



Exhibit 11: SAR Test Report: IHDT6AW1

Date of test: 9th October, 2001

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Accreditation: ISO 17025 Accredited Lab, A2LA certificate #1651-01

Statement of Compliance: Motorola declares under its sole responsibility that portable cellular telephone FCC ID IHDT6AW1 to which this declaration relates, is in conformity with the appropriate RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

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The results and statements contained herein relate only to the items tested. The names of individuals involved may be mentioned only in connection with the statements or results from this report.

Motorola encourages all feedback, both positive and negative, on this test report.

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1. Introduction

The Motorola Personal Communications Sector Product Safety Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID IHDT6AW1. The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with the latest available test guidelines. The SAR values found for the portable cellular phone (FCC ID IHDT6AW1) are below the maximum recommended levels of 1.6 W/kg. Detailed procedures of the test are described in the *Motorola Exhibit 11 Reference SAR Test Report*.

2. Description of the Device Under Test

Antenna description

Type	Fixed Tri-band
Location	Front hinge, top left side
Configuration	Stub

Device description

FCC ID Number	IHDT6AW1
Serial number	MAB032222C
Mode(s) of Operation	GSM 1900
Maximum Output Power Setting	30.0 dBm
Duty Cycle	1:8
Transmitting Frequency Rang(s)	1850.2 –1909.8 MHz

3. Test Results

This class 2 permissive change report is supplied because of the introduction of a new accessory that allows the Motorola portable cellular phone FCC ID IHDT6AW1 to be used in the head adjacent position.

The SAR results shown in tables 1 and 2 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers and the temperature of the test facility during the test.

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The phone was then placed in the SAR measurement system with a fully charged battery.

A full data set output of two test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 2 and 3. The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included.

f (MHz)	Description	Conducted Output Power (dBm)	SAR, 1g (W/kg)	
			Left Head	Right Head
			Ant Fixed	Ant Fixed
Digital 1900MHz	Channel 512	30.10	0.12	0.14
	Channel 661	30.20	0.13	0.13
	Channel 810	29.90	0.11	0.10

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT6WA1 at highest possible output power. Measured against the head.

f (MHz)	Description	Conducted Output Power (dBm)	SAR, 1g (W/kg)
			Phone Clip Against the Body
			Ant Fixed
Digital 1900MHz	Channel 512	30.10	0.04
	Channel 661	30.20	0.03
	Channel 810	29.90	0.03

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT6WA1 at highest possible output power. Measured against the body.

4. Test Equipment Used

4.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety Laboratory utilizes a Dosimetric Assessment System (Dasy3™) SAR measurement system manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is $\pm 12.0\%$ ($K=1$).

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN434 / SN316	05/14/02 / 12/14/01
E-Field Probe ETDV6	SN1398 / SN1515	08/31/02 / 08/31/02
Dipole Validation Kit, DV1800V2	SN280 / SN282	01/04/03 / 01/04/03

4.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	38847A04844 / 3847A04850	1/19/03 / 12/20/02
Power Meter E4419B	GB39511084 / GB39511082	1/18/02 / 1/18/02
Power Sensor E9301A	US39211006 / US39210929A	1/24/02 / 1/28/02

5. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with HP85070 Dielectric Probe Kit. These values are shown in the table below. The mass density, ρ , used by the dosimetric system is also given. Recommended limits for maximum permittivity, minimum conductivity and maximum mass density are also shown. It is seen that the measured parameters are satisfactory for compliance testing.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	ρ (g/cm ³)
1880	Head	Measured, 10/12/01	38.40	1.45	1.00
		Recommended Limits	40.00	1.40	1.03
	Body	Measured, 10/08/01	51.70	1.69	1.00
		Recommended Limits	53.30	1.52	1.03

6. System Accuracy Verification

A system accuracy verification of the DASY3 was performed using the measurement equipment listed in Section 4. The test was conducted on the same day as the measurement of the DUT. The obtained results are displayed in the table below. The distributions of SAR compare well with those of the reference measurements (see Appendix 1).

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Temp (°C)
			ϵ_r	σ (S/m)	
1800	Measured (10/08/01)	46.24	39.7	1.73	22.80
	Recommended Limits	44.80	41.0	1.70	N/A
1800	Measured (10/12/01)	45.30	41.2	1.72	22.90
	Recommended Limits	44.40	41.0	1.70	N/A

Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 282 / Forward Power = 253 mw

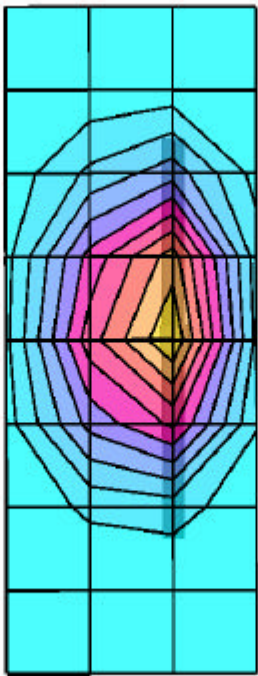
Robot 6 Amy Twin Phantom 2.3; Section 1

Probe: ET3DV6 - SN1398 - Validation (Sugar Water); ConvF(5.50,5.50,5.50); Crest factor: 1.0; Validation 1800 MHz: $\sigma = 1.73 \text{ mho/m}$ $\epsilon_r = 39.7$ $\rho = 1.00 \text{ g/cm}^3$

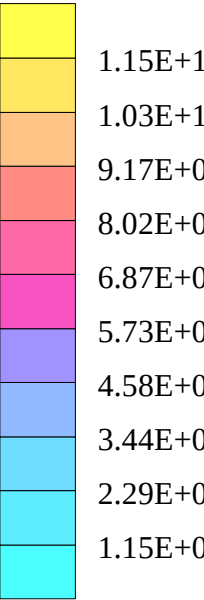
Cubes (2): Peak: $23.2 \text{ mW/g} \pm 0.06 \text{ dB}$, SAR (1g): $11.7 \text{ mW/g} \pm 0.04 \text{ dB}$, SAR (10g): $5.78 \text{ mW/g} \pm 0.02 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 7.1 (6.8, 7.9) [mm]

Powerdrift: -0.03 dB



SAR_{Tot} [mW/g]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 280 / Forward Power = 247mW

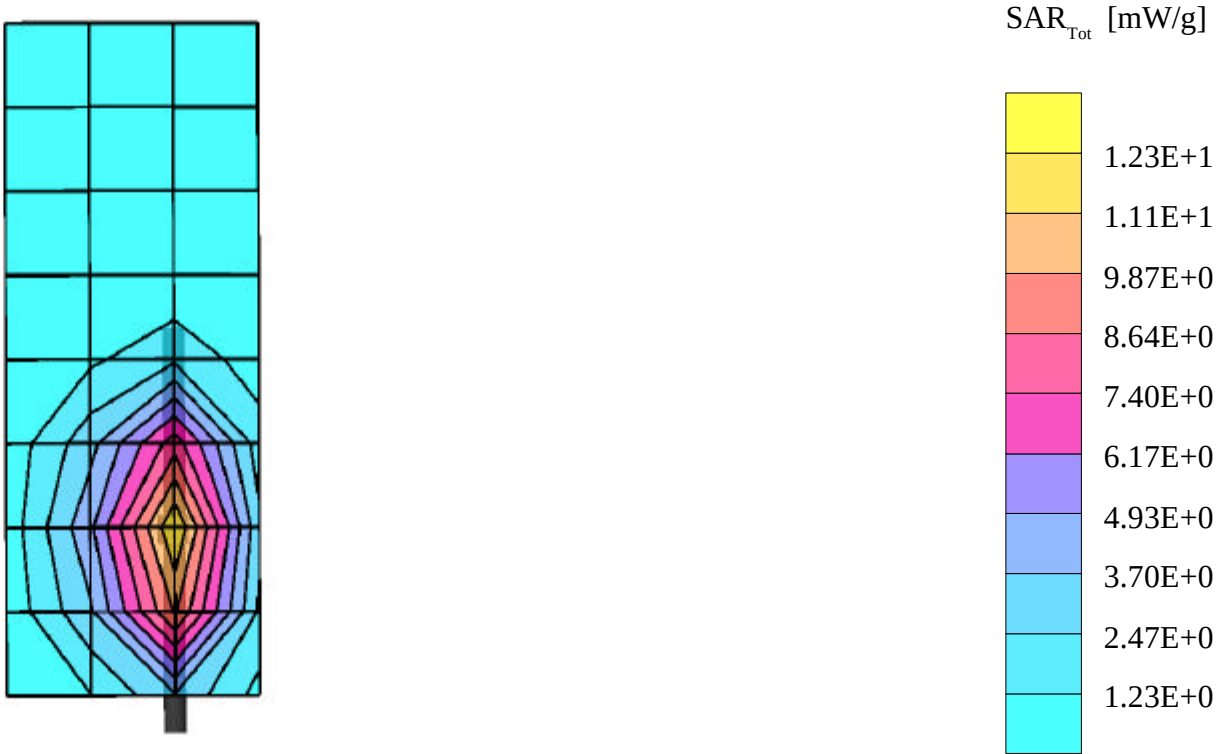
Robot 8 Amy Twin Phantom 2.3; Section 1

Probe: ET3DV6 - SN1515 - Validation; ConvF(5.70,5.70,5.70); Crest factor: 1.0; Validation 1800 MHz: $\sigma = 1.72 \text{ mho/m}$ $\epsilon_r = 41.2$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): Peak: $22.0 \text{ mW/g} \pm 0.01 \text{ dB}$, SAR (1g): $11.2 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (10g): $5.56 \text{ mW/g} \pm 0.05 \text{ dB}$, (Worst-case extrapolation)

Penetration depth: 7.3 (7.0, 8.0) [mm]

Powerdrift: 0.14 dB



Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

Camelot GSM (MN# SUG2567AA) (SN# C1) (lotus 4605-1) Phone A

Ch# 512 / Pwr Step: 00(Test Mode) / Antenna Position: Fixed

R8 hi freq right head JILL Phantom; Right Head Section; Position: (80°,180°); Frequency: 1850 MHz

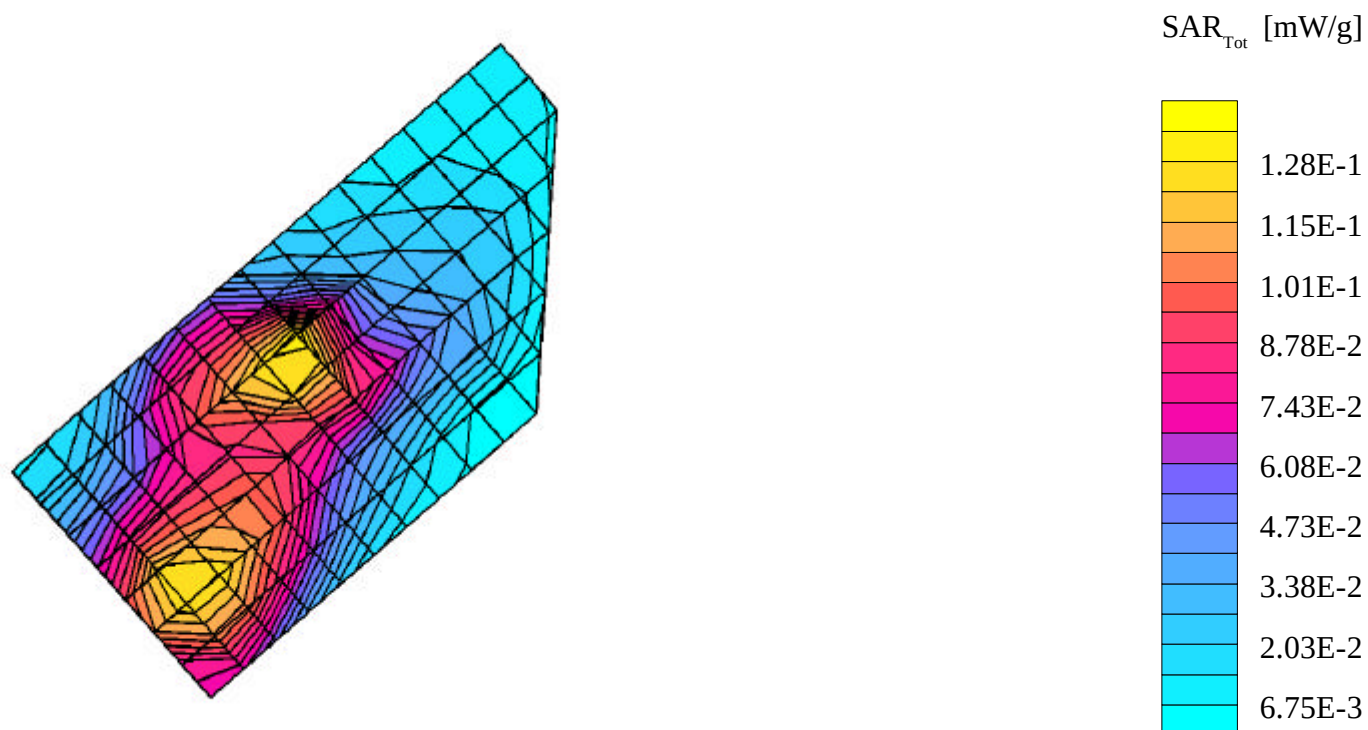
Probe: ET3DV6 - SN1515 - BRAIN (Glycol); ConvF(5.40,5.40,5.40); Crest factor: 8.0; Head Glycol 1900 MHz: $\sigma = 1.45$ mho/m $\epsilon_r = 38.4$ $\rho = 1.00$ g/cm³

Cube 5x5x7: SAR (1g): 0.139 mW/g, SAR (10g): 0.0791 mW/g, (Worst-case extrapolation)

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

Penetration depth: 10.8 (9.6, 12.4) [mm]

Powerdrift: -0.11 dB



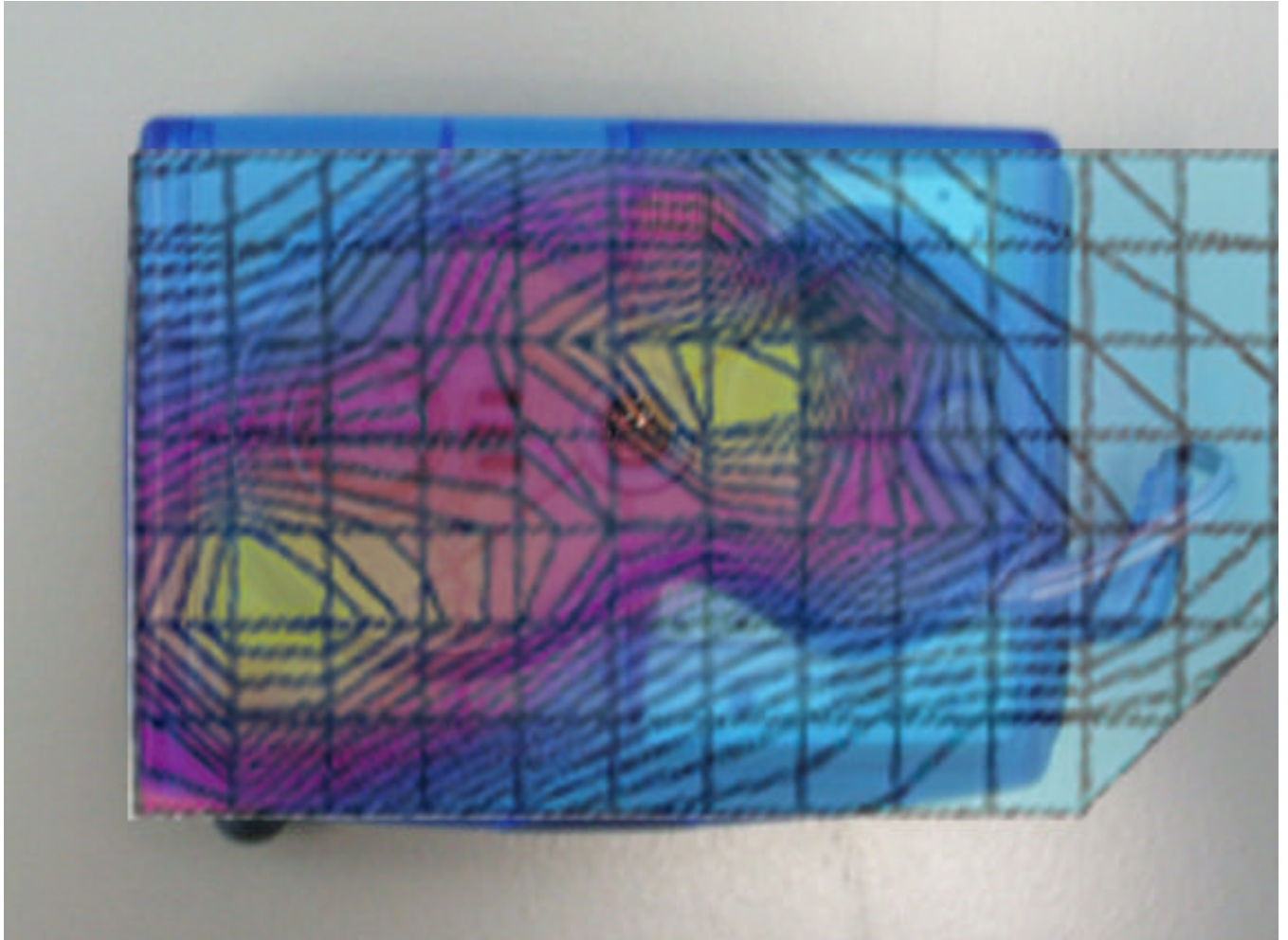


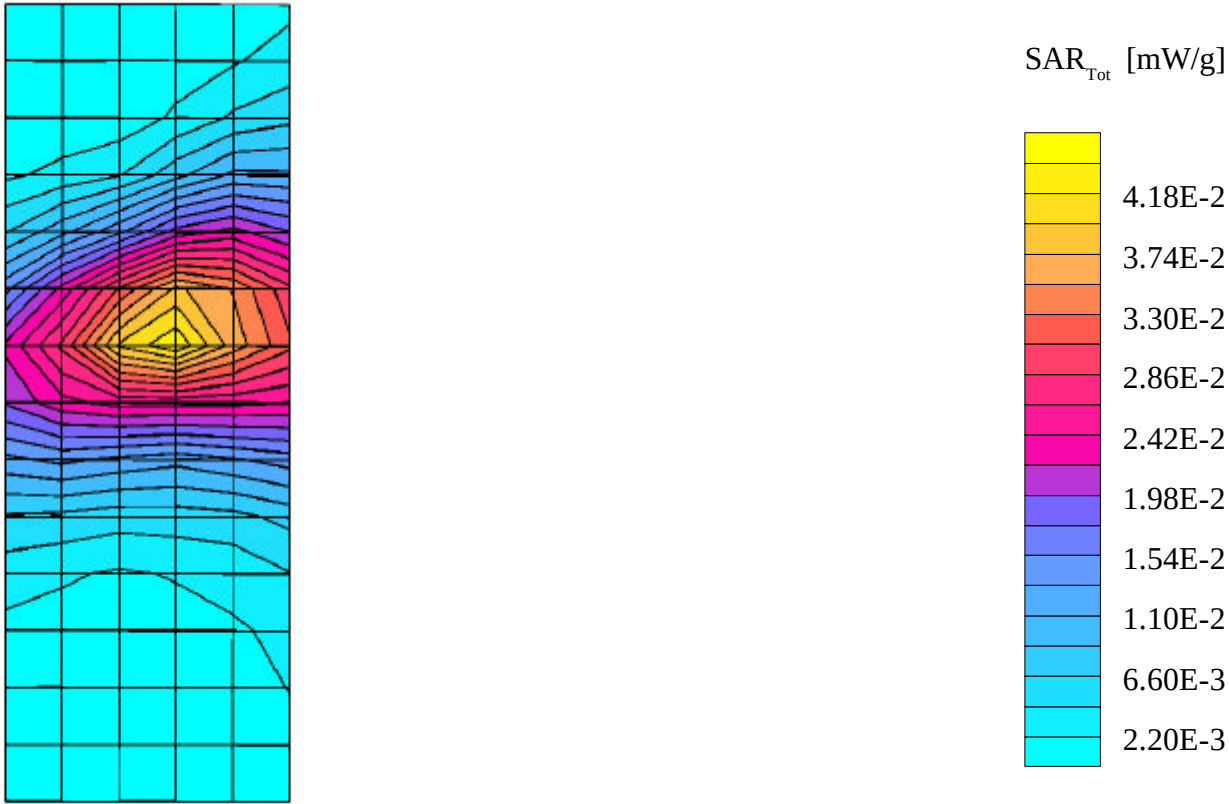
Figure 1. Typical 1900MHz Head Adjacent Contour Overlaid on Phone

Appendix 3

SAR distribution plots for Body Worn Configuration

Camelot GSM (MN# SUG2567AA) (SN# C1) (lotus 4605-1) Phone A

Ch# 512 / Pwr Step:00(Test Mode) / Antenna Position: Fixed
Robot 6 Amy Twin Phantom 2.3 Phantom; Section 1 Section; Position: (0°,0°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1398 - Muscle (Glycol); ConvF(5.00,5.00,5.00); Crest factor: 8.0; Muscle Glycol 1900 MHz: $\sigma = 1.69 \text{ mho/m}$ $\epsilon_r = 51.7$ $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 0.0411 mW/g, SAR (10g): 0.0250 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 10.2 (8.9, 11.8) [mm]
Powerdrift: 0.02 dB



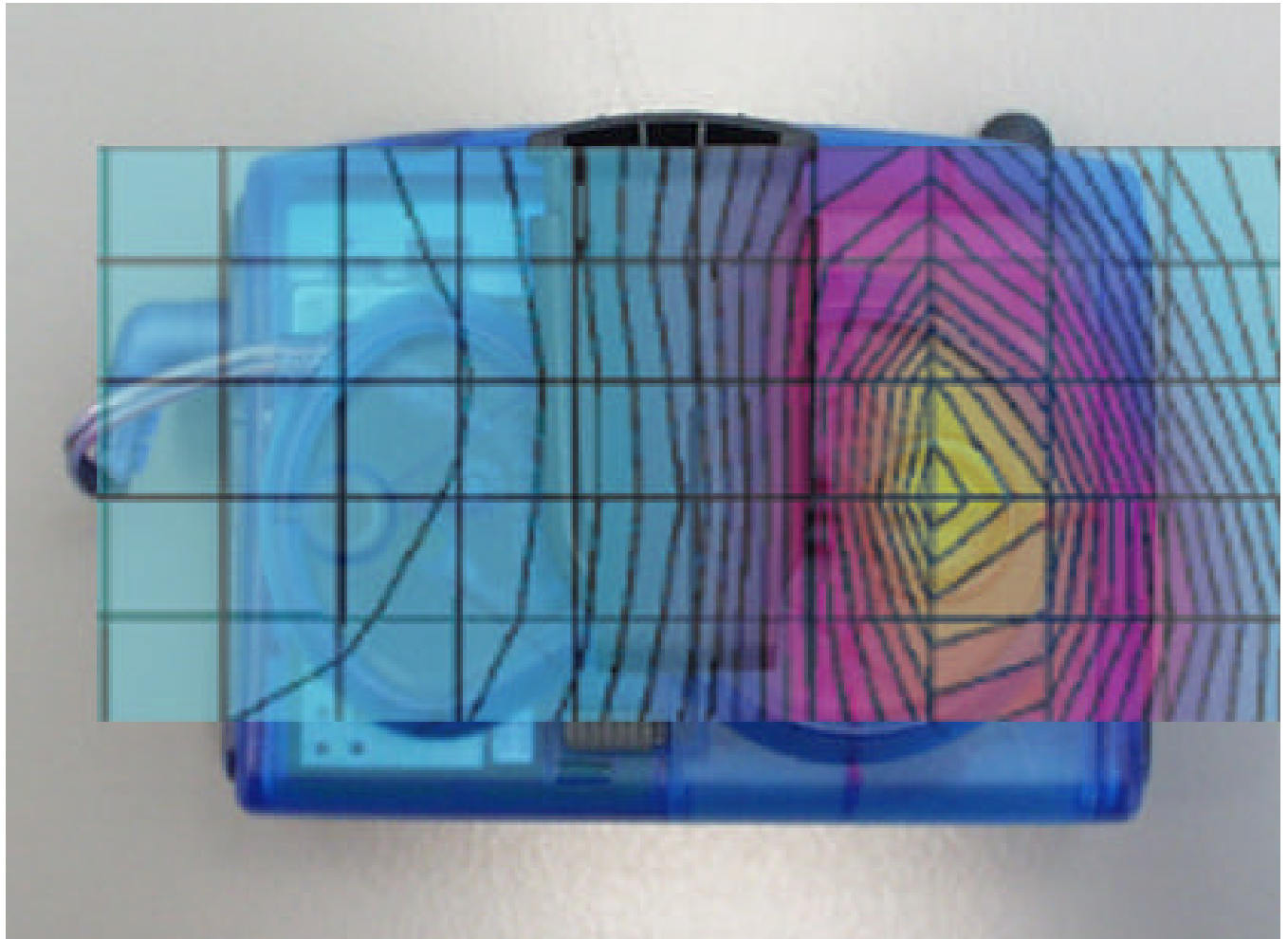


Figure 1. Typical 1900MHz Body-Worn Contour Overlaid on Phone

Appendix 4

Photographs of the device under test



Figure 3. Front of the Phone



Figure 4. Back of the Phone



Figure 5. Back of the Phone with Phone Clip



Figure 6. Distance of the Antenna from the Flat Phantom

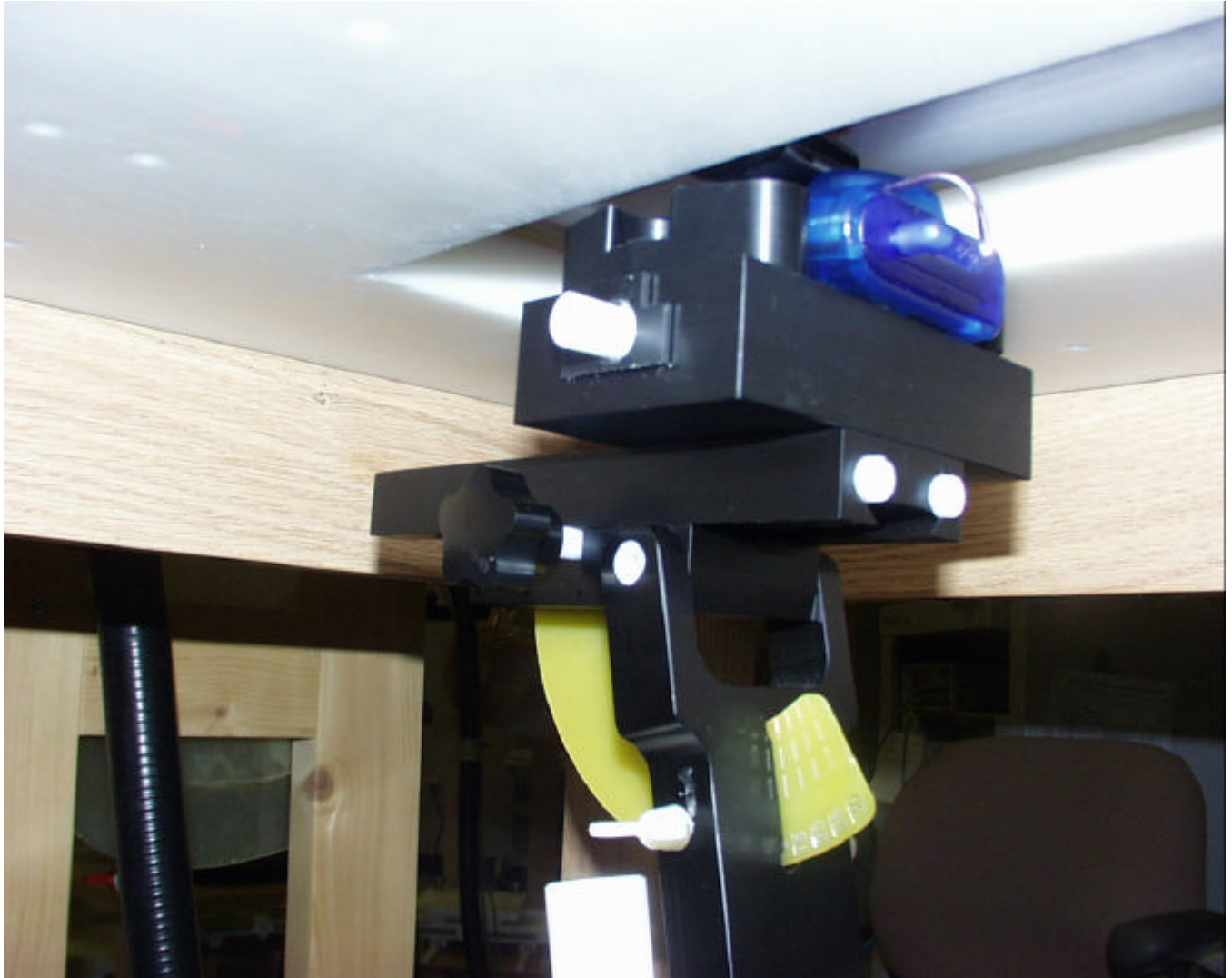


Figure 7. Body Worn Position of the Phone with the Phone clip Placed Under a Flat Phantom

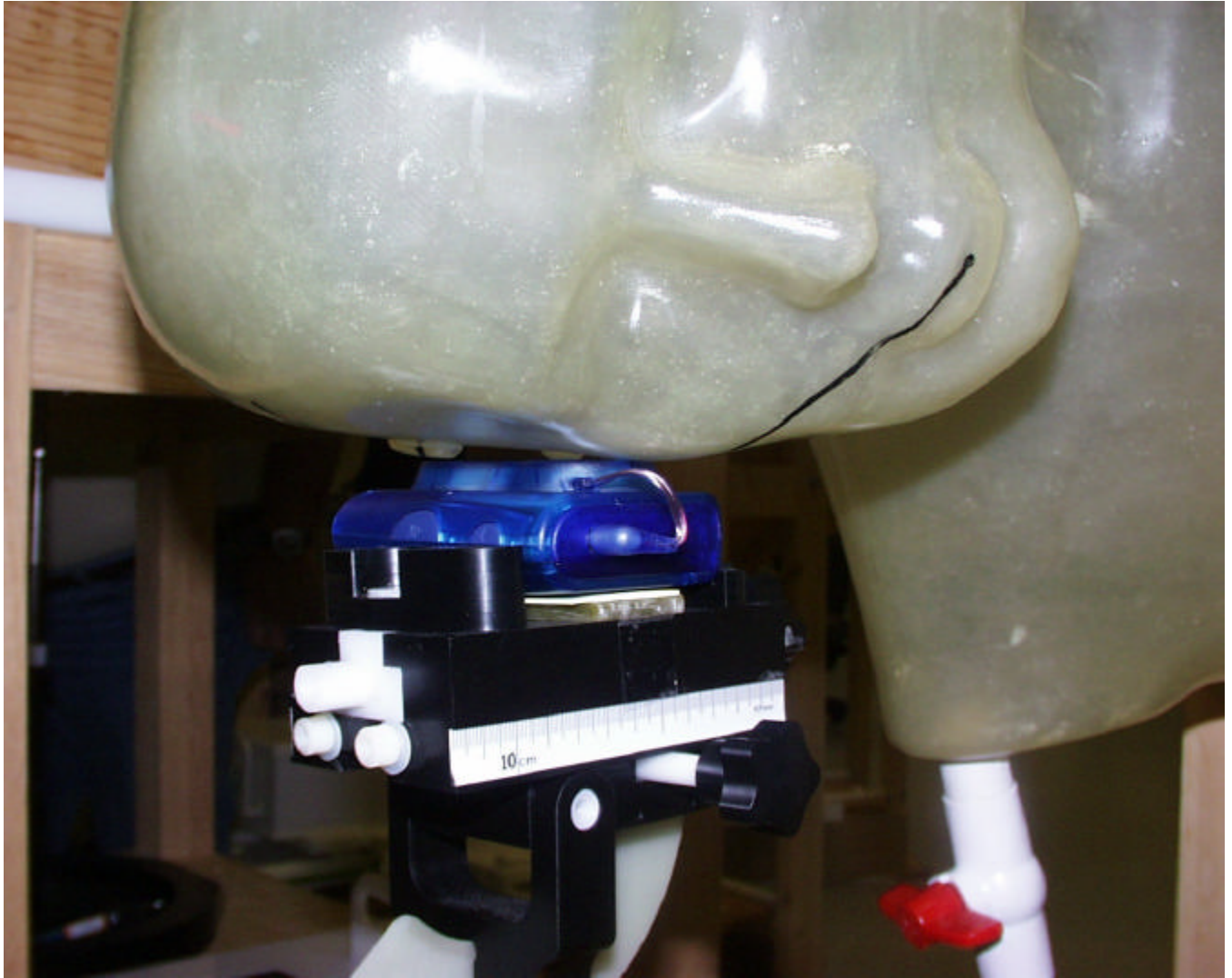


Figure 8. Phone placed in Head Adjacent Position