Measured,** 04-Oct-04	42.4	0.91	19.5
		Measured, 06-Oct-04	41.7	0.90	19.5
		Recommended Limits	41.5 ±5%	0.90 ±5%	18-25
	Body	**Measured,** 07-Oct-04	53.7	0.98	20.0
		Measured, 08-Oct-04	53.8	0.98	19.2
		Measured, 15-Oct-04	53.5	0.97	19.8
		Recommended Limits	55.2 ±5%	0.97 ±5%	18-25
1880	Head	**Measured,** 05-Oct-04	38.3	1.47	19.1
		Measured, 06-Oct-04	38.4	1.46	19.5
		Measured,27-Oct-04	38.3	1.46	19.1
		Recommended Limits	40.0 ±5%	1.40 ±5%	18-25
	Body	**Measured,** 07-Oct-04	51.2	1.57	19.2
		Measured, 08-Oct-04	51.5	1.59	19.3
		Recommended Limits	53.3 ±5%	1.52 ±5%	18-25

5 System Accuracy Verification

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Ambient Temp (°C)	Tissue Temp (°C)
			ε_r	σ (S/m)		
900	**Measured,** 04-Oct-04	11.65	41.6	0.97	20.0	20.0
	Measured, 06-Oct-04	11.50	40.9	0.96	20.0	20.0
	Measured, 07-Oct-04	11.45	41.1	0.97	20.0	20.0
	Measured, 08-Oct-04	11.55	40.6	0.96	20.0	19.7
	Measured, 15-Oct-04	11.50	42.2	0.98	20.0	19.9
	Recommended Limits	***11.4***	***41.5 ±5%***	***0.97 ±5%***	***18-25***	***18-25***
1800	**Measured,** 05-Oct-04	41.00	38.7	1.39	20.0	19.1
	Measured, 06-Oct-04	40.65	38.8	1.37	20.0	20.0
	Measured, 07-Oct-04	40.65	38.5	1.38	20.0	20.0
	Measured, 08-Oct-04	39.85	38.8	1.37	20.0	19.6
	Measured,27-Oct-04	41.4	38.7	1.37	20.0	19.1
	Recommended Limits	***40.7***	***40.0 ±5%***	***1.4 ±5%***	***18-25***	***18-25***

6.1.1 Head Adjacent Configuration with Phone Flip Closed

f (MHz)	Description	Conducted Output Power (dBm)	Cheek / Touch Position – Flip Closed							
			Left Head				Right Head			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	33.46								
	Channel 190	33.48	**0.60**	**-0.25**	**0.64**	**19.5**	**0.558**	**-0.28**	**0.60**	**20.0**
	Channel 251	33.46								
Digital 1900MHz	Channel 512	30.49								
	Channel 661	30.50	0.26	-0.13	0.27	19.1	**0.299**	**-0.1**	**0.31**	**18.6**
	Channel 810	30.50								

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56ED1 at highest possible output power. Measured against the head in the Cheek/Touch Position.

f (MHz)	Description	Conducted Output Power (dBm)	15° Tilt Position – Flip Closed							
			Left Head				Right Head			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	33.46								
	Channel 190	33.48	**0.38**	**-0.23**	**0.40**	**19.5**	**0.377**	**-0.37**	**0.41**	**20.0**
	Channel 251	33.46								
Digital 1900MHz	Channel 512	30.49								
	Channel 661	30.50	0.205	-0.21	0.22	19.1	0.264	-0.03	0.27	18.6
	Channel 810	30.50								

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56ED1 at highest possible output power. Measured against the head in the 15° Tilt Position.

6.1.2 Head Adjacent Configuration with Phone Flip Open

f (MHz	Description	Conducted Output Power (dBm)	Cheek / Touch Position – Flip Open							
			Left Head				Right Head			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	33.46								
	Channel 190	33.48	**0.35**	**-0.25**	**0.37**	**19.6**	**0.362**	**-0.54**	**0.41**	**19.5**
	Channel 251	33.46								
Digital 1900MHz	Channel 512	30.49								
	Channel 661	30.50	**0.289**	**-0.37**	**0.31**	**19.1**	0.214	0.46	0.21	19.2
	Channel 810	30.50								

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56ED1 at highest possible output power. Measured against the head in the Cheek/Touch Position.

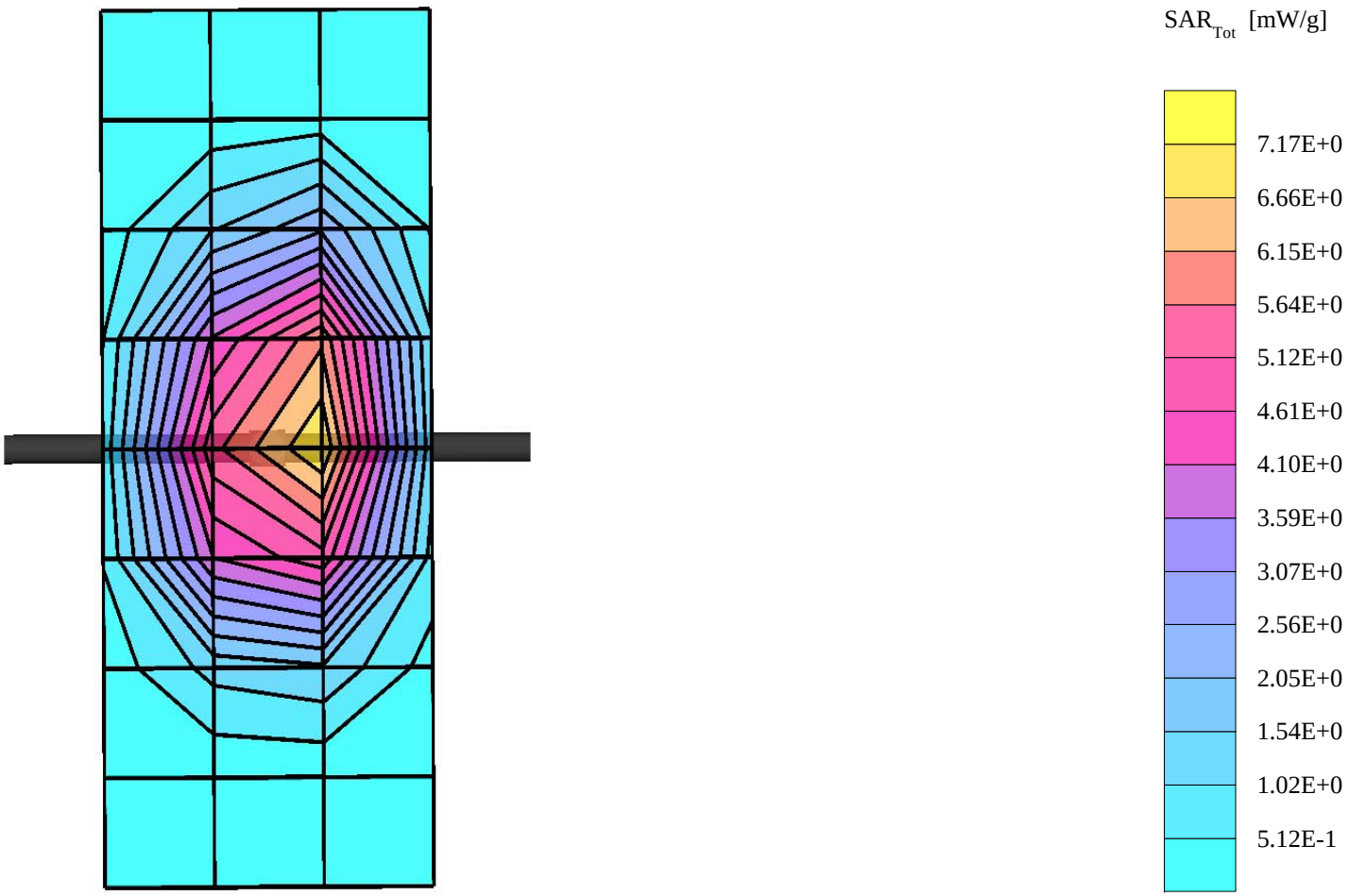
Supplement to Appendix 1

SAR distribution comparison for the system accuracy verification

10/27/04

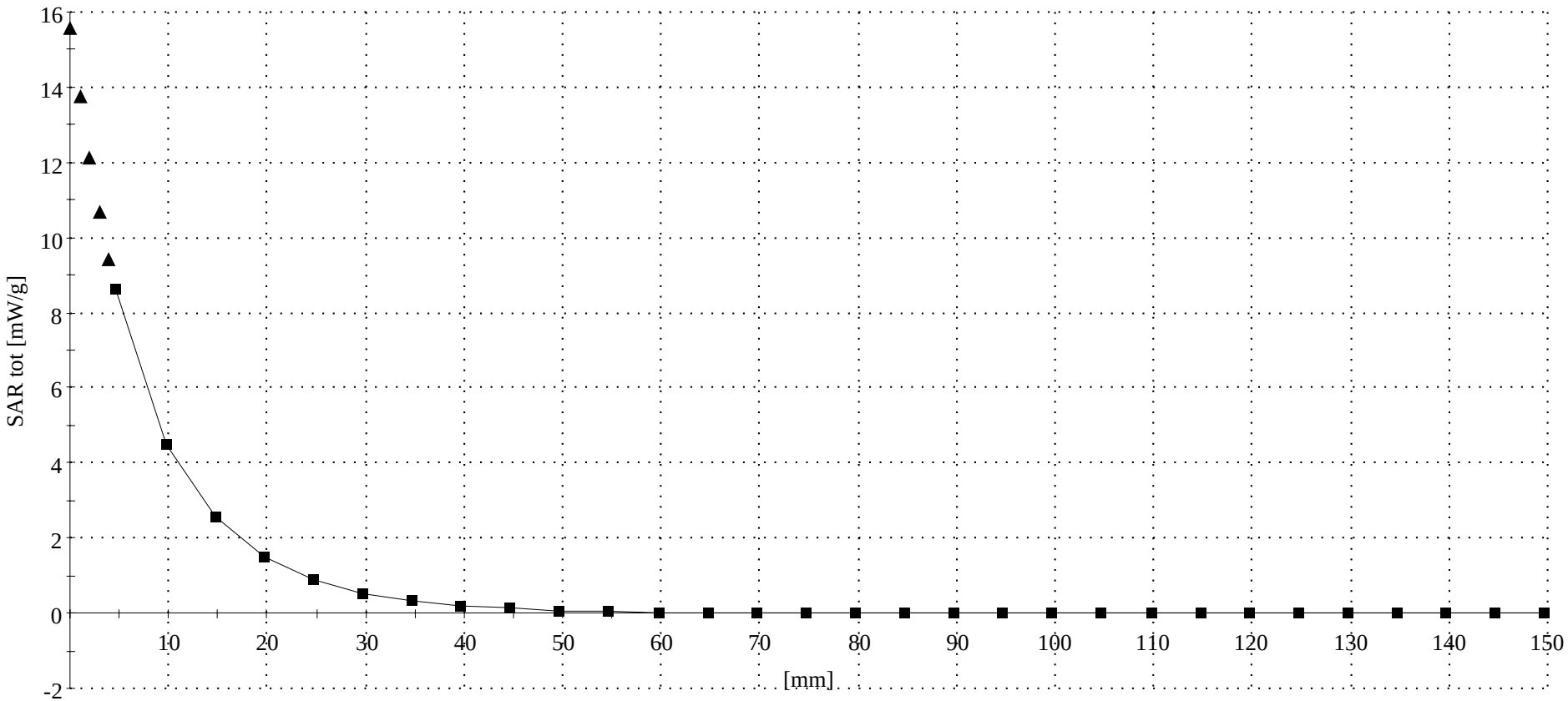
Dipole 1800 MHz

1800 MHz System Performance Check / Dipole Sn# 272TR
PM1 Power = 200mW
Sim.Temp@meas=19.3*C Sim.Temp@SPC =19.1*C Room Temp @ SPC = 20*C
R4 Amy Twin Phantom Rev.4 (22Aug02) Phantom; section 2 Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6 - SN1514-VALADATION4; ConvF(5.03,5.03,5.03); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 8.28 mW/g ± 0.03 dB, SAR (10g): 4.35 mW/g ± 0.01 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.2 (7.8, 9.0) [mm]
Powerdrift: -0.05 dB



Dipole 1800 MHz

1800 MHz System Performance Check / Dipole Sn# 272TR
PM1 Power = 200mW
Sim.Temp@meas=19.3*C Sim.Temp@SPC =19.1*C Room Temp @ SPC = 20*C
R4 Amy Twin Phantom Rev.4 (22Aug02) Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1514-VALADATION4; ConvF(5.03,5.03,5.03); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.7 ρ = 1.00 g/cm^3
: , ()
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 8.1 (7.7, 8.9) [mm]



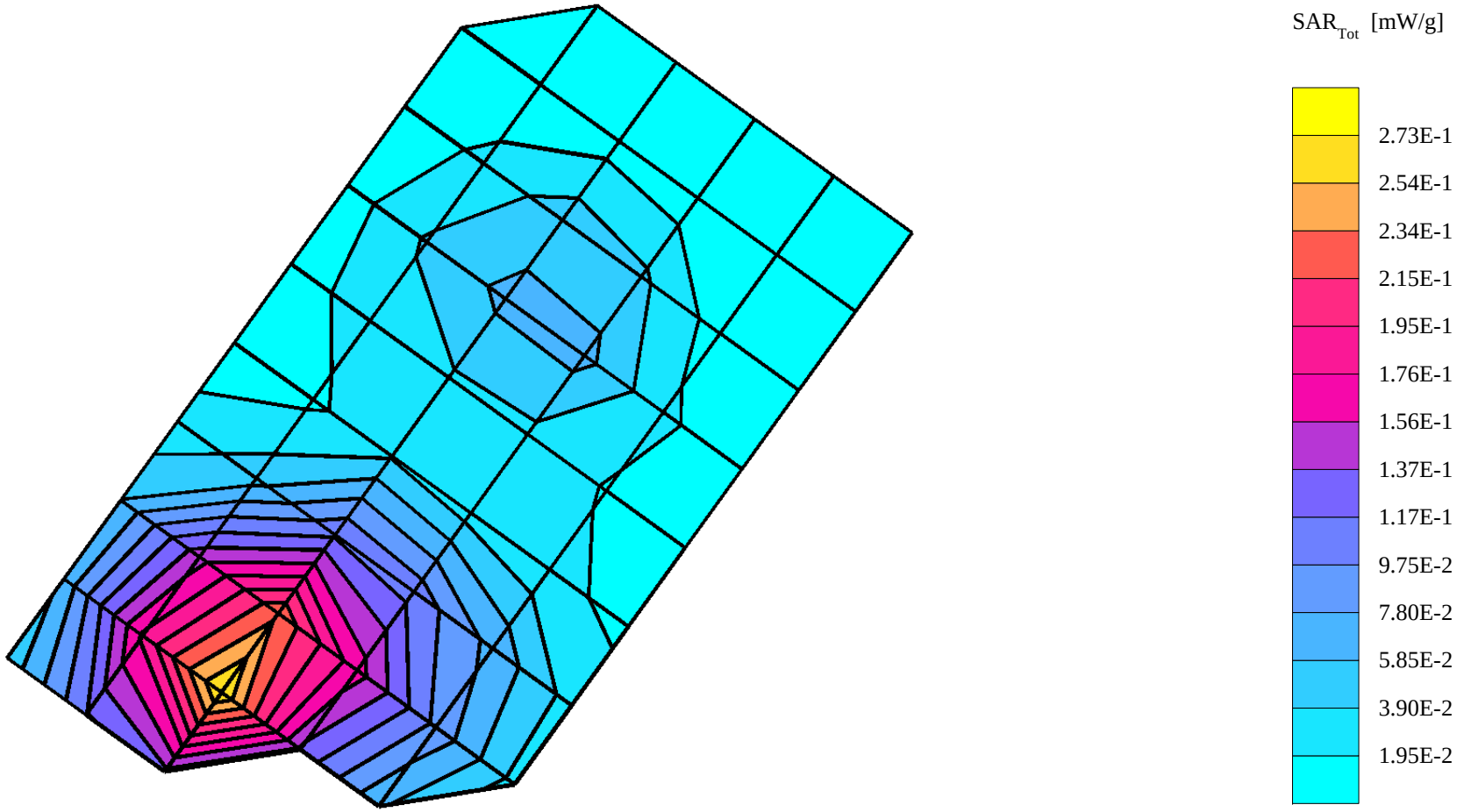
Supplement to Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

10/27/04 14:22

sn: 354358000007462

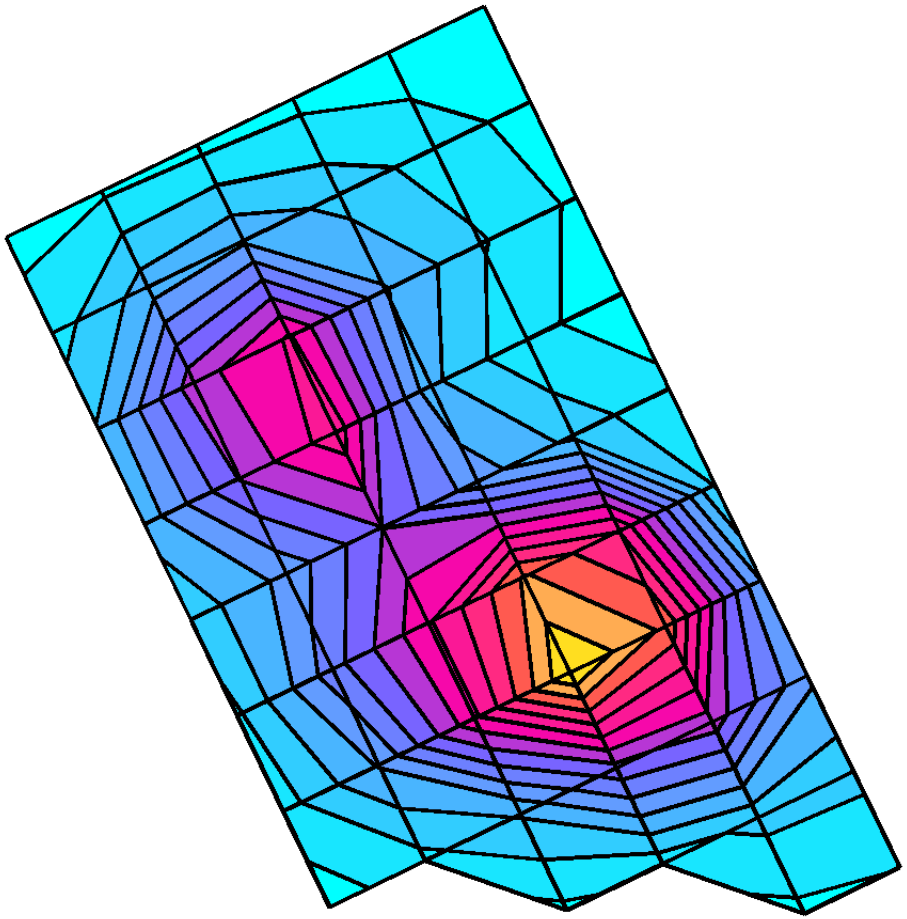
Ch# 661 Pwr Step: 0 ota Antenna Position: INTERNAL
Type of Modulation: 1900 GSM Battery Model #: SNN5683A
DEVICE POSITION: CHEEK
Accessory Model #: none OPENED FLIP
R4 TP-1250 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1514-IEEE Head2; ConvF(5.03,5.03,5.03); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.3 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.289 mW/g, SAR (10g): 0.164 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.4 (9.7, 11.4) [mm]
Powerdrift: -0.37 dB



10/27/04 15:11

sn: 354358000007462

Ch# 661 Pwr Step: 0 ota Antenna Position: INTERNAL
Type of Modulation: 1900 GSM Battery Model #: SNN5683A
DEVICE POSITION: CHEEK
Accessory Model #: none CLOSED FLIP
R4 TP-1250 GLYCOL SAM Expanded (Rev. 2)-9Jan03 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1514-IEEE Head2; ConvF(5.03,5.03,5.03); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.46 mho/m ε_r = 38.3 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.299 mW/g, SAR (10g): 0.180 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.7 (10.1, 11.4) [mm]
Powerdrift: -0.10 dB



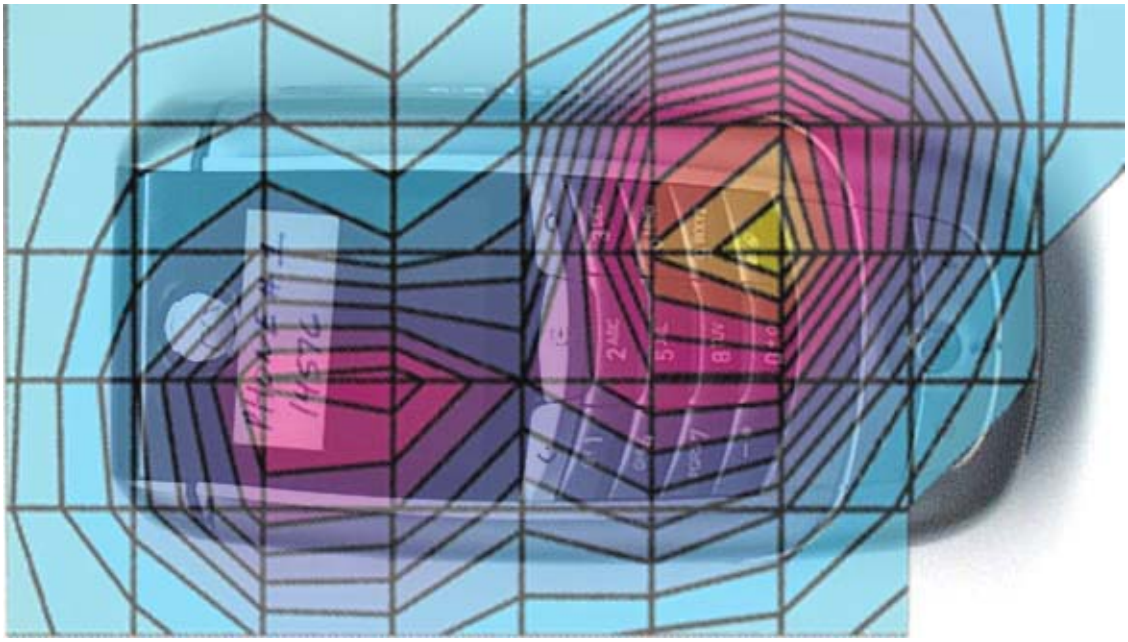


Figure 1.Typical 1900MHz Head Adjacent Contour Overlaid on Phone with Flip Closed (Cheek Touch)

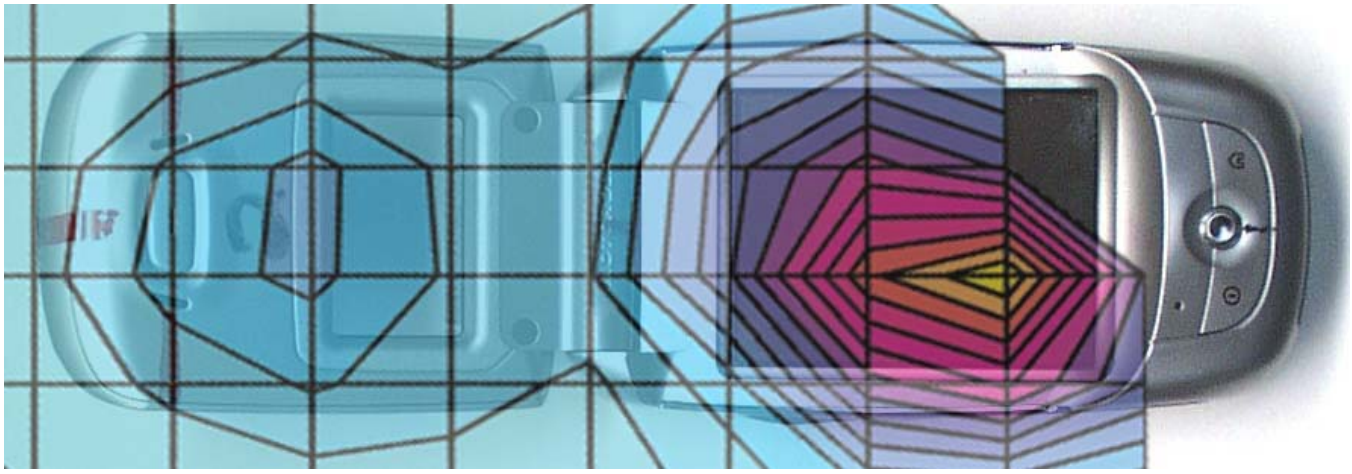
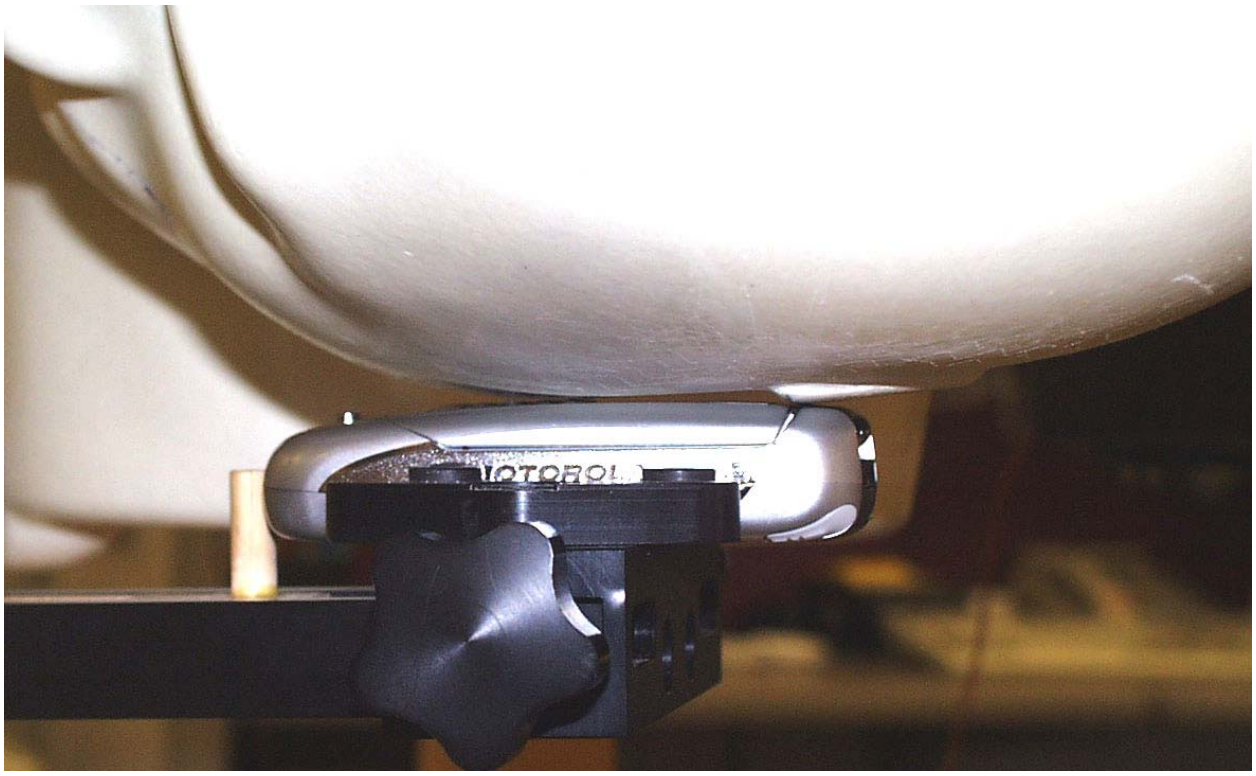


Figure 2.Typical 1900MHz Head Adjacent Contour Overlaid on Phone with Flip Open (Cheek Touch)

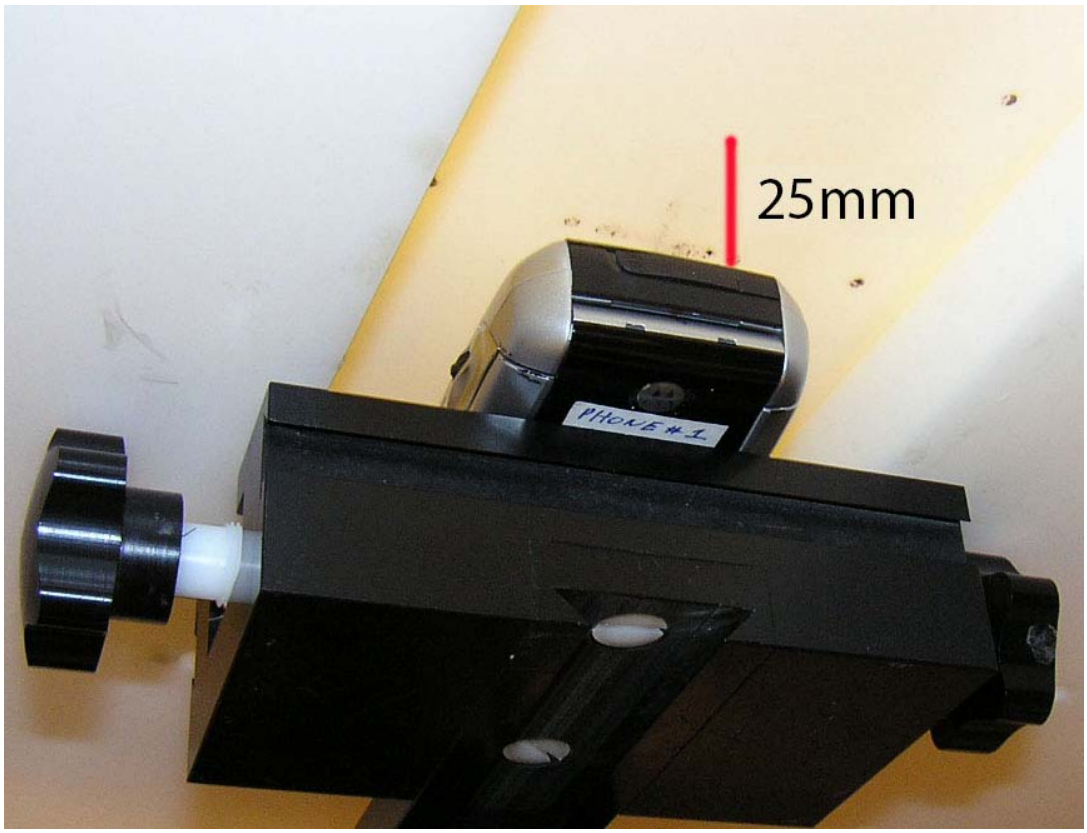
Supplement to Appendix 7

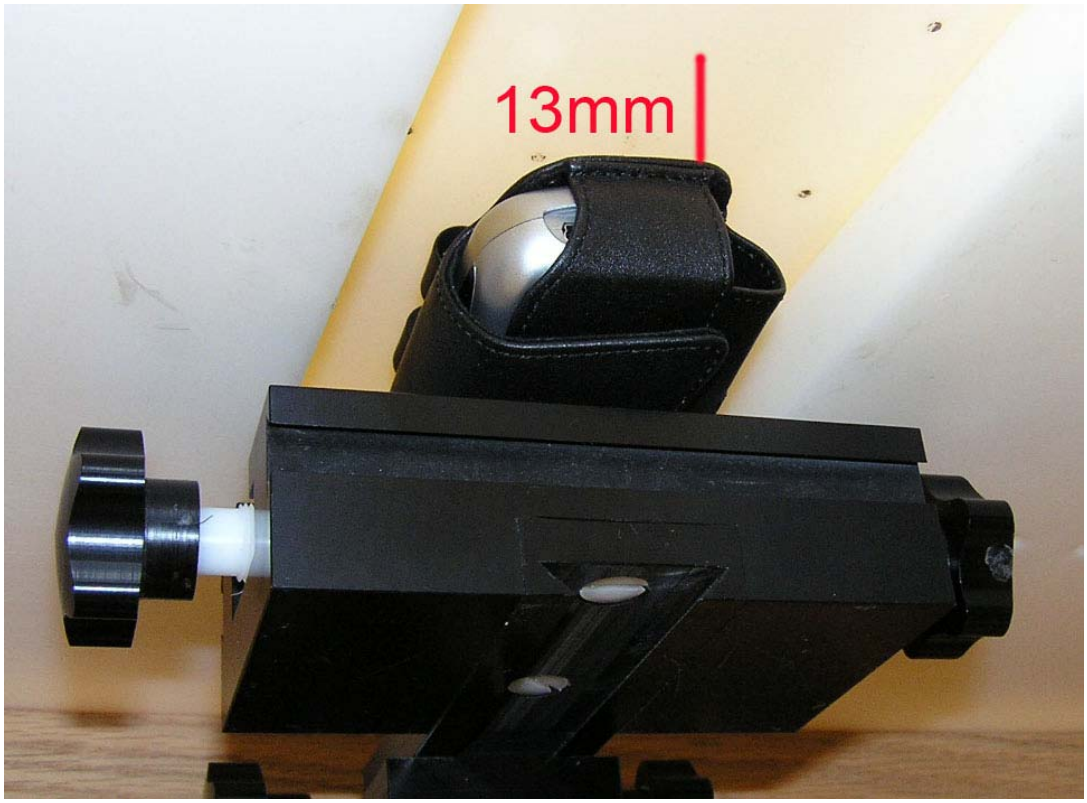
Photographs of the device under test


PHONE #1
14576
MOTOROLA




13mm
13mm


25mm
PHONE #1


13mm