CERTIFICATE OF COMPLIANCE
SAR EVALUATION

Test Lab:	**Applicant Information:**
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FCC ID:	**POQWPE-2000**
Model(s):	**WPE-2000**
Equipment Type:	**Dual-Band Cellular/PCS CDMA Phone**
Classification:	**Part 24 Licensed Portable Transmitter Held to Ear (PCE)**
Tx Frequency Range:	**1851.25 - 1908.75 MHz (PCS CDMA)** **824.70 - 848.31 MHz (Cellular CDMA)**
Rx Frequency Range:	**1931.25 - 1988.75 MHz (PCS CDMA)** **869.70 - 893.31 MHz (Cellular CDMA)**
Max. RF Output Power:	**0.267 Watts EIRP (PCS CDMA)** **0.243 Watts ERP (Cellular CDMA)**
FCC Rule Part(s):	**2.1093; ET Docket 96.326**

Celltech Research Inc. declares under its sole responsibility that this device was found to be in compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in OET Bulletin 65, Supplement C, Edition 01-01 (General Population/Uncontrolled Exposure), and was tested in accordance with the appropriate measurement standards, guidelines, and recommended practices specified in American National Standards Institute C95.1-1992.

I attest to the accuracy of data. All measurements 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.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Research Inc. The results and statements contained in this report pertain only to the device(s) evaluated.

Shawn McMillen
General Manager
Celltech Research Inc.

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1.0 INTRODUCTION

This measurement report shows that the WITHUS IT CO., LTD. Model: WPE-2000 Dual-Band Cellular/PCS CDMA Phone FCC ID: POQWPE-2000 complies with FCC Part 2.1093, ET Docket 96-326 Rules for mobile and portable devices. The test procedures, as described in American National Standards Institute C95.1-1992 (see reference [1]), and FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [2]) were employed. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 DESCRIPTION of Equipment Under Test (EUT)

EUT Type	Dual-Band Cellular/PCS CDMA Phone	**FCC ID**	POQWPE-2000
Equipment Class	Part 24 Licensed Portable Transmitter Held to Ear (PCE)	**Model No.(s)**	WPE-2000
FCC Rule Part(s)	§ 2.1093, Docket 96-326	**Application Type**	FCC Part 24 Certification
Tx Frequency Range (MHz)	1851.25-1908.75 (PCS CDMA) 824.70-848.31 (Cellular CDMA)	**Serial No.**	Pre-production Unit
Rx Frequency Range (MHz)	1931.25-1988.75 (PCS CDMA) 869.70-893.31 (Cellular CDMA)	**Battery Type(s)**	3.7V 950mA/h Lithium-Ion Battery
Max. RF Output Power	0.267 W EIRP (PCS CDMA) 0.243 W ERP (Cellular CDMA)	**Antenna Type**	Retractable Whip (1/4λ)
Modulation(s)	PCS CDMA Cellular CDMA	**Antenna Length**	113 mm

3.0 SAR MEASUREMENT SYSTEM

Celltech Research SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for brain or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE3 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

DASY3 SAR Measurement System with SAM phantom

4.0 MEASUREMENT SUMMARY

The measurement results were obtained with the EUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the EUT are reported in Appendix A.

1900MHz PCS CDMA HEAD SAR MEASUREMENT RESULTS - Left Head Section

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Test Position	SAR 1g (w/kg)
1851.25	25	PCS CDMA	24.51	24.46	Standard	Retracted	Left Ear	Cheek/Touch	0.587
1851.25	25	PCS CDMA	24.51	24.51	Standard	Extended	Left Ear	Cheek/Touch	0.0920
1880.00	600	PCS CDMA	24.54	24.41	Standard	Retracted	Left Ear	Cheek/Touch	0.526
1880.00	600	PCS CDMA	24.55	24.31	Standard	Extended	Left Ear	Cheek/Touch	0.195
1908.75	1175	PCS CDMA	24.51	24.29	Standard	Retracted	Left Ear	Cheek/Touch	0.303
1908.75	1175	PCS CDMA	24.54	24.32	Standard	Extended	Left Ear	Cheek/Touch	0.131
1880.00	600	PCS CDMA	24.56	24.47	Standard	Retracted	Left Ear	Ear/Tilt	0.251
1880.00	600	PCS CDMA	24.57	24.46	Standard	Extended	Left Ear	Ear/Tilt	0.0639
Mixture Type: Brain (Measured) Dielectric Constant: 40.4 Conductivity: 1.40				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BRAIN: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 22, 2001.
2. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest PCS CDMA head SAR value found (left head section) was 0.587 w/kg (cheek/touch position).
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested with the clamshell open, which is the only ear-held operating configuration for this phone.
6. Ambient TEMPERATURE: 21.1°C
   Relative HUMIDITY: 43.7 %
   Atmospheric PRESSURE: 101.4 kPa
7. Fluid Temperature ≈ 23 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

MEASUREMENT SUMMARY (CONT.)

1900MHz PCS CDMA HEAD SAR MEASUREMENT RESULTS - Right Head Section

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Test Position	SAR 1g (w/kg)
1851.25	25	PCS CDMA	24.52	24.28	Standard	Retracted	Right Ear	Cheek/Touch	0.583
1851.25	25	PCS CDMA	24.55	24.52	Standard	Extended	Right Ear	Cheek/Touch	0.0929
1880.00	600	PCS CDMA	24.55	24.62	Standard	Retracted	Right Ear	Cheek/Touch	0.501
1880.00	600	PCS CDMA	24.59	24.60	Standard	Extended	Right Ear	Cheek/Touch	0.155
1908.75	1175	PCS CDMA	24.50	24.36	Standard	Retracted	Right Ear	Cheek/Touch	0.262
1908.75	1175	PCS CDMA	24.57	24.52	Standard	Extended	Right Ear	Cheek/Touch	0.125
1880.00	600	PCS CDMA	24.56	24.34	Standard	Retracted	Right Ear	Ear/Tilt	0.243
1880.00	600	PCS CDMA	24.58	24.53	Standard	Extended	Right Ear	Ear/Tilt	0.0810
Mixture Type: Brain (Measured) Dielectric Constant: 40.4 Conductivity: 1.40				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BRAIN: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 22, 2001.
2. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest PCS CDMA head SAR value found (right head section) was 0.583 w/kg (cheek/touch position).
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested with the clamshell open, which is the only ear-held operating configuration for this phone.
6. Ambient TEMPERATURE: 21.1 °C
   Relative HUMIDITY: 43.7 %
   Atmospheric PRESSURE: 101.4 kPa
7. Fluid Temperature ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

MEASUREMENT SUMMARY (CONT.)

800MHz Cellular CDMA HEAD SAR MEASUREMENT RESULTS - Left Head Section

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Test Position	SAR 1g (w/kg)
824.70	1013	CDMA	24.07	24.12	Standard	Retracted	Left Ear	Cheek/Touch	0.805
824.70	1013	CDMA	24.06	24.02	Standard	Extended	Left Ear	Cheek/Touch	1.18
835.89	363	CDMA	24.03	23.93	Standard	Retracted	Left Ear	Cheek/Touch	0.848
835.89	363	CDMA	24.03	24.00	Standard	Extended	Left Ear	Cheek/Touch	1.19
848.31	777	CDMA	24.08	24.08	Standard	Retracted	Left Ear	Cheek/Touch	0.956
848.31	777	CDMA	24.00	23.87	Standard	Extended	Left Ear	Cheek/Touch	0.989
835.89	363	CDMA	24.03	23.95	Standard	Retracted	Left Ear	Ear/Tilt	0.227
835.89	363	CDMA	24.02	24.05	Standard	Extended	Left Ear	Ear/Tilt	0.316
Mixture Type: Brain (Measured) Dielectric Constant: 41.2 Conductivity: 0.90				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BRAIN: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 22, 2001.
2. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest 800MHz CDMA head SAR value found (left head section) was 1.19 w/kg (cheek/touch position).
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested with the clamshell open, which is the only ear-held operating configuration for this phone.
6. Ambient TEMPERATURE: 21.1 °C
   Relative HUMIDITY: 43.7 %
   Atmospheric PRESSURE: 101.4 kPa
7. Fluid Temperature ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

MEASUREMENT SUMMARY (CONT.)

800MHz Cellular CDMA HEAD SAR MEASUREMENT RESULTS - Right Head Section

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Test Position	SAR 1g (w/kg)
824.70	1013	CDMA	24.02	24.07	Standard	Retracted	Right Ear	Cheek/Touch	0.808
824.70	1013	CDMA	24.00	24.12	Standard	Extended	Right Ear	Cheek/Touch	1.18
835.89	363	CDMA	24.00	24.03	Standard	Retracted	Right Ear	Cheek/Touch	0.877
835.89	363	CDMA	24.00	23.95	Standard	Extended	Right Ear	Cheek/Touch	1.21
848.31	777	CDMA	24.08	24.04	Standard	Retracted	Right Ear	Cheek/Touch	0.967
848.31	777	CDMA	24.01	23.81	Standard	Extended	Right Ear	Cheek/Touch	1.02
835.89	363	CDMA	24.03	24.05	Standard	Retracted	Right Ear	Ear/Tilt	0.284
835.89	363	CDMA	24.04	24.13	Standard	Extended	Right Ear	Ear/Tilt	0.385
Mixture Type: Brain (Measured) Dielectric Constant: 41.2 Conductivity: 0.90				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BRAIN: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 22, 2001.
2. The SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest 800MHz CDMA head SAR value found (right head section) was 1.21 w/kg (cheek/touch position).
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested with the clamshell open, which is the only ear-held operating configuration for this phone.
6. Ambient TEMPERATURE: 21.1 °C
   Relative HUMIDITY: 43.7 %
   Atmospheric PRESSURE: 101.4 kPa
7. Fluid Temperature ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

MEASUREMENT SUMMARY (CONT.)

1900MHz PCS CDMA BODY SAR MEASUREMENT RESULTS

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Separation Distance (cm)	SAR 1g (w/kg)
1851.25	25	PCS CDMA	24.53	24.50	Standard	Retracted	Planar	1.5	0.326
1851.25	25	PCS CDMA	24.50	24.27	Standard	Extended	Planar	1.5	0.331
1880.00	600	PCS CDMA	24.53	24.32	Standard	Retracted	Planar	1.5	0.252
1880.00	600	PCS CDMA	24.50	24.28	Standard	Extended	Planar	1.5	0.586
1908.75	1175	PCS CDMA	24.50	24.32	Standard	Retracted	Planar	1.5	0.273
1908.75	1175	PCS CDMA	24.50	24.37	Standard	Extended	Planar	1.5	0.318
Mixture Type: Body (Measured) Dielectric Constant: 53.4 Conductivity: 1.52				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BODY: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 23, 2001.
2. The body SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest PCS CDMA body SAR value found was 0.586 w/kg.
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested for body SAR with the clamshell closed, which is the only intended body-worn operating configuration for this phone. A 1.5cm separation distance was maintained between the back of the phone and the outer surface of the SAM planar phantom.
6. Ambient TEMPERATURE: 23.3 °C
   Relative HUMIDITY: 42.9 %
   Atmospheric PRESSURE: 101.2 kPa
7. Fluid Temperature ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

MEASUREMENT SUMMARY (CONT.)

800MHz Cellular CDMA BODY SAR MEASUREMENT RESULTS

Freq. (MHz)	Channel	Modulation	Cond. Power Before (dBm)	Cond. Power After (dBm)	Battery Type	Antenna Position	Phantom Section	Separation Distance (cm)	SAR 1g (w/kg)
824.70	1013	CDMA	24.05	24.15	Standard	Retracted	Planar	1.5	0.617
824.70	1013	CDMA	24.05	24.18	Standard	Extended	Planar	1.5	1.10
835.89	363	CDMA	24.05	24.01	Standard	Retracted	Planar	1.5	0.706
835.89	363	CDMA	24.07	24.02	Standard	Extended	Planar	1.5	1.26
848.31	777	CDMA	24.06	23.82	Standard	Retracted	Planar	1.5	0.752
848.31	777	CDMA	24.02	23.81	Standard	Extended	Planar	1.5	0.942
Mixture Type: Body (Measured) Dielectric Constant: 55.1 Conductivity: 0.97				**ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak: Uncontrolled Exposure/General Population BODY: 1.6 W/kg (averaged over 1 gram)**					

Notes:

1. Test Date(s): November 23, 2001.
2. The body SAR values found were below the maximum limit of 1.6 w/kg (averaged over 1 gram).
3. The highest 800MHz CDMA body SAR value found was 1.26 w/kg.
4. The EUT was tested using the standard battery, which is the only battery option for this phone.
5. The EUT was tested for body SAR with the clamshell closed, which is the only intended body-worn operating configuration for this phone. A 1.5cm separation distance was maintained between the back of the phone and the outer surface of the SAM planar phantom.
6. Ambient TEMPERATURE: 23.3 °C
   Relative HUMIDITY: 42.9 %
   Atmospheric PRESSURE: 101.2 kPa
7. Fluid Temperature ≈ 23.0 °C
8. During the entire test the conducted power was maintained to within 5% of the initial conducted power.

5.0 DETAILS OF SAR EVALUATION

The WITHUS IT CO., LTD. Model: WPE-2000 Dual-Band Cellular/PCS CDMA Phone FCC ID: POQWPE-2000 was found to be compliant for localized Specific Absorption Rate (SAR) based on the following test provisions and conditions:

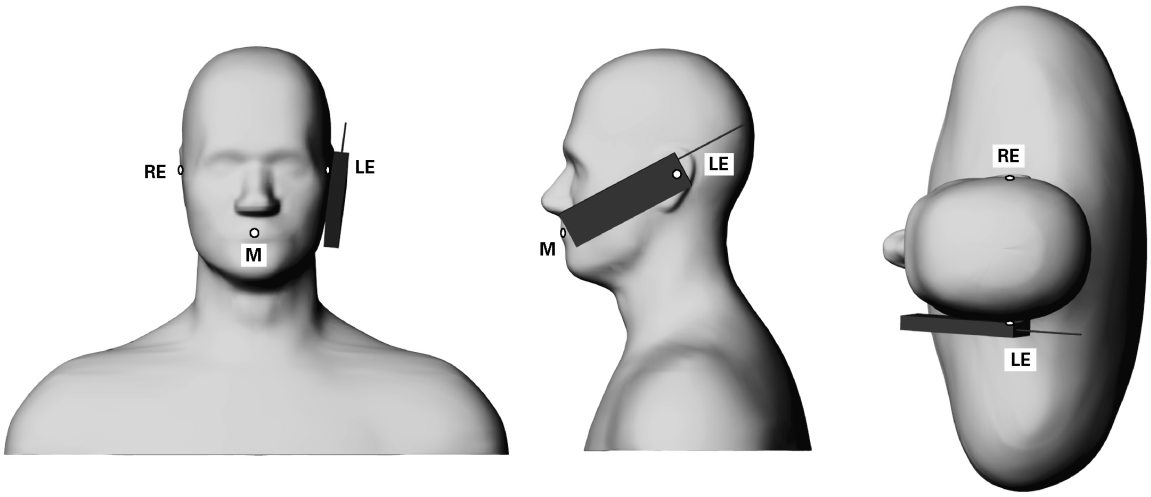
1) The EUT was tested in a ear-held configuration on both the left and right sections of the phantom with the device antenna in both the extended and retracted positions as follows:

a) The handset was placed in the device holder in a normal operating position with the test device reference point located along the vertical centerline on the front of the device aligned to the ear reference point, with the center of the earpiece touching the center of the ear spacer of the SAM phantom.

b) With the handset positioned parallel to the cheek, the test device reference point was aligned to the ear reference point on the head phantom, and the vertical centerline was aligned to the phantom reference plane (initial ear position).

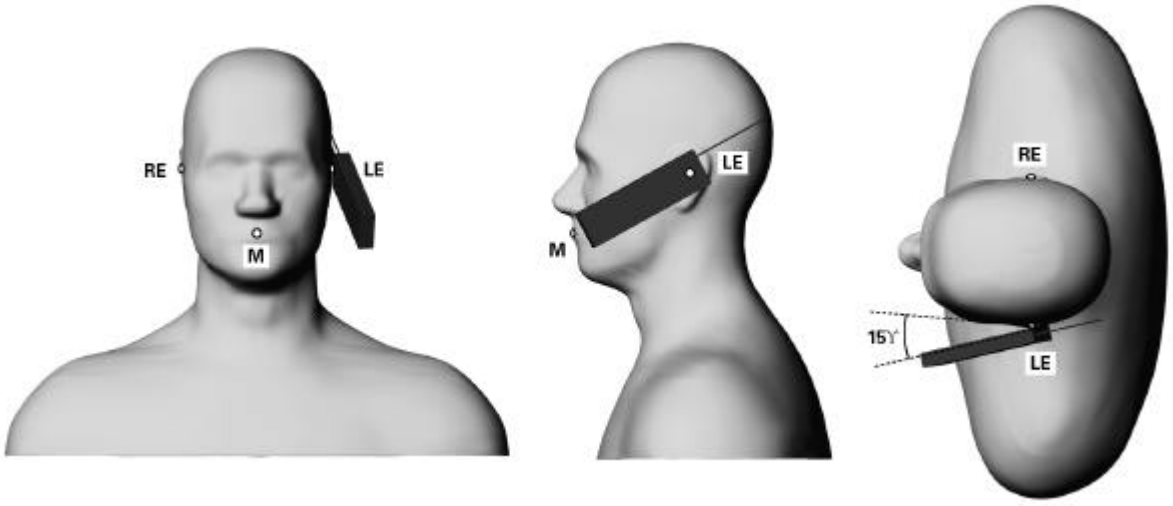
c) While maintaining the three alignments, the body of the handset was gradually adjusted to each of the following test positions:

- Cheek/Touch Position: The handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.



Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

- Ear/Tilt Position: With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.



Phone position 2, "tilted position." The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated (Shoulders are shown for illustration only).

2) The EUT was tested in a body-worn configuration with the device in the clamshell-closed position and the back of the device placed parallel to the outer surface of the planar phantom at a separation distance of 1.5 cm. Both antenna extended and antenna retracted modes were tested. (Note: A body-holster or belt-clip were not available at the time of evaluation)
3) The EUT was tested in a hand-held configuration with the device in the clamshell-open position and the back of the device placed parallel to, and touching, the outer surface of the planar phantom. Both antenna extended and antenna retracted modes were tested.
4) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimize drift. The conducted power levels were checked before and after each test. If the conducted power level deviated more than 5% of the initial power level, then the EUT was retested. Any unusual anomalies over the course of the test also warranted a re-evaluation.
5) The conducted power was measured according to the procedures described in FCC Part 2.1046.
6) The EUT was placed into test mode via keypad access at a full data rate in the "always up" power control mode.
7) The location of the maximum spatial SAR distribution (Hot Spot) was determined relative to the handset and its antenna.
8) The EUT was tested with a fully charged battery.

6.0 EVALUATION PROCEDURES

The Specific Absorption Rate (SAR) evaluation was performed in the following manner:

a. (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation both the left and right ear positions were evaluated at the low, middle, and high frequencies of the band at maximum power, and with the device antenna in both the extended and extracted positions as applicable. The positioning of the ear-held device relative to the phantom was performed in accordance with FCC OET Bulletin 65, Supplement C (Edition 01-01) using the SAM phantom.

(ii) For face-held and body-worn devices a planar phantom was used.

b. The SAR was determined by a pre-defined procedure within the DASY3 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface using a uniform grid spacing.

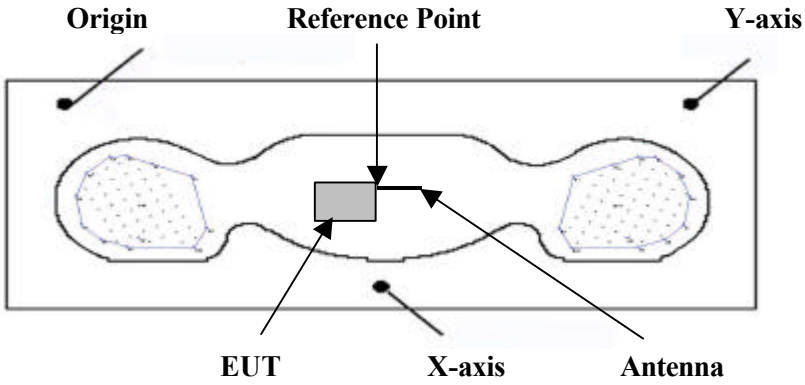
c. A 5x5x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.

d. The depth of the simulating tissue in the phantom used for the system validation and SAR evaluation was no less than 15cm.

e. The E-field probe conversion factors for 835MHz were determined as follows:

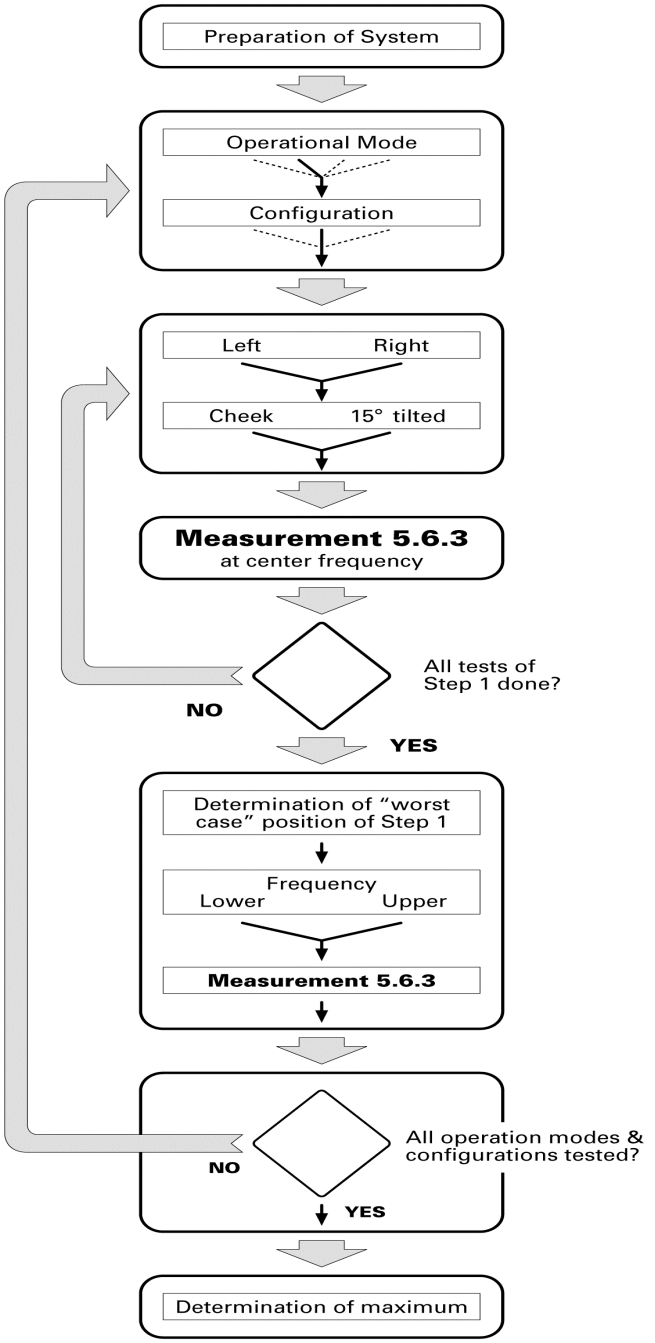
- In brain and muscle tissue between 750MHz and 1GHz, the conversion factor decreases approximately 1.3% per 100MHz frequency increase.
- In brain and muscle tissue between 1.6GHz and 2GHz, the conversion factor decreases approximately 1% per 100MHz frequency increase.

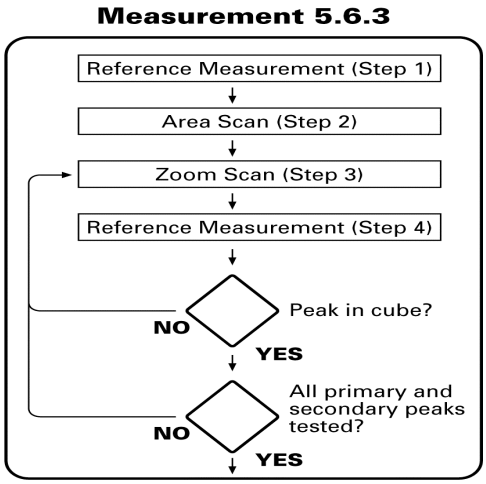
f. The 1800MHz probe conversion factors used for the SAR evaluation were 5.78 for head and 5.36 for body. The manufacturers specified probe conversion factors at 1900MHz are 5.66 and 5.25 for head and body respectively. An evaluation of the highest SAR values for the EUT using 1900MHz probe conversion factors increases the overall SAR for head and body by approximately 2%, which is less than the uncertainty of the probe conversion factors and considerably less then the overall uncertainty of the entire system.



Device Positioning & Reference Point (Body SAR)

EVALUATION PROCEDURES (Cont.)





7.0 SAR SAFETY LIMITS

EXPOSURE LIMITS	SAR (W/Kg)	
	(General Population / Uncontrolled Exposure Environment)	**(Occupational / Controlled Exposure Environment)**
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

8.0 SYSTEM VALIDATION

Prior to the assessment, the system was verified in the planar section of the SAM phantom using a 900MHz and 1800MHz dipole. A forward power of 250mW was applied to the dipole, and the system was verified to a tolerance of ±10%. The applicable verification is as follows (see Appendix B for validation test plots):

Dipole Validation Kit	Target SAR 1g (w/kg)	Measured SAR 1g (w/kg)	Fluid Temperature	Validation Date
D900V2	2.78	2.76	≈23.0 °C	11/22/01
		2.75	≈23.0 °C	11/23/01
D1800V2	9.66	9.65	≈23.0 °C	11/22/01
		9.64	≈23.0 °C	11/23/01

9.0 TISSUE PARAMETERS

The dielectric parameters of the fluids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer. The dielectric parameters of the fluid are shown in the table below. See Appendix D for printout of measured tissue dielectric parameters.

TISSUE PARAMETERS - DIPOLE VALIDATION & EUT EVALUATION			
Equivalent Tissue	**Dielectric Constant e_r**	**Conductivity s (mho/m)**	**r (Kg/m^3)**
900MHz Brain (Target)	41.5 ±5%	0.97 ±5%	1000
900MHz Brain (Validation - Measured: 11/22/01)	40.5	0.97	1000
900MHz Brain (Validation - Measured: 11/23/01)	42.1	0.97	1000
835MHz Brain (Target)	41.5 ±5%	0.90 ±5%	1000
835MHz Brain (Evaluation - Measured: 11/22/01)	41.2	0.90	1000
835MHz Body (Target)	55.2 ±5%	0.97 ±5%	1000
835MHz Body (Evaluation - Measured: 11/23/01)	55.1	0.97	1000
1800MHz Brain (Target)	40.0 ±5%	1.40 ±5%	1000
1800MHz Brain (Validation - Measured: 11/22/01)	40.4	1.40	1000
1800MHz Brain (Validation - Measured: 11/23/01)	40.4	1.40	1000
1800MHz Brain (Evaluation - Measured: 11/22/01)	40.4	1.40	1000
1800MHz Body (Target)	53.3 ±5%	1.52 ±5%	1000
1800MHz Body (Evaluation - Measured: 11/23/01)	53.4	1.52	1000

10.0 SIMULATED TISSUES

The 835MHz and 900MHz brain and body mixtures consist of a viscous gel using hydroxethylcellulose (HEC) gelling agent and saline solution. Preservation with a bactericide is added and visual inspection is made to ensure air bubbles are not trapped during the mixing process. The fluid was prepared according to standardized procedures, and measured for dielectric parameters (permitivity and conductivity).

835MHz & 900MHz TISSUE MIXTURE - DIPOLE VALIDATION & EUT EVALUATION			
INGREDIENT	**900MHz Brain Mixture (Validation)**	**835MHz Brain Mixture (EUT Evaluation)**	**835MHz Body Mixture (EUT Evaluation)**
Water	40.71 %	40.71 %	53.70 %
Sugar	56.63 %	56.63 %	45.10 %
Salt	1.48 %	1.48 %	0.97 %
HEC	1.00 %	1.00 %	0.13%
Bactericide	0.18 %	0.18 %	0.10 %

The 1800MHz brain and body mixtures consist of Glycol-monobutyl, water, and salt. The fluid was prepared according to standardized procedures, and measured for dielectric parameters (permitivity and conductivity).

1800MHz TISSUE MIXTURE - DIPOLE VALIDATION & EUT EVALUATION		
INGREDIENT	**1800MHz Brain Mixture (Validation & EUT Evaluation)**	**1800MHz Body Mixture (EUT Evaluation)**
Water	54.90 %	69.91 %
Glycol Monobutyl	44.92 %	29.96 %
Salt	0.18 %	0.13 %

11.0 ROBOT SYSTEM SPECIFICATIONS

Specifications

POSITIONER:	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability:	0.02 mm
No. of axis:	6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor:	Pentium III
Clock Speed:	450 MHz
Operating System:	Windows NT
Data Card:	DASY3 PC-Board

Data Converter

Features:	Signal Amplifier, multiplexer, A/D converter, and control logic
Software:	DASY3 software
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock

PC Interface Card

Function:	24 bit (64 MHz) DSP for real time processing Link to DAE3 16-bit A/D converter for surface detection system serial link to robot direct emergency stop output for robot

E-Field Probe

Model:	ET3DV6
Serial No.:	1590
Construction:	Triangular core fiber optic detection system
Frequency:	10 MHz to 6 GHz
Linearity:	± 0.2 dB (30 MHz to 3 GHz)

Phantom

Type:	SAM V4.0C
Configuration:	Left Head, Right Head, Planar Section
Shell Material:	Fiberglass
Thickness:	2.0 ±0.1 mm
Volume:	Approx. 20 liters

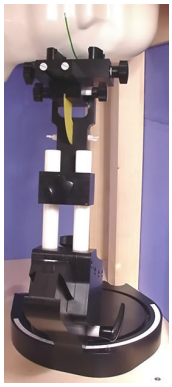
12.0 SAM PHANTOM V4.0C

The SAM phantom V4.0C is a fiberglass shell phantom with a 2.0 mm shell thickness for left and right head and flat planar area integrated in a wooden table. The shape of the fiberglass shell corresponds to the phantom defined by SCC34-SC2. The device holder positions are adjusted to the standard measurement positions in the three sections.

SAM Phantom V4.0C

13.0 DEVICE HOLDER

The DASY3 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.



Device Holder

14.0 PROBE SPECIFICATION (ET3DV6)

Construction:	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g. glycol)
Calibration:	In air from 10 MHz to 2.5 GHz In brain simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy ± 8%)
Frequency:	10 MHz to >6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity:	±0.2 dB in brain tissue (rotation around probe axis) ±0.4 dB in brain tissue (rotation normal to probe axis)
Dynam. Rnge:	5 µW/g to >100 mW/g; Linearity: ±0.2 dB
Srfce. Detect.	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions:	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application:	General dosimetry up to 3 GHz Compliance tests of mobile phone

ET3DV6 E-Field Probe

15.0 TEST EQUIPMENT LIST

SAR MEASUREMENT SYSTEM		
EQUIPMENT	***SERIAL NO.***	***DATE CALIBRATED***
DASY3 System -Robot -ET3DV6 E-Field Probe -900MHz Validation Dipole -1800MHz Validation Dipole -SAM Phantom V4.0C	 599396-01 1590 054 247 N/A	 N/A Mar 2001 June 2001 June 2001 N/A
85070C Dielectric Probe Kit	N/A	N/A
Gigatronics 8652A Power Meter -Power Sensor 80701A -Power Sensor 80701A	1835272 1833535 1833542	Oct 2001 Jan 2001 Feb 2001
E4408B Spectrum Analyzer	US39240170	Nov 2001
8594E Spectrum Analyzer	3543A02721	Mar 2001
8753E Network Analyzer	US38433013	Nov 2001
8648D Signal Generator	3847A00611	Aug 2001
5S1G4 Amplifier Research Power Amplifier	26235	N/A

16.0 MEASUREMENT UNCERTAINTIES

Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	c_i 1g	Standard Uncertainty ±% (1g)	v_i or v_{eff}
Measurement System						
Probe calibration	± 4.4	Normal	1	1	± 4.4	∞
Axial isotropy of the probe	± 4.7	Rectangular	√3	$(1-c_p)$	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	√3	(c_p)	± 3.9	∞
Spatial resolution	± 0.0	Rectangular	√3	1	± 0.0	∞
Boundary effects	± 5.5	Rectangular	√3	1	± 3.2	∞
Probe linearity	± 4.7	Rectangular	√3	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	√3	1	± 0.6	∞
Readout electronics	± 1.0	Normal	1	1	± 1.0	∞
Response time	± 0.8	Rectangular	√3	1	± 0.5	∞
Integration time	± 1.4	Rectangular	√3	1	± 0.8	∞
RF ambient conditions	± 3.0	Rectangular	√3	1	± 1.7	∞
Mech. constraints of robot	± 0.4	Rectangular	√3	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	√3	1	± 1.7	∞
Extrap. & integration	± 3.9	Rectangular	√3	1	± 2.3	∞
Test Sample Related						
Device positioning	± 6.0	Normal	0.89	1	± 6.7	12
Device holder uncertainty	± 5.0	Normal	0.84	1	± 5.9	8
Power drift	± 5.0	Rectangular	√3		± 2.9	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	√3	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid conductivity (measured)	± 10.0	Rectangular	√3	0.6	± 3.5	∞
Liquid permittivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (measured)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Combined Standard Uncertainty					± 13.6	
Extended Standard Uncertainty (k=2)					**± 27.1**	

17.0 REFERENCES

[1] ANSI, *ANSI/IEEE C95.1: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 Ghz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY: 1992.*

[2] Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.

[3] Thomas Schmid, Oliver Egger, and Neils Kuster, "Automated E-field scanning system for dosimetric assessments", IEEE *Transaction on Microwave Theory and Techniques,* Vol. 44, pp. 105 – 113: January 1996.

[4] Niels Kuster, Ralph Kastle, and Thomas Schmid, "Dosimetric evaluation of mobile communications equipment with know precision", IEICE Transactions of Communications, vol. E80-B, no. 5, pp. 645 – 652: May 1997.

[5] IEEE Standards Coordinating Committee 34, DRAFT Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques: Draft 6.1, November 2000.

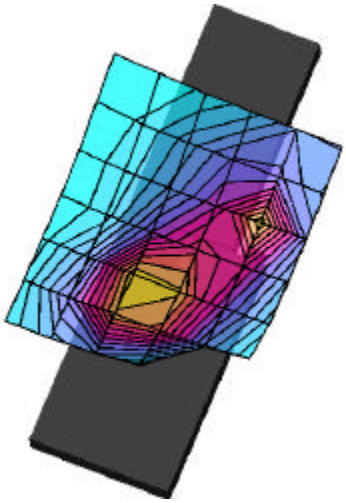
APPENDIX A - SAR MEASUREMENT DATA

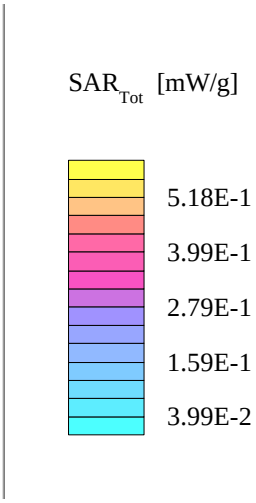
1900MHz PCS CDMA SAR TEST PLOTS - LEFT EAR

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.07dB
SAR (1g): 0.587 mW/g, SAR (10g): 0.360 mW/g

Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.51 dBm
Date Tested: Nov. 22, 2001

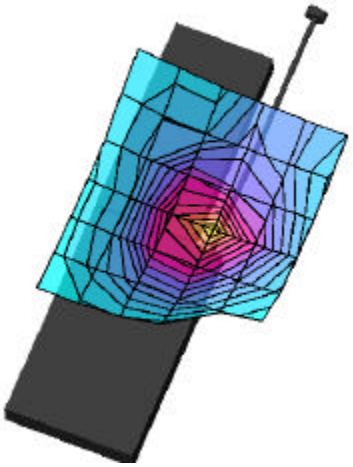


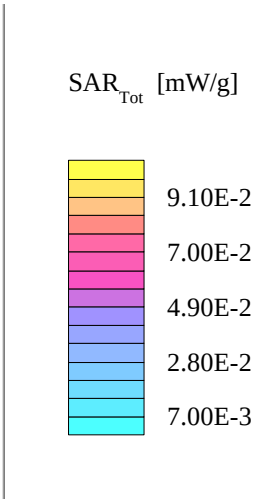


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.03 dB
SAR (1g): 0.0920 mW/g, SAR (10g): 0.0546 mW/g

Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.51 dBm
Date Tested: Nov. 22, 2001

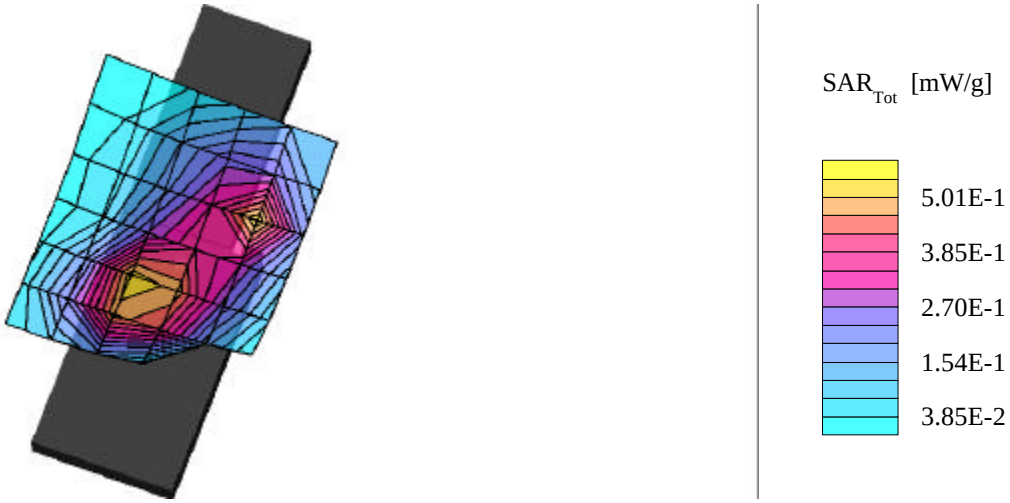




Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.16 dB
SAR (1g): 0.526 mW/g, SAR (10g): 0.319 mW/g

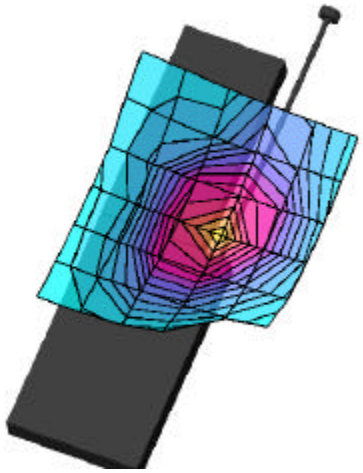
Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.54 dBm
Date Tested: Nov. 22, 2001

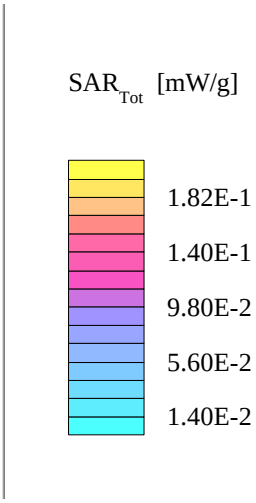


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.20 dB
SAR (1g): 0.195 mW/g, SAR (10g): 0.114 mW/g

Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.55 dBm
Date Tested: Nov. 22, 2001

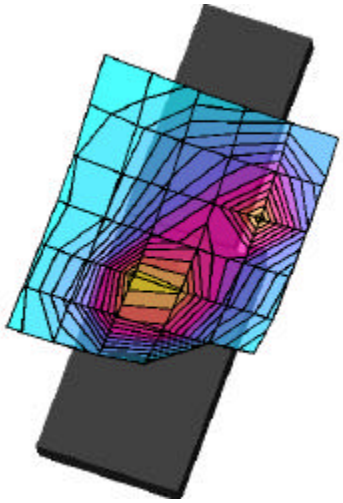


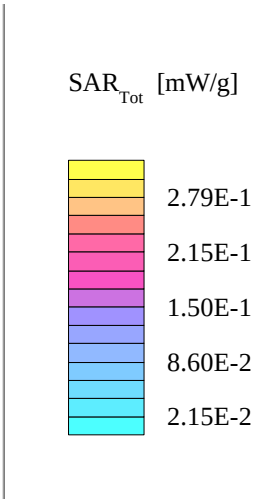


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.18 dB
SAR (1g): 0.303 mW/g, SAR (10g): 0.181 mW/g

Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.51 dBm
Date Tested: Nov. 22, 2001

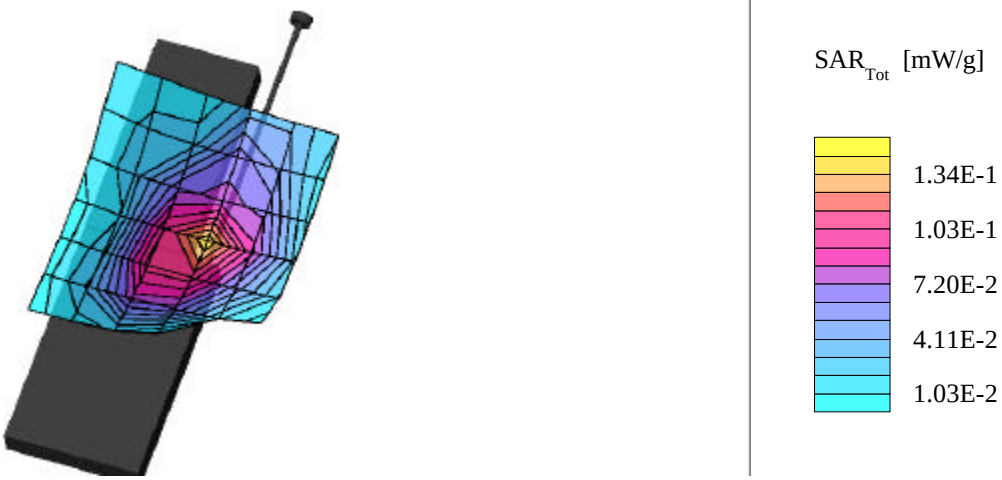




Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.19 dB
SAR (1g): 0.131 mW/g, SAR (10g): 0.0780 mW/g

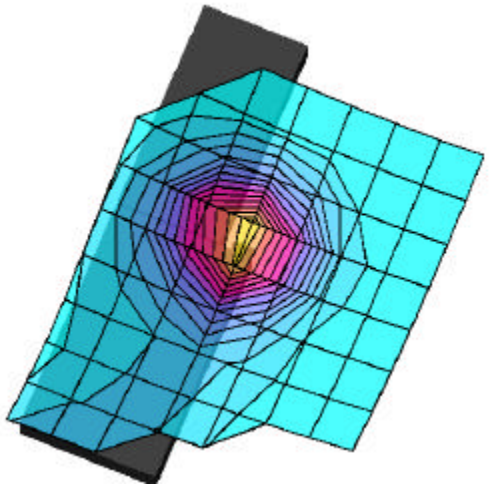
Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.54 dBm
Date Tested: Nov. 22, 2001

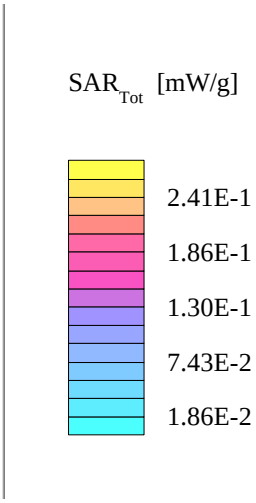


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (85°,65°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.11 dB
SAR (1g): 0.251 mW/g, SAR (10g): 0.148 mW/g

Head SAR - Left Ear/Tilt Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.56 dBm
Date Tested: Nov. 22, 2001

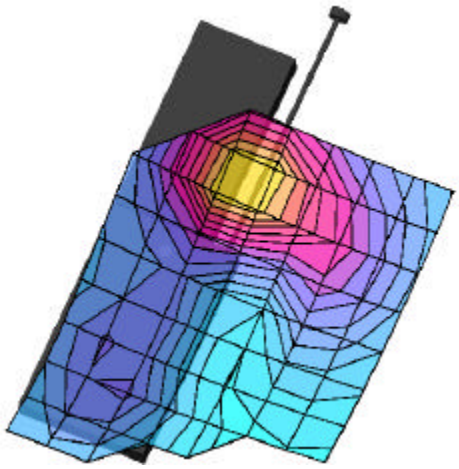


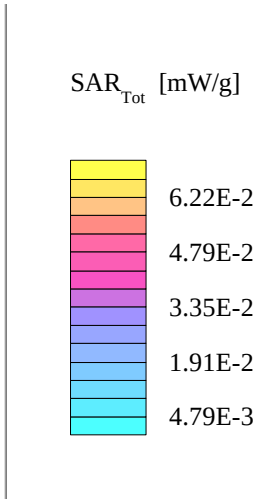


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (85°,65°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.14 dB
SAR (1g): 0.0639 mW/g, SAR (10g): 0.0386 mW/g

Head SAR - Left Ear/Tilt Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.57 dBm
Date Tested: Nov. 22, 2001



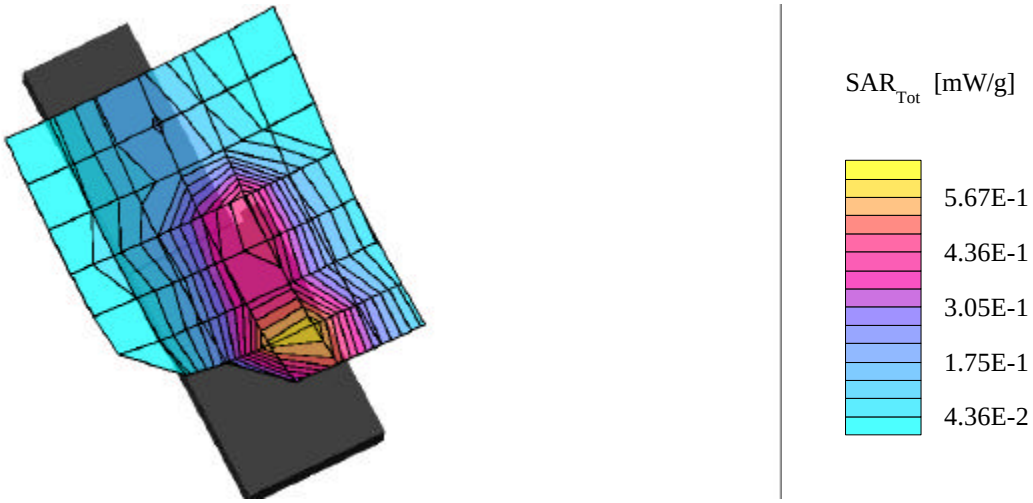


1900MHz PCS CDMA SAR TEST PLOTS - RIGHT EAR

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.20 dB
SAR (1g): 0.583 mW/g, SAR (10g): 0.368 mW/g

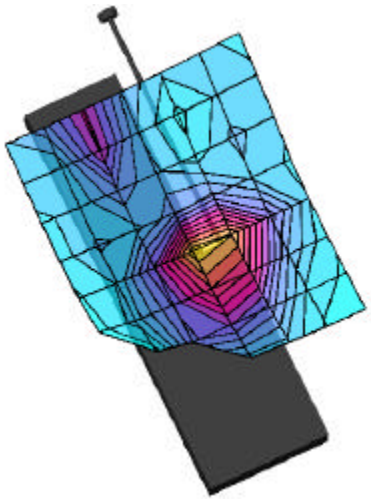
Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.52 dBm
Date Tested: Nov. 22, 2001

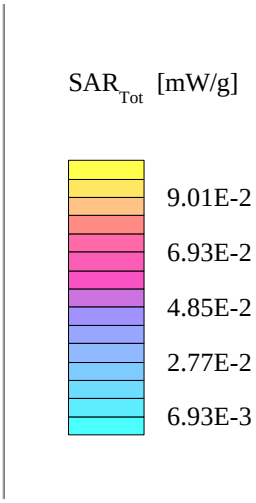


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (72°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.06dB
SAR (1g): 0.0929 mW/g, SAR (10g): 0.0551 mW/g

Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 25 [1851.25 MHz]
Conducted Power: 24.55 dBm
Date Tested: Nov. 22, 2001

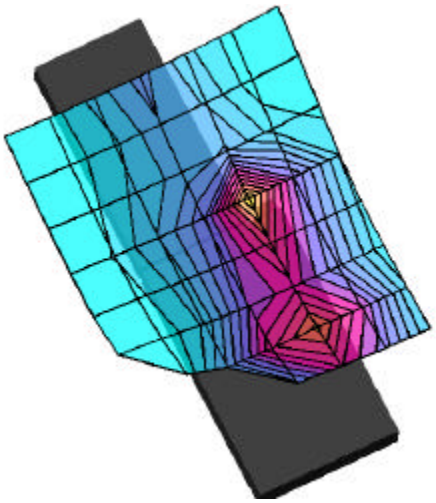


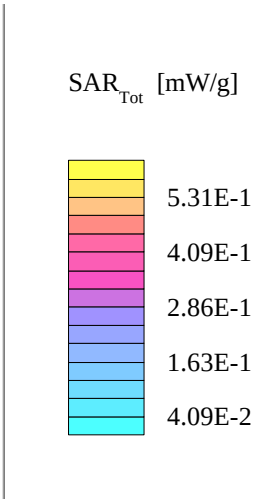


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.10 dB
SAR (1g): 0.501 mW/g, SAR (10g): 0.268 mW/g

Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.55 dBm
Date Tested: Nov. 22, 2001

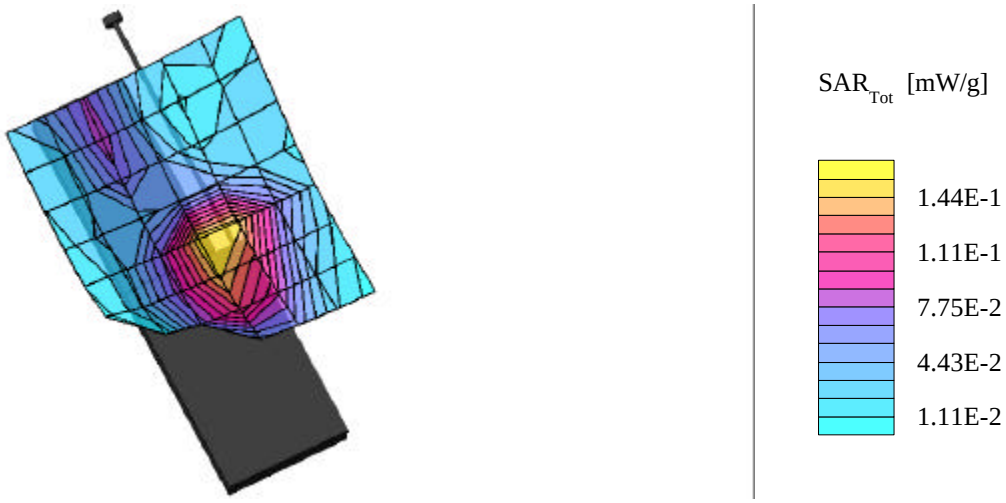




Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (72°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.05 dB
SAR (1g): 0.155 mW/g, SAR (10g): 0.0916 mW/g

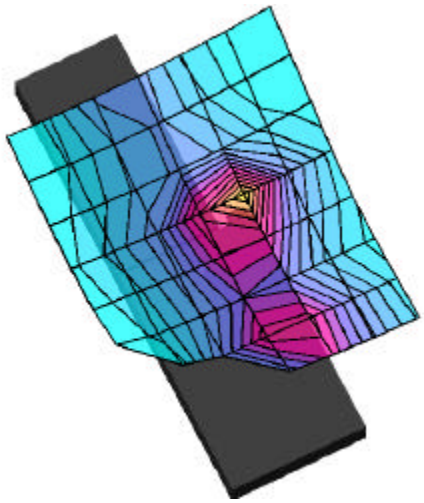
Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.59 dBm
Date Tested: Nov. 22, 2001

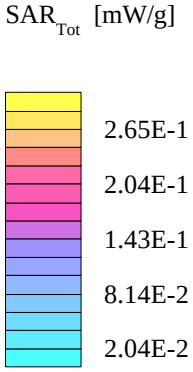


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.17 dB
SAR (1g): 0.262 mW/g, SAR (10g): 0.139 mW/g

Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.50 dBm
Date Tested: Nov. 22, 2001

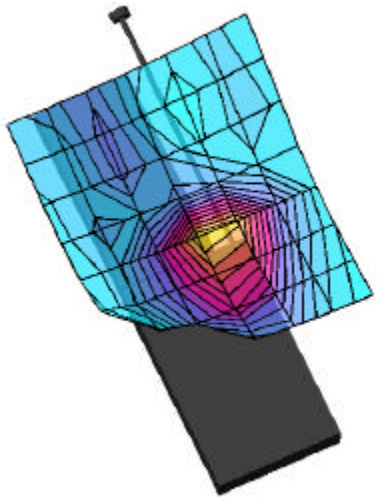


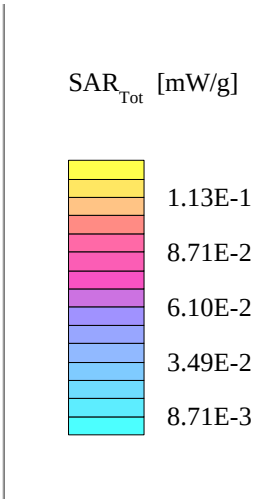


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (72°,230°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.08dB
SAR (1g): 0.125 mW/g, SAR (10g): 0.0715 mW/g

Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 1175 [1908.75 MHz]
Conducted Power: 24.57 dBm
Date Tested: Nov. 22, 2001

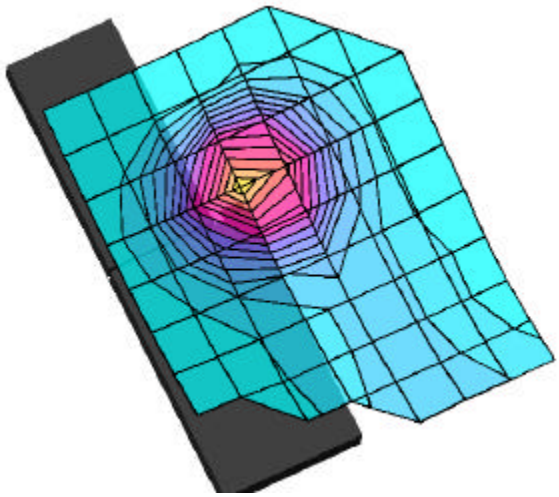


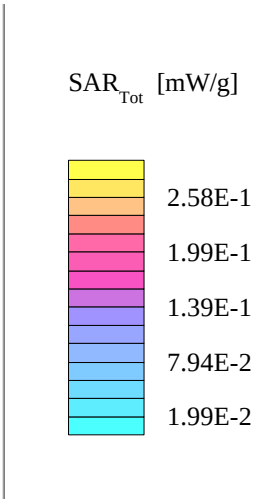


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (85°,295°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.09 dB
SAR (1g): 0.243 mW/g, SAR (10g): 0.145 mW/g

Head SAR - Right Ear/Tilt Position
Antenna In
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.56 dBm
Date Tested: Nov. 22, 2001

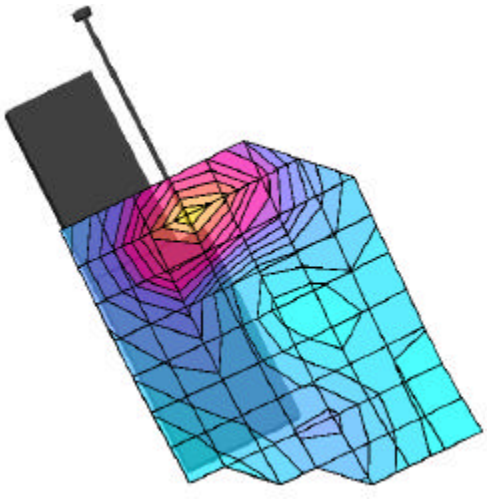


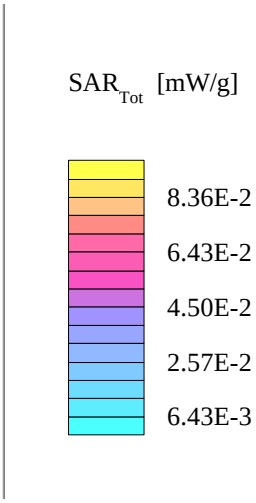


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (85°,295°)
Probe: ET3DV6 - SN1590; ConvF(5.78,5.78,5.78); Crest factor: 1.0
1800 MHz Brain: σ = 1.40 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.24 dB
SAR (1g): 0.0810 mW/g, SAR (10g): 0.0484 mW/g

Head SAR - Right Ear/Tilt Position
Antenna Out
Withus Model: WPE-2000
PCS CDMA Mode
Channel 600 [1880.00 MHz]
Conducted Power: 24.58 dBm
Date Tested: Nov. 22, 2001



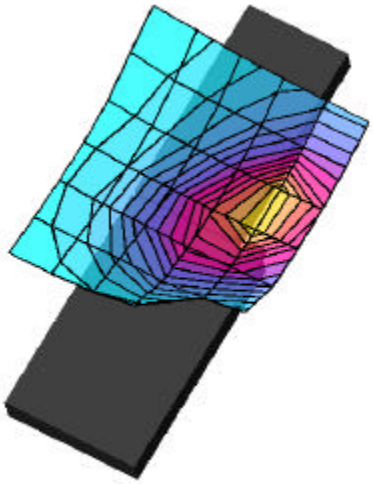


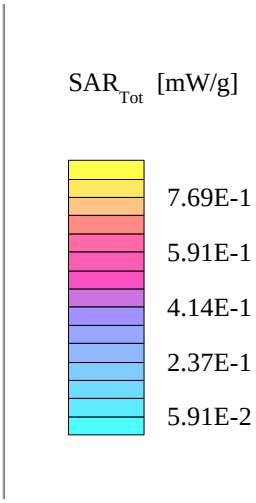
800MHz CELLULAR CDMA SAR TEST PLOTS - LEFT EAR

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.08 dB
SAR (1g): 0.805 mW/g, SAR (10g): 0.541 mW/g

Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 1013 [824.70 MHz]
Conducted Power: 24.07 dBm
Date Tested: Nov. 22, 2001

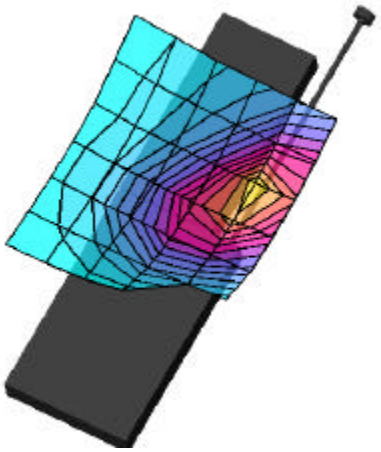


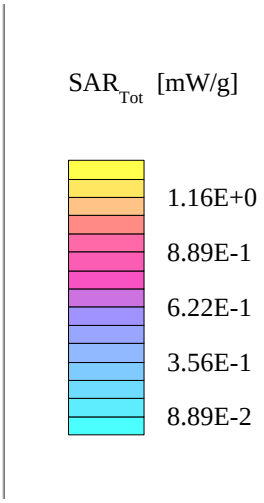


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.02dB
SAR (1g): 1.18 mW/g, SAR (10g): 0.792 mW/g

Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 1013 [824.70 MHz]
Conducted Power: 24.06 dBm
Date Tested: Nov. 22, 2001





Withus IT Co., Ltd. FCC ID: POQWPE-2000

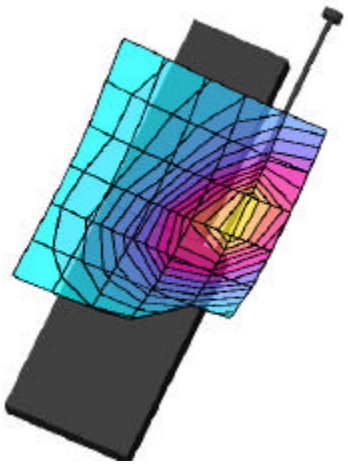
SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.13dB
SAR (1g): 0.848 mW/g, SAR (10g): 0.569 mW/g

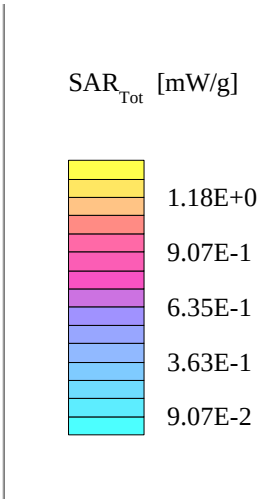
Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.03 dBm
Date Tested: Nov. 22, 2001

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.06 dB
SAR (1g): 1.19 mW/g, SAR (10g): 0.802 mW/g

Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.03 dBm
Date Tested: Nov. 22, 2001





Withus IT Co., Ltd. FCC ID: POQWPE-2000

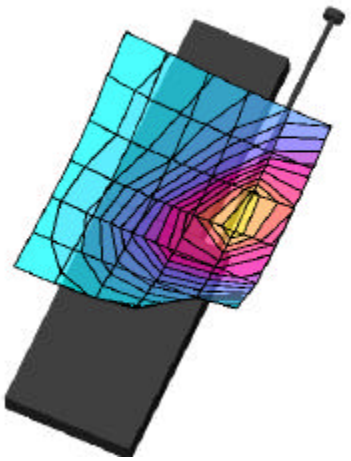
SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.01 dB
SAR (1g): 0.956 mW/g, SAR (10g): 0.641 mW/g

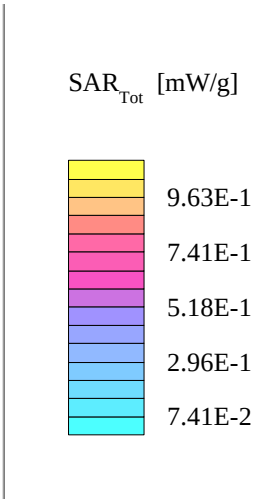
Head SAR - Left Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 777 [848.31 MHz]
Conducted Power: 24.08 dBm
Date Tested: Nov. 22, 2001

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (72°,180°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.11 dB
SAR (1g): 0.989 mW/g, SAR (10g): 0.669 mW/g

Head SAR - Left Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 777 [848.31 MHz]
Conducted Power: 24.00 dBm
Date Tested: Nov. 22, 2001

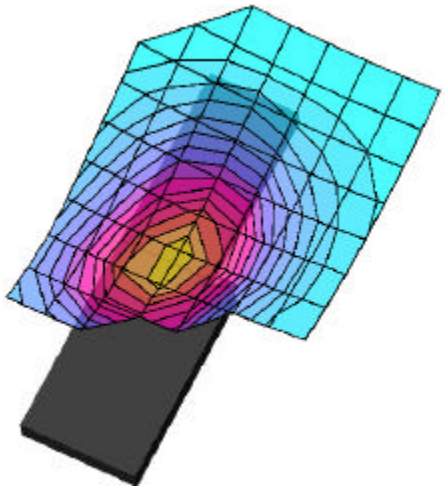


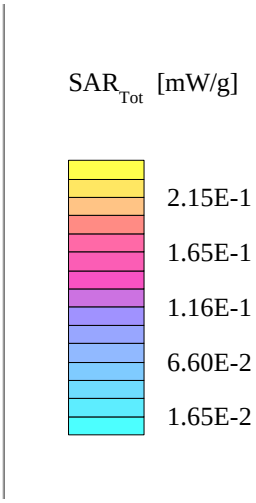


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (85°,65°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.09dB
SAR (1g): 0.227 mW/g, SAR (10g): 0.164 mW/g

Head SAR - Left Ear/Tilt Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.03 dBm
Date Tested: Nov. 22, 2001

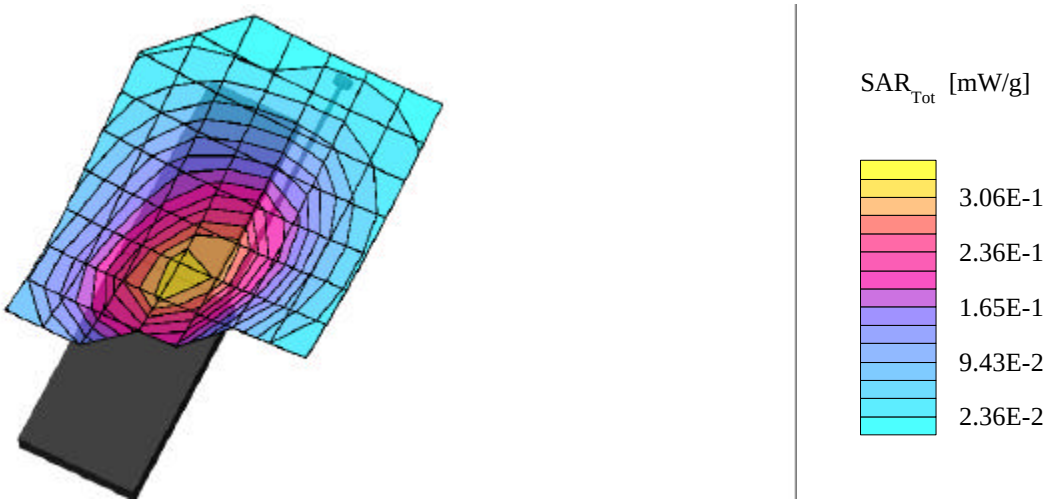




Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Left Hand Section; Position: (85°,65°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.01 dB
SAR (1g): 0.316 mW/g, SAR (10g): 0.225 mW/g

Head SAR - Left Ear/Tilt Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.02 dBm
Date Tested: Nov. 22, 2001

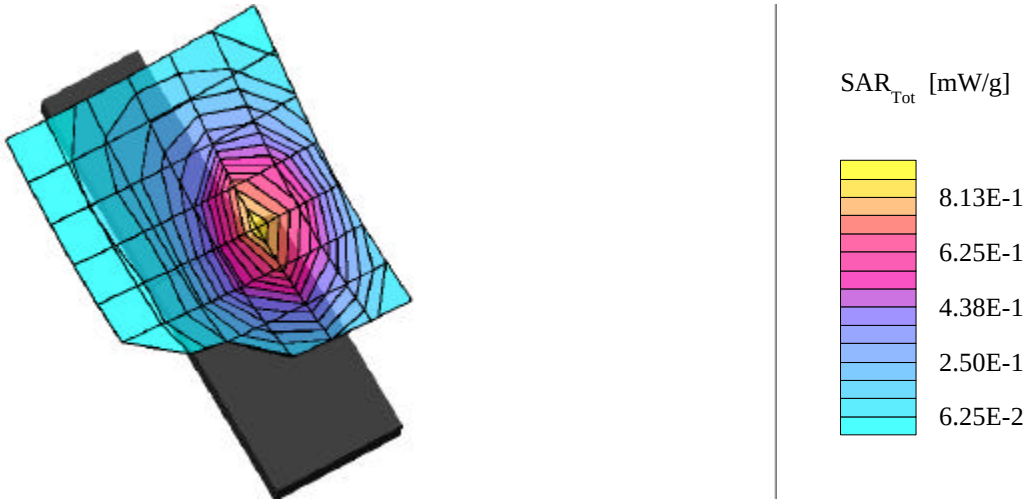


800MHz CELLULAR CDMA SAR TEST PLOTS - RIGHT EAR

Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.08 dB
SAR (1g): 0.808 mW/g, SAR (10g): 0.538 mW/g

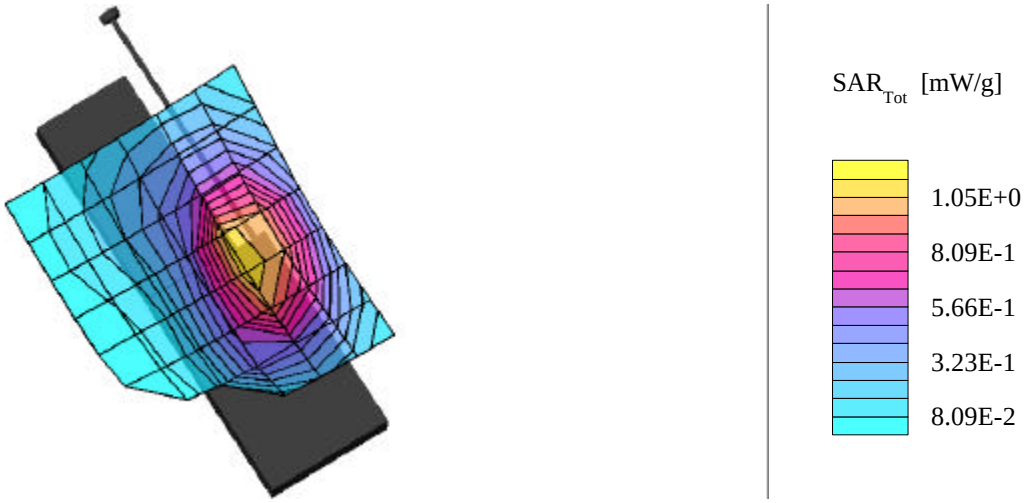
Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 1013 [824.70 MHz]
Conducted Power: 24.02 dBm
Date Tested: Nov. 22, 2001



Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.10 dB
SAR (1g): 1.18 mW/g, SAR (10g): 0.791 mW/g

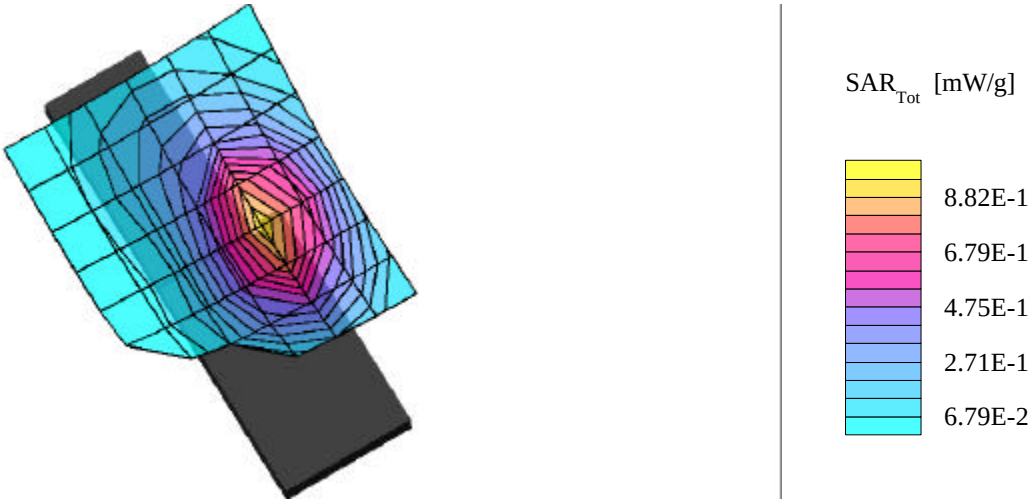
Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 1013 [824.70 MHz]
Conducted Power: 24.00 dBm
Date Tested: Nov. 22, 2001



Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.00 dB
SAR (1g): 0.877 mW/g, SAR (10g): 0.583 mW/g

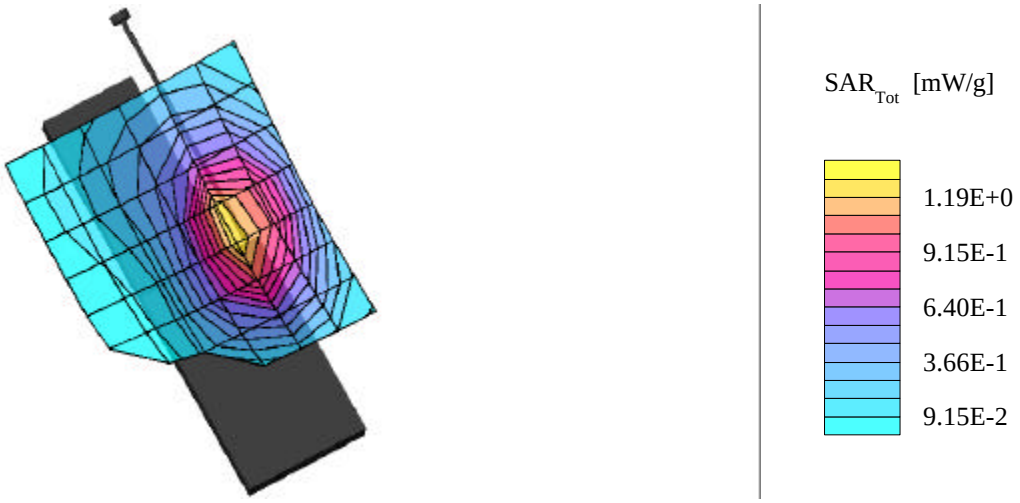
Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.00 dBm
Date Tested: Nov. 22, 2001



Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (72°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.07 dB
SAR (1g): 1.21 mW/g, SAR (10g): 0.806 mW/g

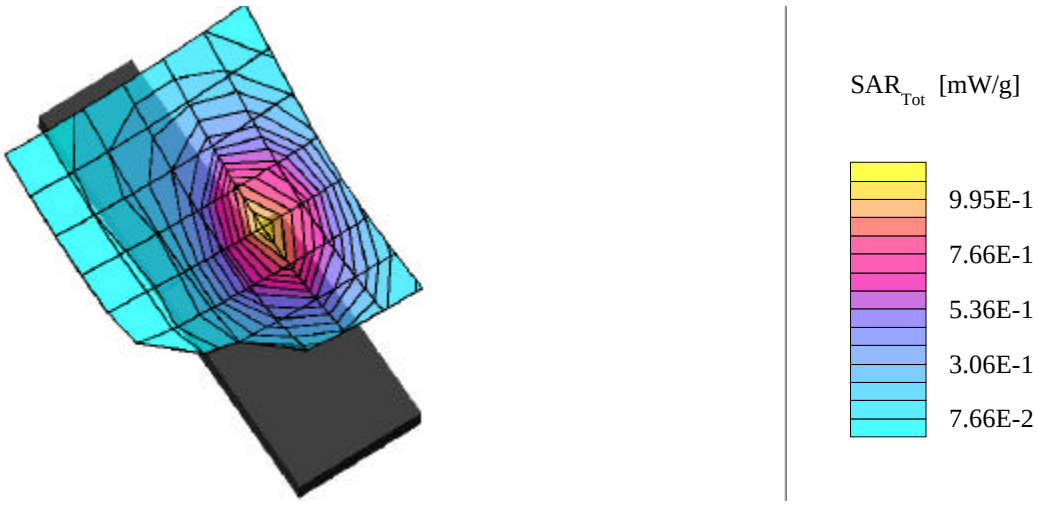
Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.00 dBm
Date Tested: Nov. 22, 2001



Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (70°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.03 dB
SAR (1g): 0.967 mW/g, SAR (10g): 0.636 mW/g

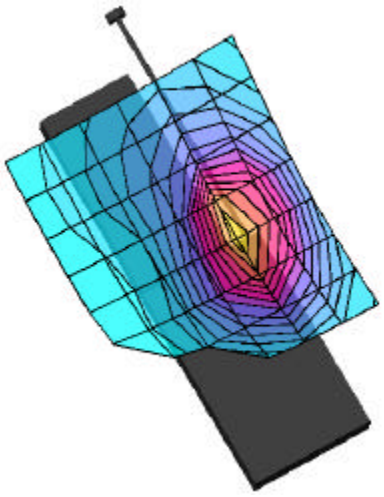
Head SAR - Right Cheek/Touch Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 777 [848.31 MHz]
Conducted Power: 24.08 dBm
Date Tested: Nov. 22, 2001

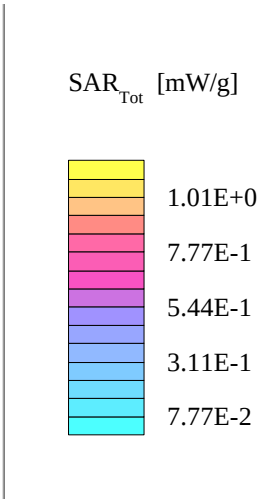


Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (72°,230°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.16dB
SAR (1g): 1.02 mW/g, SAR (10g): 0.672 mW/g

Head SAR - Right Cheek/Touch Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 777 [848.31 MHz]
Conducted Power: 24.01 dBm
Date Tested: Nov. 22, 2001

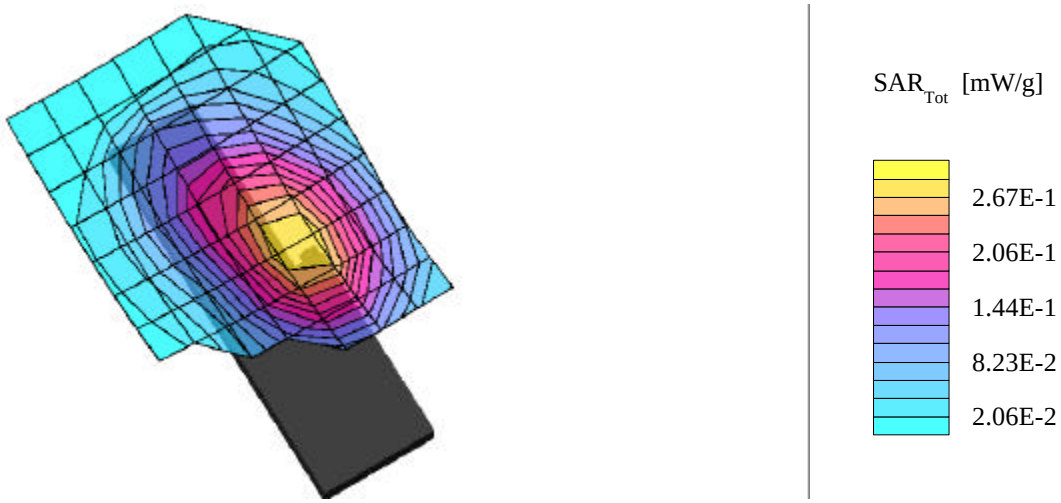




Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (85°,295°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: 0.01 dB
SAR (1g): 0.284 mW/g, SAR (10g): 0.204 mW/g

Head SAR - Right Ear/Tilt Position
Antenna In
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.03 dBm
Date Tested: Nov. 22, 2001



Withus IT Co., Ltd. FCC ID: POQWPE-2000

SAM Phantom; Right Hand Section; Position: (85°,295°)
Probe: ET3DV6 - SN1590; ConvF(6.91,6.91,6.91); Crest factor: 1.0
835 MHz Brain: σ = 0.90 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7 Powerdrift: -0.11 dB
SAR (1g): 0.385 mW/g, SAR (10g): 0.279 mW/g

Head SAR - Right Ear/Tilt Position
Antenna Out
Withus Model: WPE-2000
CDMA Mode
Channel 363 [835.89 MHz]
Conducted Power: 24.04 dBm
Date Tested: Nov. 22, 2001