






	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

Test Lab Certificate No. 2470.01

## SAR TEST REPORT (FCC/IC)

RF EXPOSURE EVALUATION		SPECIFIC ABSORPTION RATE	
APPLICANT	PRO TECH MONITORING, INC.		
DEVICE UNDER TEST (DUT)	DUAL-BAND GSM/GPRS ANKLE-WORN TRACKING DEVICE		
DEVICE MODEL(S)	WMTD3000		
DEVICE IDENTIFIER(S)	FCC ID: NC3WMTD3000		
INTERNAL TRANSMITTER(S)	ENFORA Model: GSM0108 Dual-Band GSM/GPRS Module		
APPLICATION TYPE	Certification		
STANDARD(S) APPLIED	FCC 47 CFR §2.1093		
	Health Canada Safety Code 6		
PROCEDURE(S) APPLIED	FCC OET Bulletin 65, Supplement C (01-01)		
	Industry Canada RSS-102 Issue 2		
FCC DEVICE CLASSIFICATION(S)	PCS Licensed Transmitter (PCB)	47 CFR §24 (E)	
IC DEVICE CLASSIFICATION(S)	2 GHz Personal Communication Services	RSS-133 Issue 3	
	800 MHz Cellular Telephones Employing New Technologies	RSS-132 Issue 2	
RF EXPOSURE CATEGORY	General Population / Uncontrolled		
RF EXPOSURE EVALUATION(S)	Ankle-worn (Extremity)	Primary Test Configuration	
	Body (Bystander)	Secondary Test Configuration	
TEST REPORT SERIAL NO.	031008NC3-T888-S24G		
TEST REPORT REVISION NO.	Revision 1.2	2 <sup>nd</sup> FCC ID Revision	May 16, 2008
	Revision 1.1	FCC ID Revision	April 09, 2008
	Revision 1.0	Initial Release	March 18, 2008
TEST REPORT SIGNATORIES	Testing Performed By		Test Report Prepared By
	Sean Johnston Celltech Labs Inc.		Jonathan Hughes Celltech Labs Inc.
TEST LAB AND LOCATION	Celltech Compliance Testing and Engineering Lab		
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	info@celltechlabs.com		www.celltechlabs.com
TEST LAB ACCREDITATION(S)	<div></div> <div>Test Lab Certificate No. 2470.01</div>		

Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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## DECLARATION OF COMPLIANCE SAR RF EXPOSURE EVALUATION

Test Lab Information	Name	CELLTECH LABS INC.	Address	21-364 Lougheed Road, Kelowna B.C. V1X 7R8 Canada			
Applicant Information	Name	PRO TECH MONITORING, INC.	Address	2549 Success Drive, Odessa, Florida 33556 USA			
Standard(s) Applied	FCC	47 CFR §2.1093	IC	Health Canada Safety Code 6			
Procedure(s) Applied	FCC	OET Bulletin 65, Supplement C (01-01)		Note: At this time there are no standardized SAR test procedures for evaluating the extremities; therefore the test procedures for body-worn devices were implemented.			
	IC	RSS-102 Issue 2					
Device Classification(s)	FCC	PCS Licensed Transmitter (PCB)			47 CFR §24(E)		
	IC	2 GHz Personal Communication Services			RSS-133 Issue 3		
		800 MHz Cellular Telephones Employing New Technologies			RSS-132 Issue 2		
RF Exposure Category	Portable	General Population / Uncontrolled Exposure					
Device Identifier(s)	FCC ID:	NC3WMTD3000		Application	Certification		
Device Description	Dual-Band GSM/GPRS Ankle-worn Tracking Device			Protocol	GSM/GPRS Release 97 and 99 (SMG 31)		
Device Model(s)	WMTD3000			Serial No.	34000260	Test Sample	
Transmit Frequency Range(s)	1850.2 - 1909.8 MHz			PCS GSM/GPRS			
	824.2 - 848.8 MHz			Cellular GSM/GPRS			
Max. RF Output Power Tested	Band	GSM Power Class	Frequency	Channel	dBm	Watts	Measurement
		1	1850.2 MHz	512	29.4	0.871	Average Conducted
	PCS	1	1880.0 MHz	661	29.8	0.955	Average Conducted
		1	1909.8 MHz	810	28.8	0.759	Average Conducted
	Cellular	4	824.2 MHz	128	32.8	1.91	Average Conducted
		4	836.6 MHz	190	32.6	1.82	Average Conducted
		4	848.8 MHz	251	32.7	1.86	Average Conducted
Data Transmission Type	GPRS Class B		Multislot Class 10		Two Uplink Slots		
Max. Duty Cycle(s) Tested	24%	GPRS	Source-Based Time-Averaged		Crest Factor: 1:4.16		
	12%	GSM	Source-Based Time-Averaged		Crest Factor: 1:8.3		
Antenna Type(s) Tested	Internal						
Power Source(s) Tested	Lithium-ion Battery	3.7V		2200mAh		P/N: 31113331	
Body-Worn Accessories Tested	None						
Audio Accessories Tested	None (not applicable)						
Max. SAR Level(s) Evaluated (Primary Test Configuration)	Ankle-worn	0.124 W/kg	10g average	PCS Band	FCC/IC SAR Limit	4.0 W/kg	10g average
		0.039 W/kg	10g average	Cellular Band	FCC/IC SAR Limit	4.0 W/kg	10g average

Celltech Labs Inc. declares under its sole responsibility that this wireless device was compliant with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC 47 CFR §2.1093 and Health Canada's Safety Code 6 for the General Population / Uncontrolled Exposure environment. The device was tested in accordance with the measurement procedures specified in FCC OET Bulletin 65, Supplement C (Edition 01-01) and Industry Canada RSS-102 Issue 2 (based on the body-worn SAR testing procedures). All measurements were performed in accordance with the SAR system manufacturer recommendations.


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.

The results and statements contained in this report pertain only to the device(s) evaluated.

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**Test Report Approved By:**  **Sean Johnston** **Celltech Labs Inc.**



Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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 Testing and Engineering Services Ltd.	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	  Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

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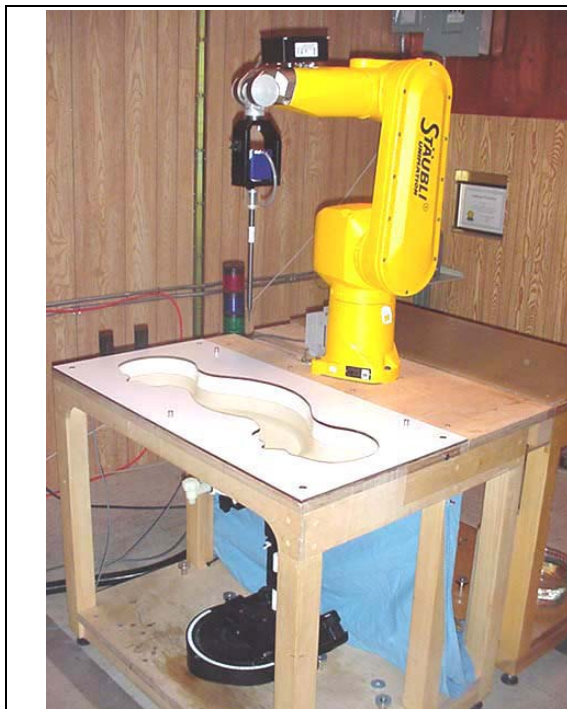
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## 1.0 INTRODUCTION

This measurement report demonstrates that the Pro Tech Monitoring, Inc. Model: WMTD3000 Portable Dual-Band GSM/GPRS Ankle-worn Tracking Device complies with the SAR (Specific Absorption Rate) RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) and Health Canada's Safety Code 6 (see reference [2]) for the General Population / Uncontrolled Exposure environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 (see reference [3]) and IC RSS-102 Issue 2 (see reference [4]) 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 SAR MEASUREMENT SYSTEM


Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 measurement system is comprised of the measurement server, robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for brain and/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 DASY4 measurement server. The DAE4 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 DASY4 measurement server 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. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.






**DASY4 System with SAM Twin Phantom V4.0C**



**DASY4 Measurement Server**


Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
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### 3.0 MEASUREMENT SUMMARY

SAR EVALUATION RESULTS																
Test Date	Band	Freq.	Ch.	Test Mode	Uplink Slots	Duty Cycle	Crest Factor	Battery Type	DUT Position to Planar Phantom	Conducted Power Before Test	SAR Drift During Test	Measured SAR Levels				
		MHz								dBm	dB	W/kg	Av.	Type		
Mar 11	Cellular	824.2	128	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	32.8	0.031	0.039	10g	Ankle		
Mar 11	Cellular	836.6	190	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	32.6	0.109	0.038	10g	Ankle		
Mar 11	Cellular	848.8	251	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	32.7	0.048	0.039	10g	Ankle		
Mar 11	Cellular	824.2	128	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	32.8	0.239	0.153	1g	Body		
Mar 11	Cellular	836.6	190	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	32.6	-0.038	0.111	1g	Body		
Mar 11	Cellular	848.8	251	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	32.7	-0.025	0.194	1g	Body		
Mar 11	Cellular	836.6	251	GSM	1	12%	1:8.3	Li-ion	Outer Edge Touch	32.6	-0.007	0.102	1g	Body		
Mar 10	PCS	1850.2	512	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	29.4	-0.060	0.077	10g	Ankle		
Mar 10	PCS	1880.0	661	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	29.8	0.028	0.124	10g	Ankle		
Mar 10	PCS	1908.8	810	GPRS	2	24%	1:4.16	Li-ion	Inner Edge Touch	28.8	-0.027	0.104	10g	Ankle		
Mar 10	PCS	1850.2	512	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	29.4	-0.035	1.02	1g	Body		
Mar 10	PCS	1880.0	661	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	29.8	0.054	0.782	1g	Body		
Mar 10	PCS	1908.8	810	GPRS	2	24%	1:4.16	Li-ion	Outer Edge Touch	28.8	-0.165	0.689	1g	Body		
Mar 10	PCS	1880.0	661	GSM	1	12%	1:8.3	Li-ion	Outer Edge Touch	29.4	-0.082	0.538	1g	Body		
SAR SAFETY LIMIT(S)						ANKLE		SPATIAL PEAK		BODY		SPATIAL PEAK		RF EXPOSURE CATEGORY		
FCC 47 CFR 2.1093		Health Canada Safety Code 6				4.0 W/kg		10g average		1.6 W/kg		1g average		General Population / Uncontrolled		
Test Date(s)		March 11, 2008				March 10, 2008				Test Date		Mar 11		Mar 10		Unit
Dielectric Constant ε <sub>r</sub>		835 MHz Body				1880 MHz Body				Relative Humidity		35		35		%
		IEEE Target		Meas.	Dev.	IEEE Target		Meas.	Dev.	Atmospheric Pressure		101.1		101.1		kPa
		55.2	± 5%	56.9	+3.1%	53.3	± 5%	51.7	-3.0%	Ambient Temperature		24.1		24.3		°C
Conductivity σ (mho/m)		835 MHz Body				1880 MHz Body				Fluid Temperature		23.0		23.5		°C
		IEEE Target		Meas.	Dev.	IEEE Target		Meas.	Dev.	Fluid Depth		≥ 15		≥ 15		cm
		0.97	± 5%	0.96	-1.0%	1.52	± 5%	1.47	-3.2%	ρ (Kg/m <sup>3</sup> )		1000				
Notes																
1.	The measurement results were obtained with the DUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.															
2.	Currently there are no standardized SAR test procedures for evaluating the extremities; therefore the test procedures for body-worn devices were implemented (in accordance with FCC OET Bulletin 65, Supplement C (01/01) and IC RSS-102 Issue 2).															
3.	Ankle-worn SAR evaluations were performed on the inner edge of the DUT in a User configuration and the levels are reported as the primary SAR results.															
4.	Body SAR evaluations were performed on the outer edge of the DUT in a Bystander configuration and the levels are reported as secondary SAR results.															
5.	The DUT battery was fully charged prior to the SAR evaluations.															
6.	The power drifts of the DUT measured by the DASY4 system during the SAR evaluations were within 5% from the start power.															
7.	The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.															
8.	The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using an HP 85070C Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C).															
9.	The SAR evaluations were performed within 24 hours of the system performance check.															

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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## 4.0 DETAILS OF SAR EVALUATION

The Pro Tech Monitoring, Inc. Dual-Band GSM/GPRS Ankle-worn Tracking Device Model: WMTD3000 was compliant for localized Specific Absorption Rate (Uncontrolled Exposure) based on the test provisions and conditions described below. The detailed test setup photographs are shown in Appendix D.

### Test Configuration(s)

- The DUT was tested for ankle-worn SAR (User configuration - primary evaluation) with the inner edge of the device placed parallel to, and touching, the outer surface of the SAM phantom (planar section).
- The DUT was tested for body SAR (Bystander configuration - secondary evaluation) with the outer edge of the device placed parallel to, and touching, the outer surface of the SAM phantom (planar section).

### Power Level(s) & Test Mode(s)


- The conducted output power levels of the DUT were measured at the internal antenna prior to the SAR evaluations using a universal power meter in accordance with the procedures described in FCC 47 CFR §2.1046 and IC RSS-Gen.
- The power drift of the DUT during the SAR evaluations was measured by the DASY4 system.
- The SAR evaluations were performed with an air-link communication established between the DUT and an Anritsu MT8820A Radio Communication Analyzer. The DUT was transmitting at maximum power in 1 time slot (12% duty cycle) for GSM mode (crest factor: 8.3), and in 2 time slots (24% duty cycle) for GPRS mode (Crest factor: 4.16).



### Test Conditions

- The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within  $\pm 2^{\circ}\text{C}$  of the fluid temperature reported during the dielectric parameter measurements.
- The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using an HP 85070C Dielectric Probe Kit and HP 8753ET Network Analyzer (see Appendix C).

## 5.0 EVALUATION PROCEDURES

- 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 using the SAM phantom.
  - For body-worn and face-held devices a planar phantom was used.
- The SAR was determined by a pre-defined procedure within the DASY4 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 15mm x 15mm.  
An area scan was determined as follows:
- Based on the defined area scan grid, a more detailed grid is created to increase the points by a factor of 10. The interpolation function then evaluates all field values between corresponding measurement points.
- A linear search is applied to find all the candidate maxima. Subsequently, all maxima are removed that are  $>2$  dB from the global maximum. The remaining maxima are then used to position the cube scans.  
A 1g and 10g spatial peak SAR was determined as follows:
- Extrapolation is used to determine the values between the dipole center of the probe and the surface of the phantom. For E-Field Probe EX3DV4 this data cannot be measured because the center of the dipole sensors is 1.0 mm away from the probe tip and the distance between the probe and the boundary must be larger than 25% of the probe diameter. The probe diameter is 2.4 mm (see probe calibration document in Appendix F). In the DASY4 software, the distance between the sensor center and phantom surface is set to 2.0 mm. This provides a distance of 1.0 mm between the probe tip and the surface. For E-Field Probe ET3DV6 this data cannot be measured, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.4 mm (see probe calibration document in Appendix F). The extrapolation of the values between the dipole center and the surface of the phantom was based on trivariate quadratics computed from the previously calculated 3D interpolated points nearest the phantom surface.
- Interpolated data is used to calculate the average SAR over 1g and 10g cubes by spatially discretizing the entire measured cube. The volume used to determine the averaged SAR is a 1mm grid (42875 interpolated points).
- A zoom scan volume of 32 mm x 32 mm x 30 mm (5 x 5 x 7 points) centered at the peak SAR location determined from the area scan is used for all zoom scans for devices with a transmit frequency  $< 800$  MHz. Zoom scans for frequencies  $\geq 800$  MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7 x 7 x 7) to ensure complete capture of the peak spatial-average SAR.

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Test Lab Certificate No. 2470.01

## 6.0 SYSTEM PERFORMANCE CHECK

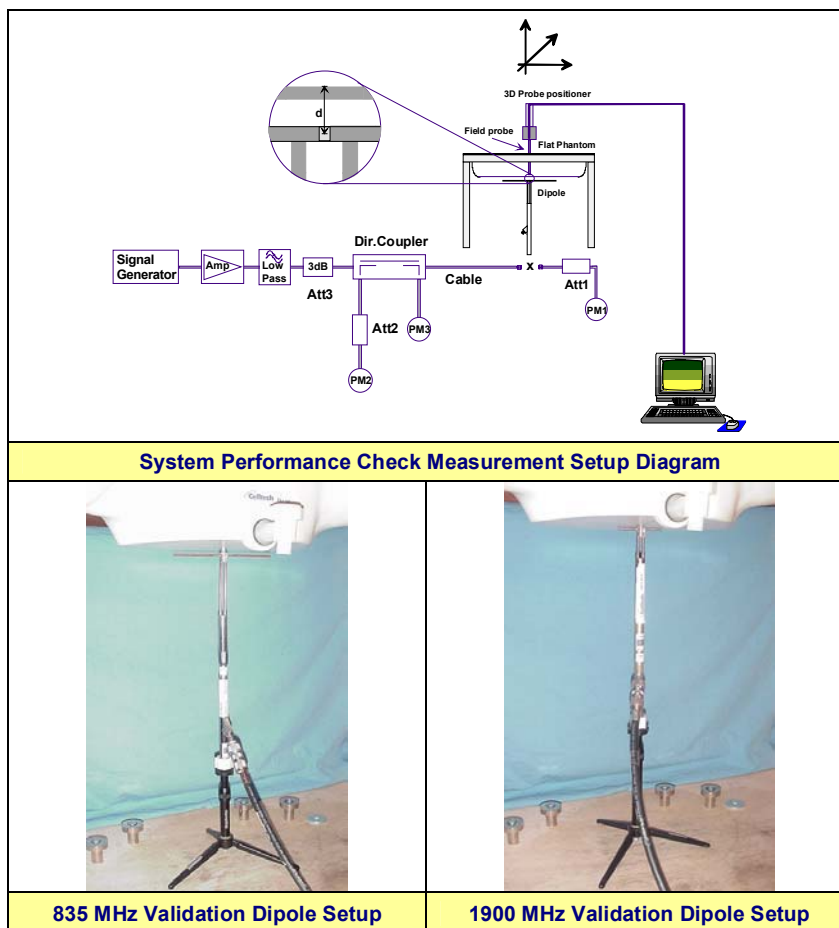
Prior to the SAR evaluations, system checks were performed using the SAM phantom (planar section) with 835 MHz and 1900 MHz dipoles (see Appendix B for system performance check test plots). The dielectric parameters of the simulated tissue mixtures were measured prior to the system performance checks using an HP 85070C Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C). A forward power of 250 mW was applied to the dipole and the system was verified to a tolerance of  $\pm 10\%$  from the system validation target SAR values (see Appendix E for system validation evaluations).


### SYSTEM PERFORMANCE CHECK EVALUATION RESULTS




Test Date	Fluid Freq.	SAR 1g (W/kg)			Dielectric Constant $\epsilon_r$			Conductivity $\sigma$ (mho/m)			$\rho$ (Kg/m <sup>3</sup> )	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
	Body (MHz)	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.						
Mar 11	835	2.21 $\pm 10\%$	2.25	+1.8%	55.1 $\pm 5\%$	56.9	+3.3%	0.94 $\pm 5\%$	0.96	+2.2%	1000	24.1	23.3	$\geq 15$	35	101.1
Mar 10	1900	10.4 $\pm 10\%$	10.1	-2.8%	51.0 $\pm 5\%$	51.6	+1.2%	1.57 $\pm 5\%$	1.49	-5.0%	1000	24.3	23.5	$\geq 15$	35	101.1

#### Note(s)

- The target SAR value is referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).
- The target dielectric parameters are referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).
- The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within  $\pm 2^\circ\text{C}$  of the fluid temperature reported during the dielectric parameter measurements.
- The SAR evaluations were performed within 24 hours of the system performance check.



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## 7.0 SIMULATED EQUIVALENT TISSUES


The 1880/1900MHz simulated equivalent tissue mixture consists of Glycol-monobutyl, water, and salt. The 835MHz simulated equivalent tissue mixture consists of a viscous gel using saline solution. Preservation with a bactericide was added and visual inspection was made to ensure air bubbles were not trapped during the mixing process. The fluids were prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

PCS BAND TISSUE MIXTURE		
INGREDIENT	1900 MHz Body	1880 MHz Body
	System Performance Check	DUT Evaluation
Water	69.85 %	69.85 %
Glycol Monobutyl	29.89 %	29.89 %
Salt	0.26 %	0.26 %




CELLULAR BAND TISSUE MIXTURE		
INGREDIENT	835 MHz Body	835 MHz Body
	System Performance Check	DUT Evaluation
Water	53.79 %	53.79 %
Sugar	45.13 %	45.13 %
Salt	0.98 %	0.98 %
Bactericide	0.10 %	0.10 %

## 8.0 SAR LIMITS

SAR RF EXPOSURE LIMITS			
FCC 47 CFR 2.1093	Health Canada Safety Code 6	(General Population / Uncontrolled Exposure)	(Occupational / Controlled Exposure)
Spatial Average (averaged over the whole body)		0.08 W/kg	0.4 W/kg
Spatial Peak (averaged over any 1 g of tissue)		1.6 W/kg	8.0 W/kg
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)		4.0 W/kg	20.0 W/kg
The Spatial Average value of the SAR averaged over the whole body.			
The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.			
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.			


Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## 9.0 ROBOT SYSTEM SPECIFICATIONS

<u>Specifications</u>	
Positioner	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability	0.02 mm
No. of axis	6
<u>Data Acquisition Electronic (DAE) System</u>	
<u>Cell Controller</u>	
Processor	AMD Athlon XP 2400+
Clock Speed	2.0 GHz
Operating System	Windows XP Professional
<u>Data Converter</u>	
Features	Signal Amplifier, multiplexer, A/D converter, and control logic
Software	Measurement Software: DASY4, V4.7 Build 44
	Postprocessing Software: SEMCAD, V1.8 Build 171
Connecting Lines	Optical downlink for data and status info.; Optical uplink for commands and clock
<u>DASY4 Measurement Server</u>	
Function	Real-time data evaluation for field measurements and surface detection
Hardware	PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM
Connections	COM1, COM2, DAE, Robot, Ethernet, Service Interface
<u>E-Field Probe</u>	
<u>Probe (Cell Band)</u>	
Model	ET3DV6
Serial No.	1387
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
<u>Probe (PCS Band)</u>	
Model	EX3DV4
Serial No.	3600
Construction	Symmetrical design with triangular core
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
<u>Phantom(s)</u>	
Type	SAM V4.0C
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 25 liters

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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## 10.0 PROBE SPECIFICATIONS

### ET3DV6E-Field Probe

Construction: Symmetrical design with triangular core  
Built-in shielding against static charges  
PEEK enclosure material (resistant to organic solvents, 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  $\pm 8\%$ )

Frequency: 10 MHz to > 6 GHz; Linearity:  $\pm 0.2$  dB  
(30 MHz to 3 GHz)

Directivity:  $\pm 0.2$  dB in brain tissue (rotation around probe axis)  
 $\pm 0.4$  dB in brain tissue (rotation normal to probe axis)

Dynamic Range:  $5 \mu\text{W/g}$  to > 100 mW/g; Linearity:  $\pm 0.2$  dB

Surface Detect:  $\pm 0.2$  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

### EX3DV4 E-Field Probe

Construction: Symmetrical design with triangular core  
Built-in shielding against static charges  
PEEK enclosure material (resistant to organic solvents, e.g. DGBE)

Calibration: Basic Broadband Calibration in air: 10-3000 MHz  
Conversion Factors (CF) for HSL 900 and HSL 1750

Frequency: 10 MHz to >6 GHz; Linearity:  $\pm 0.2$  dB (30 MHz to 3 GHz)

Directivity:  $\pm 0.3$  dB in HSL (rotation around probe axis)  
 $\pm 0.5$  dB in tissue material (rotation normal to probe axis)

Dynamic Range:  $10 \mu\text{W/g}$  to >100 mW/g; Linearity:  $\pm 0.2$  dB  
(noise: typically <  $1 \mu\text{W/g}$ )

Dimensions: Overall length: 330 mm (Tip: 20 mm)  
Tip diameter: 2.5 mm (Body: 12 mm)  
Typical distance from probe tip to dipole centers: 1.0 mm

Application: High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better than 30%.



EX3DV4 E-Field Probe

## 11.0 SAM PHANTOM V4.0C

The SAM phantom V4.0C is a fiberglass shell phantom with a 2.0 mm ( $\pm 0.2$  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 (see Appendix G for specifications of the SAM phantom V4.0C).




SAM Twin Phantom V4.0C




## 12.0 DEVICE HOLDER

The DASY4 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  $65^\circ$ . 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


Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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Test Lab Certificate No. 2470.01				

## 13.0 TEST EQUIPMENT LIST

TEST EQUIPMENT		ASSET NO.	SERIAL NO.	DATE CALIBRATED		CALIBRATION DUE DATE
USED	DESCRIPTION					
x	Schmid & Partner DASY4 System	-	-	-	-	-
x	-DASY4 Measurement Server	00158	1078	N/A	N/A	N/A
x	-Robot	00046	599396-01	N/A	N/A	N/A
x	-DAE4	00019	353	10Jul07	10Jul08	10Jul08
x	-DAE3	00018	370	13Mar07	13Mar08	13Mar08
x	-ET3DV6 E-Field Probe	00016	1387	16Mar07	16Mar08	16Mar08
x	-EX3DV4 E-Field Probe*	00213	3600	24Jan07	24Jan08	24Jan08
	-300 MHz Validation Dipole	00023	135	08Jun07	08Jun08	08Jun08
	-450 MHz Validation Dipole	00024	136	07Jun07	07Jun08	07Jun08
x	-835 MHz Validation Dipole	00022	411	Brain	07Jun07	07Jun08
				Body	07Jun07	07Jun08
	-900 MHz Validation Dipole	00020	054	Brain	07Jun07	07Jun08
				Body	07Jun07	07Jun08
	-1800 MHz Validation Dipole	00021	247	Brain	06Jun07	06Jun08
				Body	06Jun07	06Jun08
x	-1900 MHz Validation Dipole	00032	151	Brain	06Jun07	06Jun08
				Body	06Jun07	06Jun08
	-2450 MHz Validation Dipole	00025	150	Brain	08Jun07	08Jun08
				Body	08Jun07	08Jun08
	5GHz Validation Dipole	00126	1031	Body	18May07	18May08
				Body	22May07	22May08
				Brain	09May07	09May08
				Body	10May07	10May08
x	-SAM Phantom V4.0C	00154	1033	N/A	N/A	N/A
	-Barski Planar Phantom	00155	03-01	N/A	N/A	N/A
	-Plexiglas Side Planar Phantom	00156	161	N/A	N/A	N/A
	-Plexiglas Validation Planar Phantom	00157	137	N/A	N/A	N/A
	ALS-PR-DIEL Dielectric Probe Kit	00160	260-00953	N/A	N/A	N/A
x	HP 85070C Dielectric Probe Kit	00033	US39240170	N/A	N/A	N/A
x	Gigatronics 8652A Power Meter	00007	1835272	26Mar07	26Mar08	26Mar08
x	Gigatronics 80701A Power Sensor	00109	1834366	26Mar07	26Mar08	26Mar08
x	HP 8753ET Network Analyzer	00134	US39170292	20Apr07	20Apr08	20Apr08
x	HP 8648D Signal Generator	00005	3847A00611	NCR	NCR	NCR
	Rohde & Schwarz SMR20 Signal Generator	00006	100104	NCR	NCR	NCR
x	Anritsu MT8820A Radio Communication Analyzer	00208	6200241241	NCR	NCR	NCR
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	NCR	NCR	NCR
	Amplifier Research 10W1000C Power Amplifier	00041	27887	NCR	NCR	NCR
	Nextec NB00383 Microwave Amplifier	00151	0535	NCR	NCR	NCR


\* Note: The System/Probe Validation procedure (long version) was performed on January 15, 2008 by Celltech Labs Inc. for the EX3DV4 E-Field Probe in accordance with IEEE 1528-2003 Section 8.3.6 and FCC KDB 392062 (see Appendix F for System/Probe Validation data).




Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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## 14.0 MEASUREMENT UNCERTAINTIES


UNCERTAINTY BUDGET FOR DEVICE EVALUATION (Cell Band)						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V <sub>i</sub> or V <sub>eff</sub>
<b>Measurement System</b>						
Probe calibration (835 MHz)	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	0.7	1.9	∞
Spherical isotropy of the probe	9.6	Rectangular	1.732050808	0.7	3.9	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	0.8	Rectangular	1.732050808	1	0.5	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0.8	Rectangular	1.732050808	1	0.5	∞
Integration time	2.6	Rectangular	1.732050808	1	1.5	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
<b>Test Sample Related</b>						
Device positioning	2.9	Normal	1	1	2.9	12
Device holder uncertainty	3.6	Normal	1	1	3.6	8
Power drift	5	Rectangular	1.732050808	1	2.9	∞
<b>Phantom and Setup</b>						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	1	Normal	1	0.64	0.6	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	3.1	Normal	1	0.6	1.9	∞
<b>Combined Standard Uncertainty</b>					<b>10.53</b>	
<b>Expanded Uncertainty (k=2)</b>					<b>21.06</b>	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])						

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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## MEASUREMENT UNCERTAINTIES (Cont.)

UNCERTAINTY BUDGET FOR DEVICE EVALUATION (PCS Band)						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V <sub>i</sub> or V <sub>eff</sub>
<b>Measurement System</b>						
Probe calibration (1950 MHz)	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	0.7	1.9	∞
Spherical isotropy of the probe	9.6	Rectangular	1.732050808	0.7	3.9	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	0.2	Rectangular	1.732050808	1	0.1	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0.8	Rectangular	1.732050808	1	0.5	∞
Integration time	2.6	Rectangular	1.732050808	1	1.5	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
<b>Test Sample Related</b>						
Device positioning	2.9	Normal	1	1	2.9	12
Device holder uncertainty	3.6	Normal	1	1	3.6	8
Power drift	5	Rectangular	1.732050808	1	2.9	∞
<b>Phantom and Setup</b>						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	3.2	Normal	1	0.64	2.0	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	3	Normal	1	0.6	1.8	∞
<b>Combined Standard Uncertainty</b>					<b>10.69</b>	
<b>Expanded Uncertainty (k=2)</b>					<b>21.38</b>	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])						

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

Test Lab Certificate No. 2470.01

## MEASUREMENT UNCERTAINTIES (Cont.)


UNCERTAINTY BUDGET FOR SYSTEM VALIDATION (835 MHz)						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V <sub>i</sub> or V <sub>eff</sub>
<b>Measurement System</b>						
Probe calibration (835 MHz)	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	1	2.7	∞
Spherical isotropy of the probe	0	Rectangular	1.732050808	1	0.0	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	0.8	Rectangular	1.732050808	1	0.5	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0	Rectangular	1.732050808	1	0.0	∞
Integration time	0	Rectangular	1.732050808	1	0.0	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
<b>Dipole</b>						
Dipole Positioning	2	Normal	1.732050808	1	1.2	∞
Power & Power Drift	4.7	Normal	1.732050808	1	2.7	∞
<b>Phantom and Setup</b>						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	2.2	Normal	1	0.64	1.4	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	3.3	Normal	1	0.6	2.0	∞
<b>Combined Standard Uncertainty</b>					<b>8.84</b>	
<b>Expanded Uncertainty (k=2)</b>					<b>17.68</b>	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])						




Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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## MEASUREMENT UNCERTAINTIES (Cont.)


UNCERTAINTY BUDGET FOR SYSTEM VALIDATION (1900 MHz)						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V <sub>i</sub> or V <sub>eff</sub>
<b>Measurement System</b>						
Probe calibration (1950 MHz)	5.5	Normal	1	1	5.5	∞
Axial isotropy of the probe	4.7	Rectangular	1.732050808	1	2.7	∞
Spherical isotropy of the probe	0	Rectangular	1.732050808	1	0.0	∞
Spatial resolution	0	Rectangular	1.732050808	1	0.0	∞
Boundary effects	0.2	Rectangular	1.732050808	1	0.1	∞
Probe linearity	4.7	Rectangular	1.732050808	1	2.7	∞
Detection limit	1	Rectangular	1.732050808	1	0.6	∞
Readout electronics	0.3	Normal	1	1	0.3	∞
Response time	0	Rectangular	1.732050808	1	0.0	∞
Integration time	0	Rectangular	1.732050808	1	0.0	∞
RF ambient conditions	3	Rectangular	1.732050808	1	1.7	∞
Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.2	∞
Probe positioning	2.9	Rectangular	1.732050808	1	1.7	∞
Extrapolation & integration	1	Rectangular	1.732050808	1	0.6	∞
<b>Dipole</b>						
Dipole Positioning	2	Normal	1.732050808	1	1.2	∞
Power & Power Drift	4.7	Normal	1.732050808	1	2.7	∞
<b>Phantom and Setup</b>						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	5	Normal	1	0.64	3.2	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	1.2	Normal	1	0.6	0.7	∞
<b>Combined Standard Uncertainty</b>					<b>9.10</b>	
<b>Expanded Uncertainty (k=2)</b>					<b>18.20</b>	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 (see reference [5])						



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	


## 15.0 REFERENCES



- [1] Federal Communications Commission - "Radiofrequency radiation exposure evaluation: portable devices", Rule Part 47 CFR §2.1093: 1999.
- [2] Health Canada - "Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz", Safety Code 6: 1999.
- [3] 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.
- [4] Industry Canada - "Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)", Radio Standards Specification RSS-102 Issue 2: November 2005.
- [5] IEEE Standard 1528-2003 - "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques": December 2003.

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## APPENDIX A - SAR MEASUREMENT DATA

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/11/2008

## Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT - 824.2 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.8 dBm (Conducted)

Frequency: 824.2 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 128

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.061 mW/g

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 128

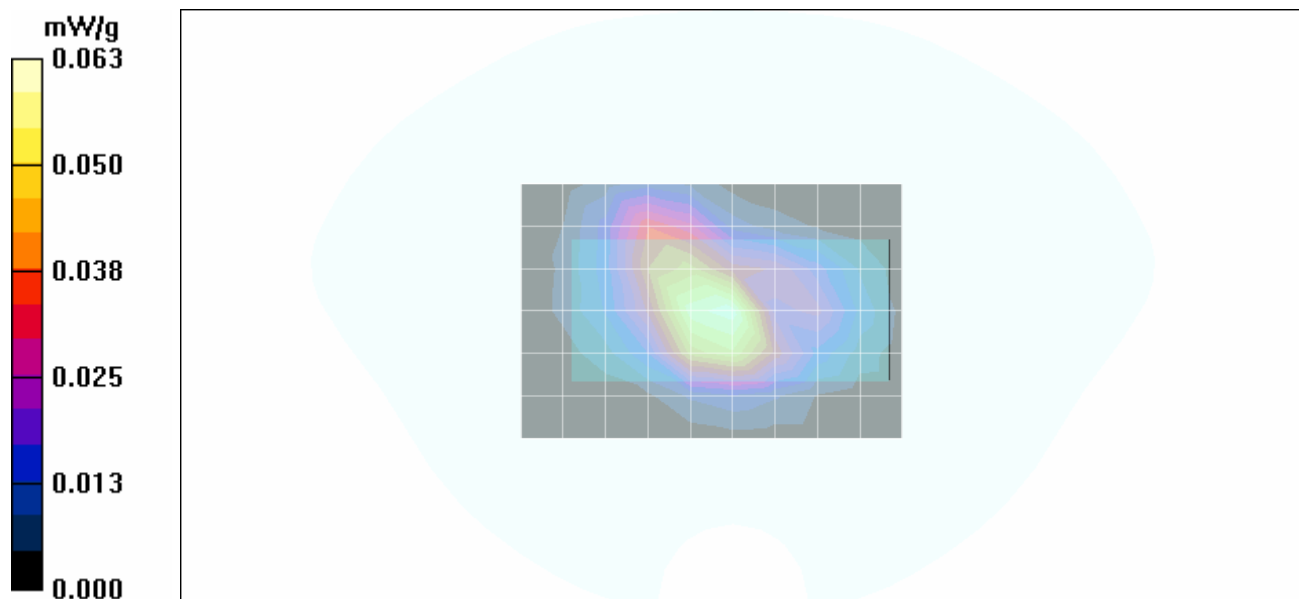
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 8.08 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.086 W/kg



**SAR(10 g) = 0.039 mW/g**

Maximum value of SAR (measured) = 0.063 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/11/2008

## Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT - 836.6 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.6 dBm (Conducted)

Frequency: 836.6 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 190

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.056 mW/g

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 190

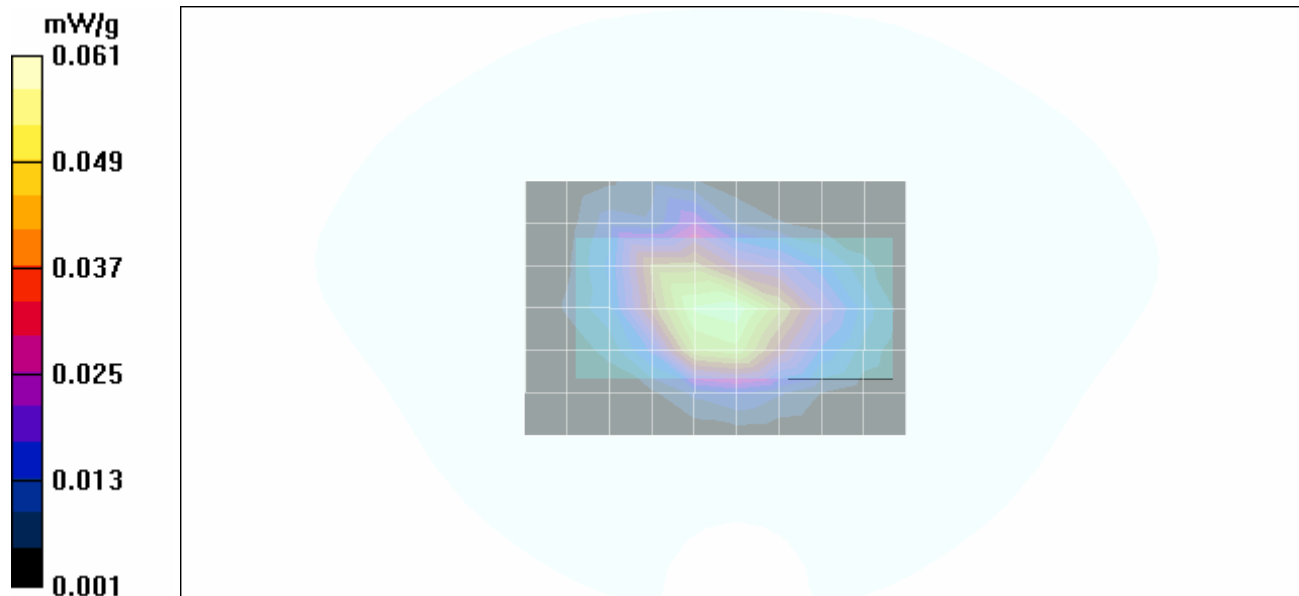
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 7.88 V/m; Power Drift = 0.109 dB



Peak SAR (extrapolated) = 0.085 W/kg

**SAR(10 g) = 0.038 mW/g**

Maximum value of SAR (measured) = 0.061 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/11/2008

## Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT - 848.8 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.7 dBm (Conducted)

Frequency: 848.8 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 251

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.066 mW/g

### Ankle-worn SAR - Cellular GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 251

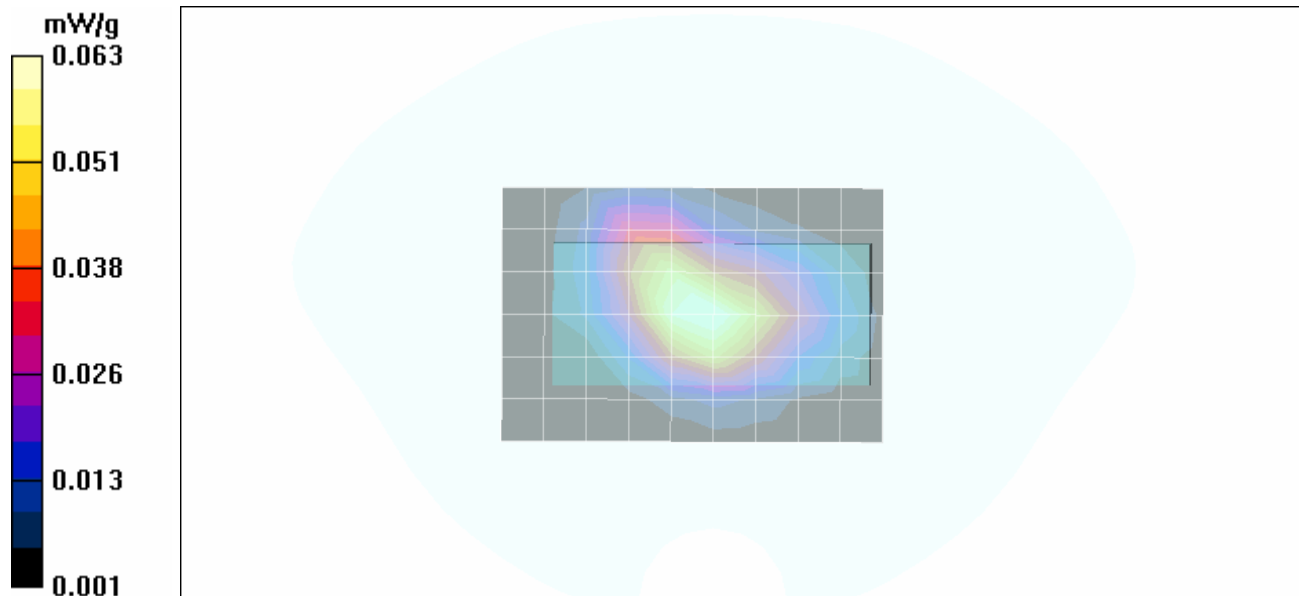
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 8.32 V/m; Power Drift = 0.048 dB



Peak SAR (extrapolated) = 0.082 W/kg

**SAR(10 g) = 0.039 mW/g**

Maximum value of SAR (measured) = 0.063 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/11/2008

## Body SAR - Cellular GPRS - Outer Edge of DUT - 824.2 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.8 dBm (Conducted)

Frequency: 824.2 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 824.2 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 128

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.129 mW/g

### Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 128

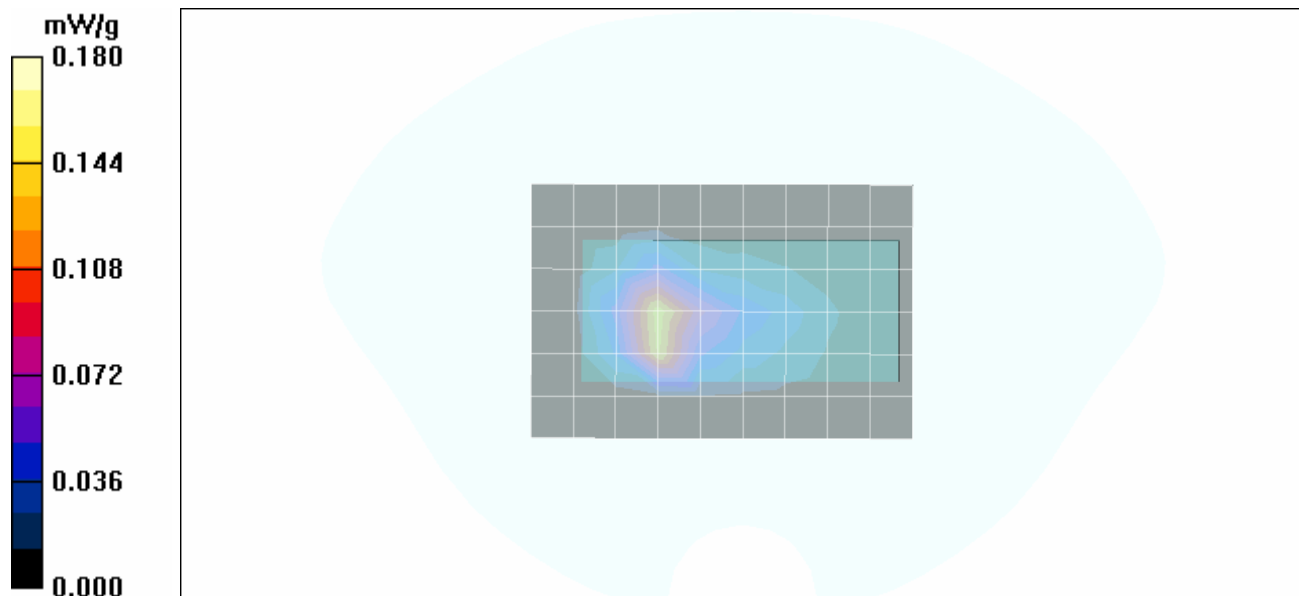
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 7.09 V/m; Power Drift = 0.239 dB




Peak SAR (extrapolated) = 0.467 W/kg

**SAR(1 g) = 0.153 mW/g; SAR(10 g) = 0.071 mW/g**

Maximum value of SAR (measured) = 0.180 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/11/2008

## Body SAR - Cellular GPRS - Outer Edge of DUT - 836.6 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.6 dBm (Conducted)

Frequency: 836.6 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

## Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 190

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.119 mW/g

## Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 190

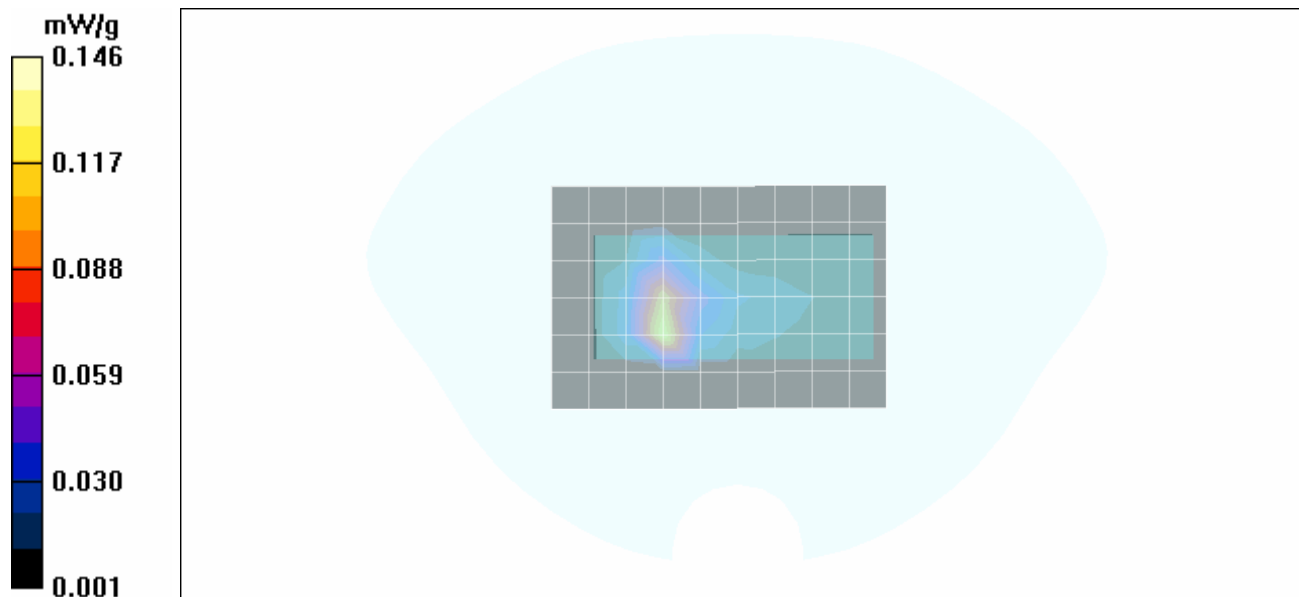
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 5.08 V/m; Power Drift = -0.038 dB



Peak SAR (extrapolated) = 0.405 W/kg

**SAR(1 g) = 0.111 mW/g; SAR(10 g) = 0.049 mW/g**

Maximum value of SAR (measured) = 0.146 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/11/2008

## Body SAR - Cellular GPRS - Outer Edge of DUT - 848.8 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.7 dBm (Conducted)

Frequency: 848.8 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used:  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 251

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.173 mW/g

### Body SAR - Cellular GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 251

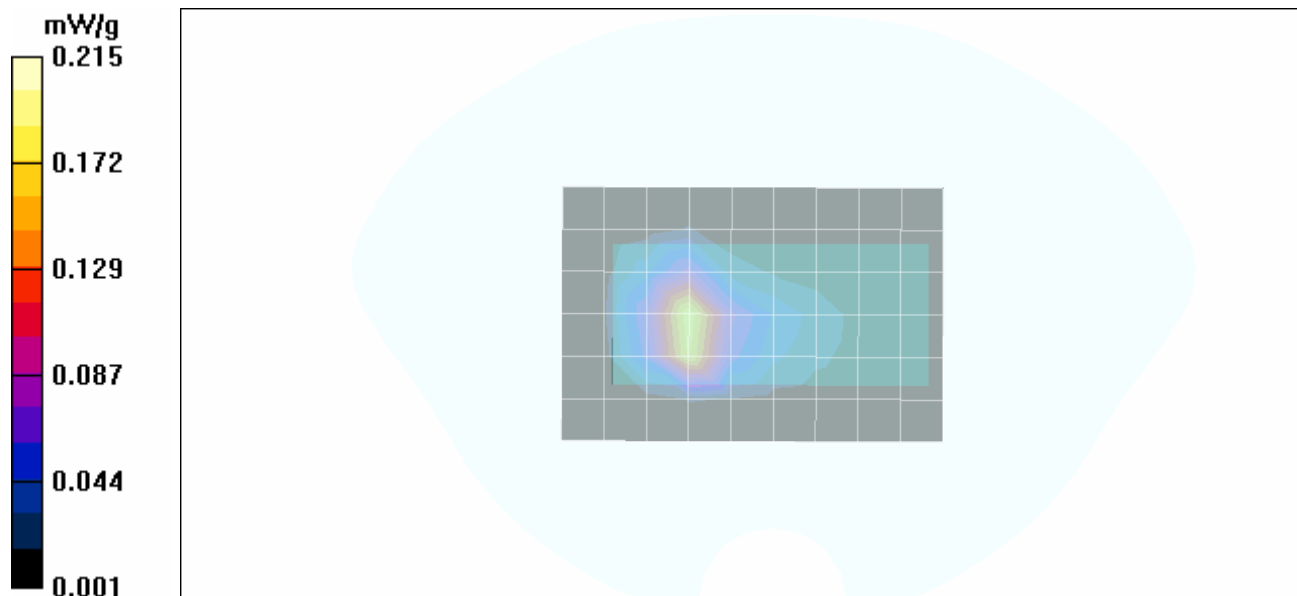
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 6.86 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.559 W/kg



**SAR(1 g) = 0.194 mW/g; SAR(10 g) = 0.089 mW/g**

Maximum value of SAR (measured) = 0.215 mW/g

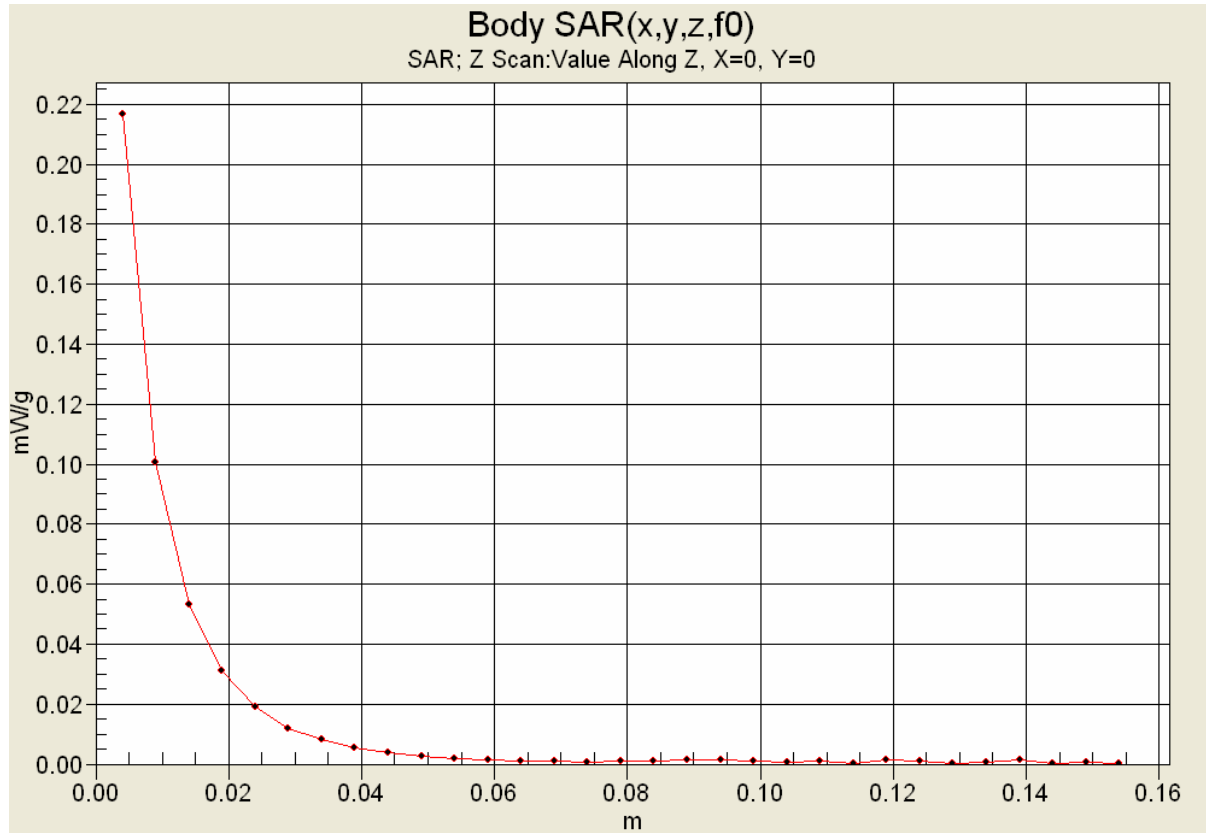



Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	
Test Lab Certificate No. 2470.01				

## Z-Axis Scan



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/11/2008

## Body SAR - Cellular GSM - Outer Edge of DUT - 848.8 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.1°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: Cellular GSM

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 32.7 dBm (Conducted)

Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: M835 Medium parameters used:  $f = 848.8 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - Cellular GSM - Outer Edge of DUT Touching Planar Phantom - Channel 251

**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.088 mW/g

### Body SAR - Cellular GSM - Outer Edge of DUT Touching Planar Phantom - Channel 251

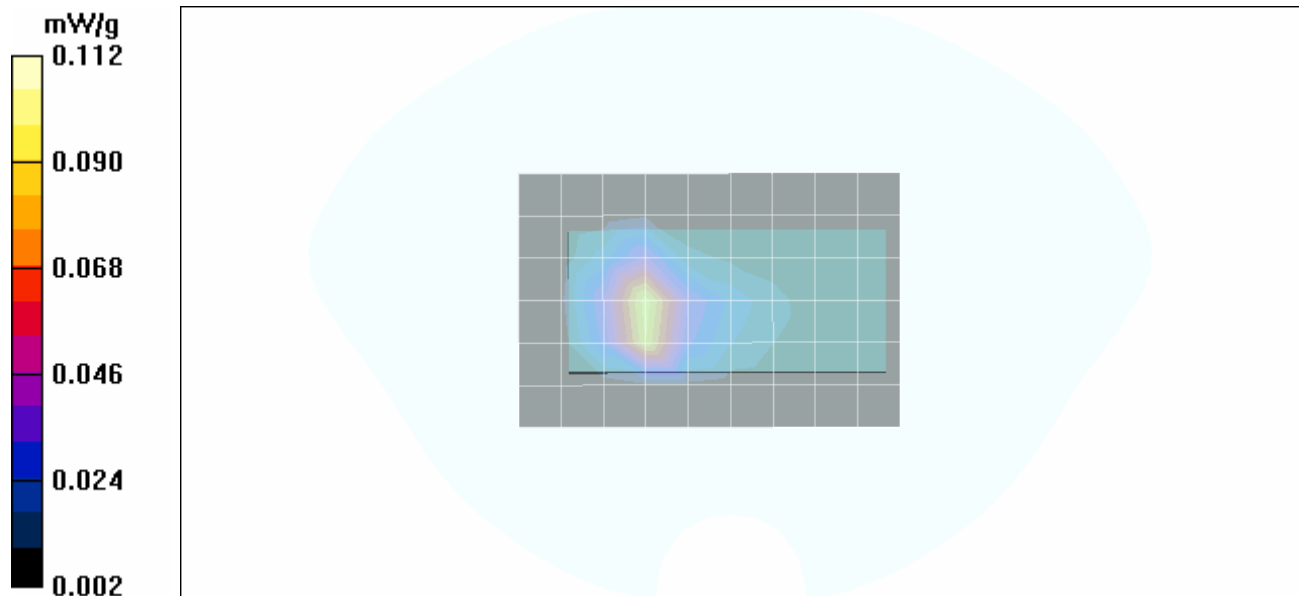
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 4.91 V/m; Power Drift = -0.007 dB



Peak SAR (extrapolated) = 0.323 W/kg

**SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.047 mW/g**

Maximum value of SAR (measured) = 0.112 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/10/2008

## Ankle-worn SAR - PCS GPRS - Inner Edge of DUT - 1850.2 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 29.4 dBm (Conducted)

Frequency: 1850.2 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 512

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.245 mW/g

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 512

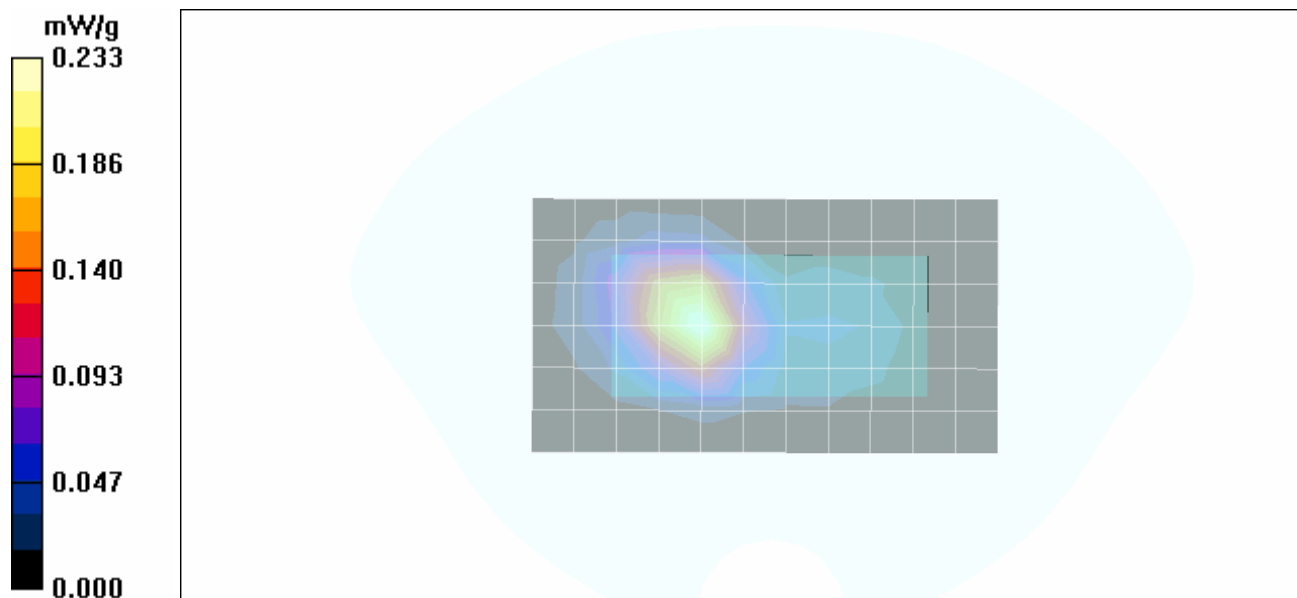
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 5.49 V/m; Power Drift = -0.060 dB



Peak SAR (extrapolated) = 0.634 W/kg

**SAR(10 g) = 0.077 mW/g**

Maximum value of SAR (measured) = 0.233 mW/g



Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/10/2008

## Ankle-worn SAR - PCS GPRS - Inner Edge of DUT - 1880.0 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 29.8 dBm (Conducted)

Frequency: 1880 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 661

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.250 mW/g

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 661

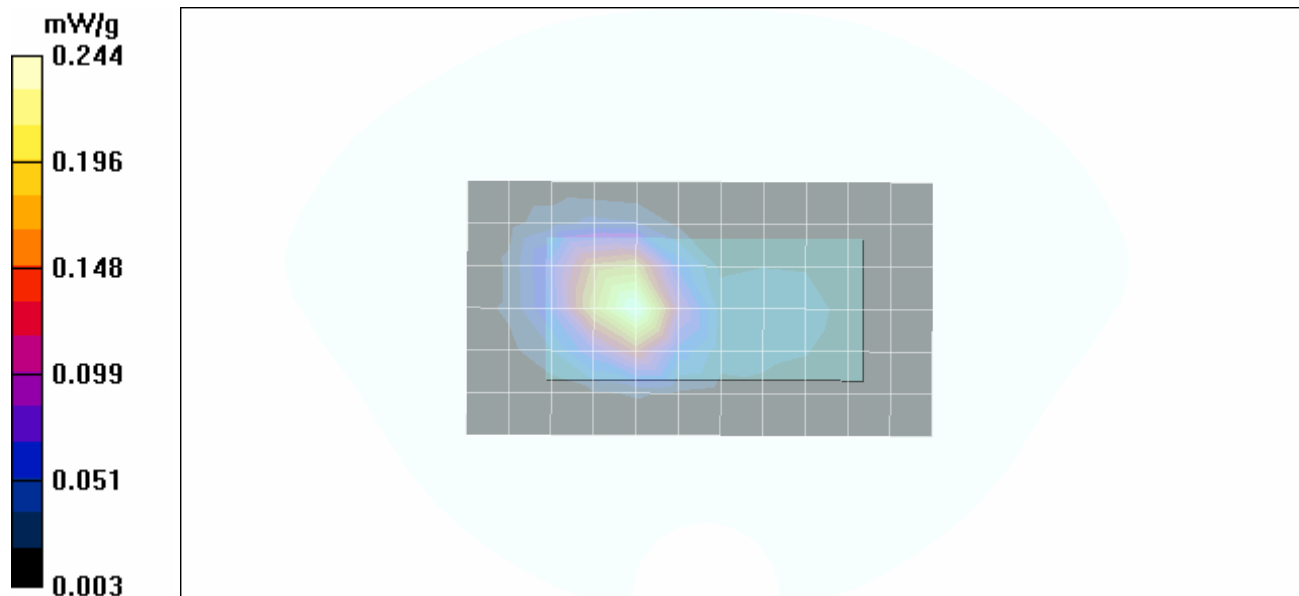
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 5.45 V/m; Power Drift = 0.028 dB



Peak SAR (extrapolated) = 0.413 W/kg

**SAR(10 g) = 0.124 mW/g**

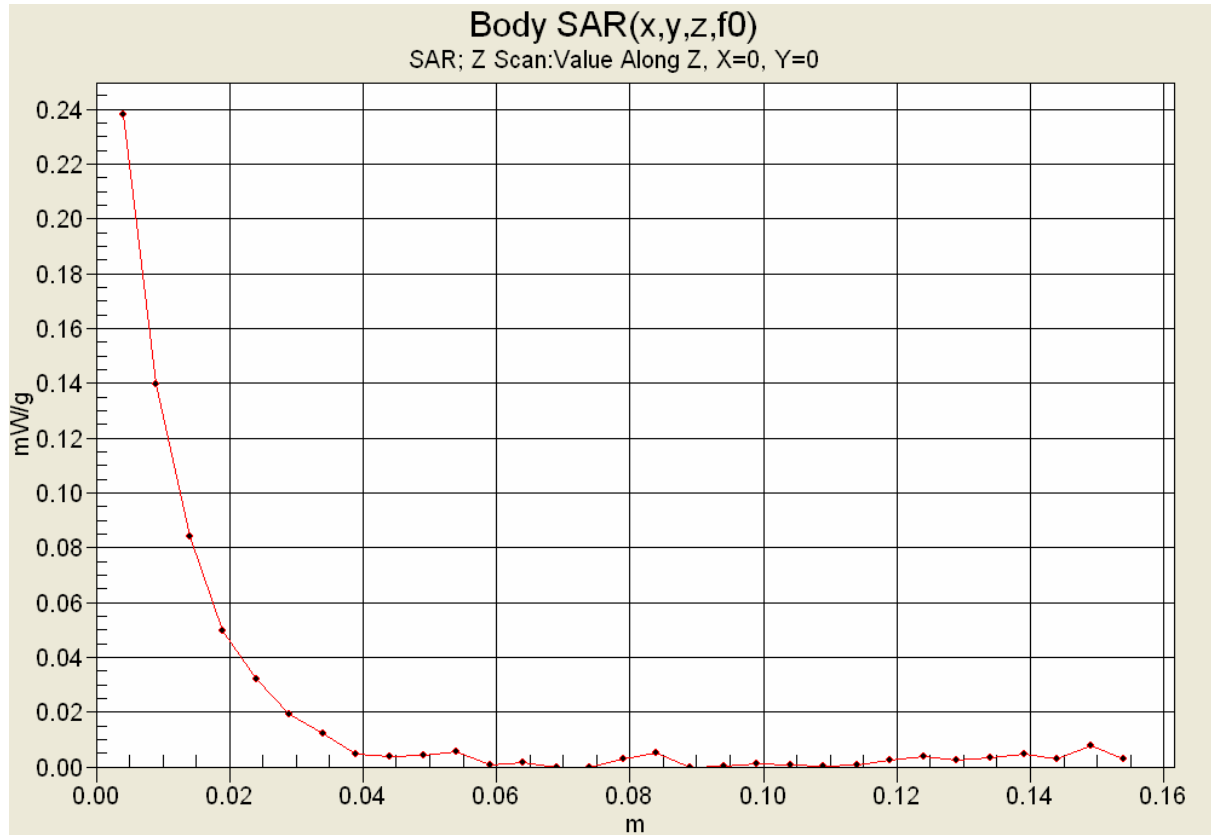
Maximum value of SAR (measured) = 0.244 mW/g




Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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 Celltech Testing and Engineering Services Ltd	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## Z-Axis Scan



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/10/2008

## Ankle-worn SAR - PCS GPRS - Inner Edge of DUT - 1909.8 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 28.8 dBm (Conducted)

Frequency: 1909.8 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1909.8 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 810

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.198 mW/g

### Ankle-worn SAR - PCS GPRS - Inner Edge of DUT Touching Planar Phantom - Channel 810

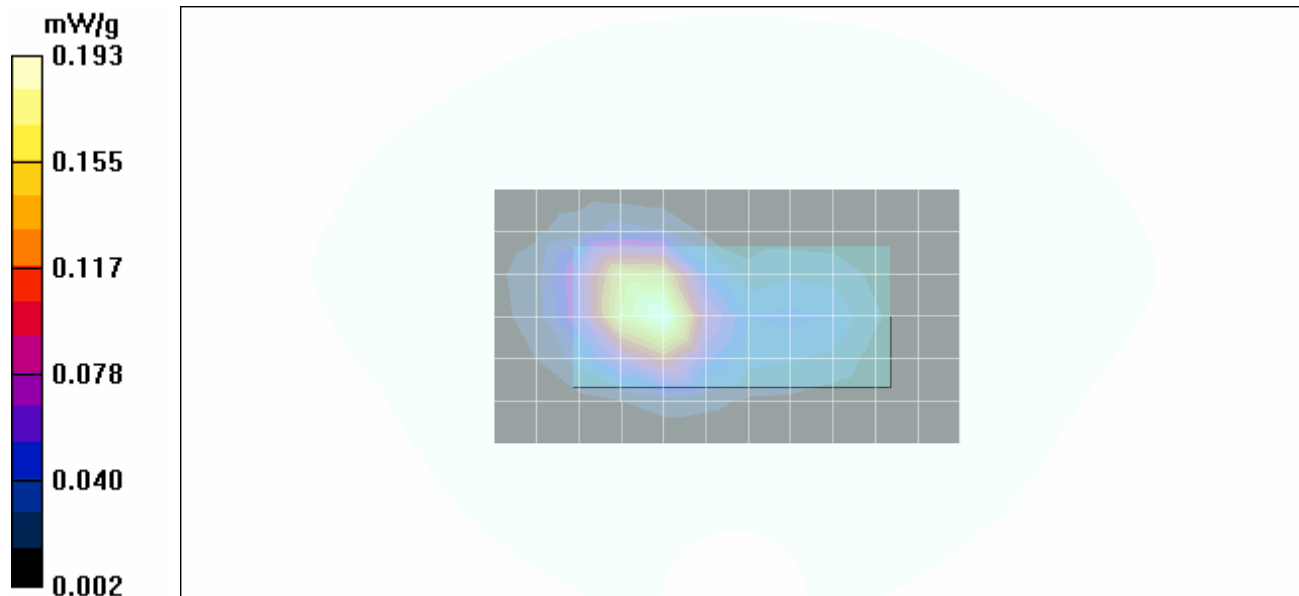
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 5.91 V/m; Power Drift = -0.027 dB



Peak SAR (extrapolated) = 0.321 W/kg

**SAR(10 g) = 0.104 mW/g**

Maximum value of SAR (measured) = 0.193 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/10/2008

## Body SAR - PCS GPRS - Outer Edge of DUT - 1850.2 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 29.4 dBm (Conducted)

Frequency: 1850.2 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 512

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.607 mW/g

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 512

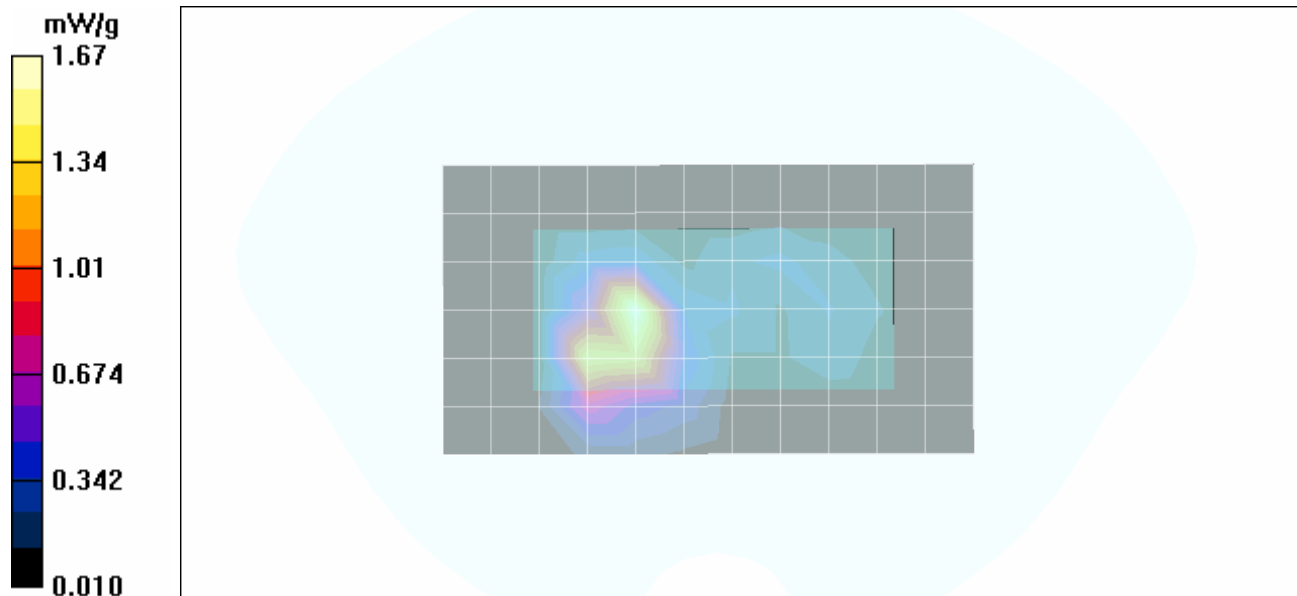
**Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 33.2 V/m; Power Drift = -0.035 dB




Peak SAR (extrapolated) = 2.30 W/kg

**SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.450 mW/g**

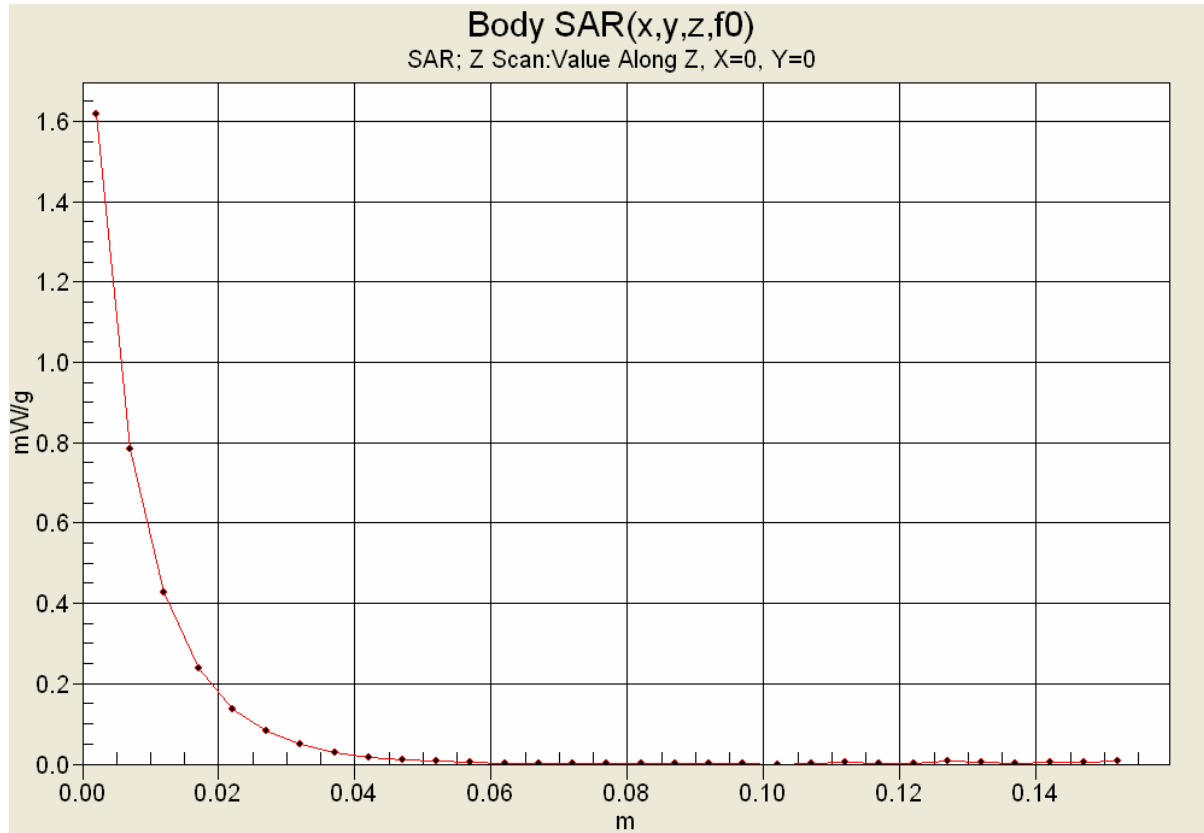
Maximum value of SAR (measured) = 1.67 mW/g






Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	
Test Lab Certificate No. 2470.01				

## Z-Axis Scan



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/10/2008

## Body SAR - PCS GPRS - Outer Edge of DUT - 1880.0 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 29.8 dBm (Conducted)

Frequency: 1880 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 661

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.632 mW/g

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 661

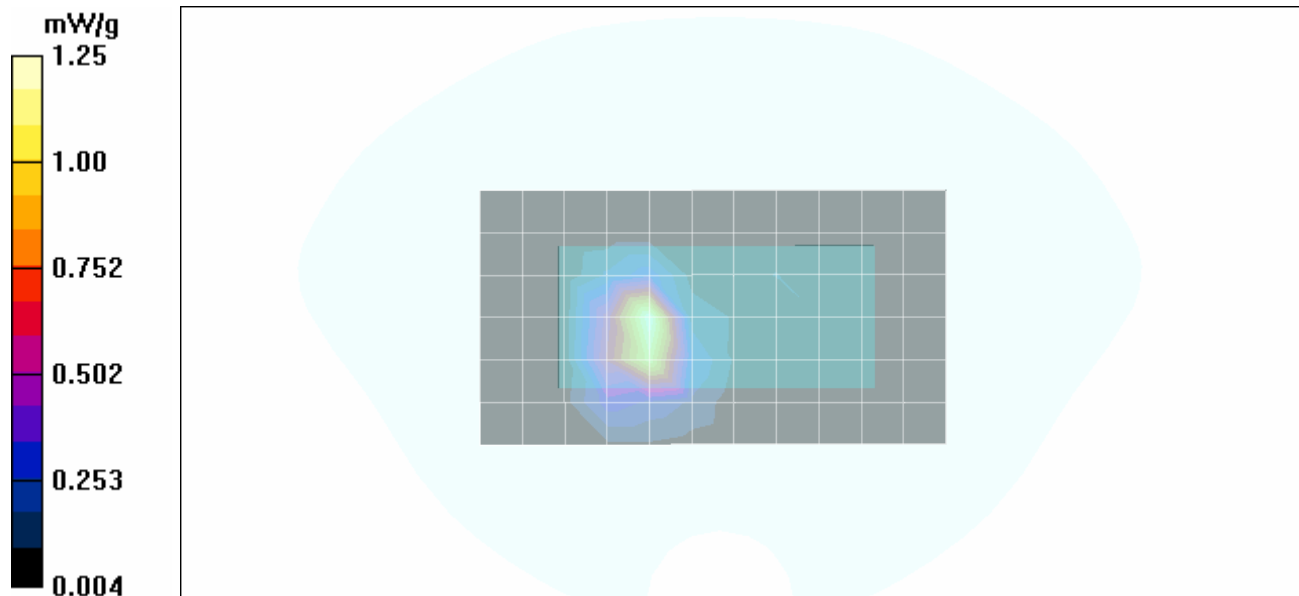
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 28.6 V/m; Power Drift = 0.054 dB



Peak SAR (extrapolated) = 1.74 W/kg

**SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.350 mW/g**

Maximum value of SAR (measured) = 1.25 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 03/10/2008

## Body SAR - PCS GPRS - Outer Edge of DUT - 1909.8 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GPRS

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 28.8 dBm (Conducted)

Frequency: 1909.8 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used:  $f = 1909.8 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 810

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.413 mW/g

### Body SAR - PCS GPRS - Outer Edge of DUT Touching Planar Phantom - Channel 810

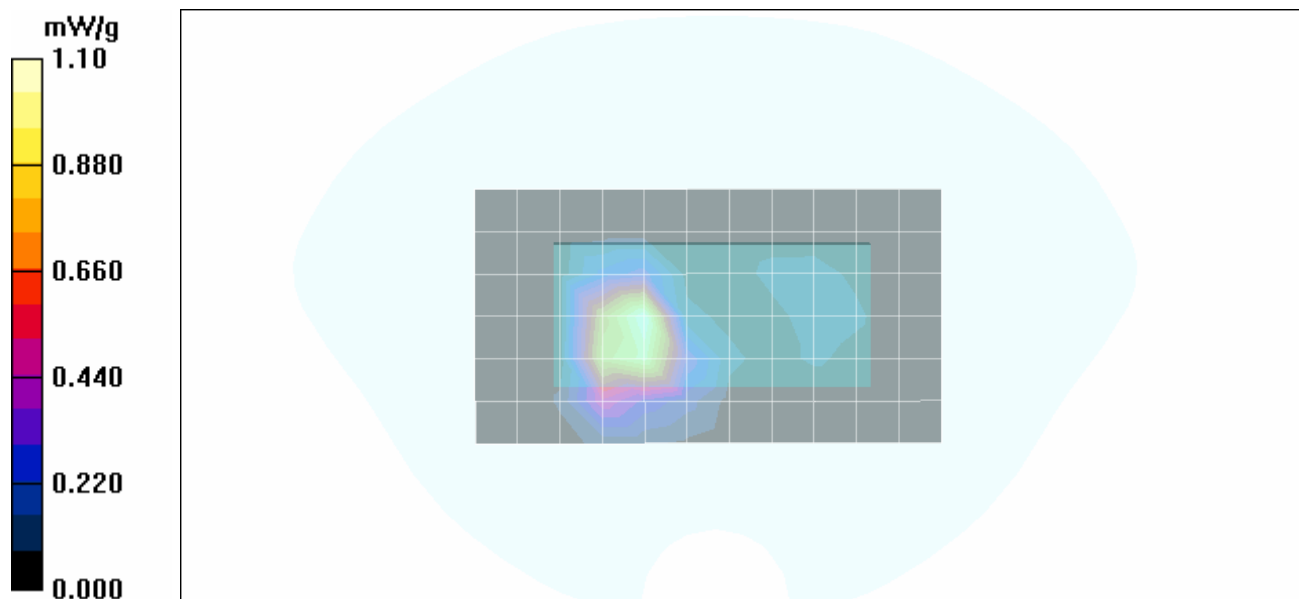
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 26.5 V/m; Power Drift = -0.165 dB




Peak SAR (extrapolated) = 1.51 W/kg

**SAR(1 g) = 0.689 mW/g; SAR(10 g) = 0.317 mW/g**

Maximum value of SAR (measured) = 1.10 mW/g



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/10/2008

## Body SAR - PCS GSM - Outer Edge of DUT - 1850.2 MHz

**DUT: Pro Tech; Model: WMTD3000; Type: Dual-Band GSM/GPRS Ankle-worn Tracking Device; Serial: 34000260**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: PCS GSM

3.7V 2200mAh Lithium-ion Battery Pack

RF Output Power: 29.4 dBm (Conducted)

Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: M1880 Medium parameters used:  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.47 \text{ mho/m}$ ;  $\epsilon_r = 51.7$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.85, 6.85, 6.85); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### Body SAR - PCS GSM - Outer Edge of DUT Touching Planar Phantom - Channel 661

**Area Scan (7x12x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.436 mW/g

### Body SAR - PCS GSM - Outer Edge of DUT Touching Planar Phantom - Channel 661

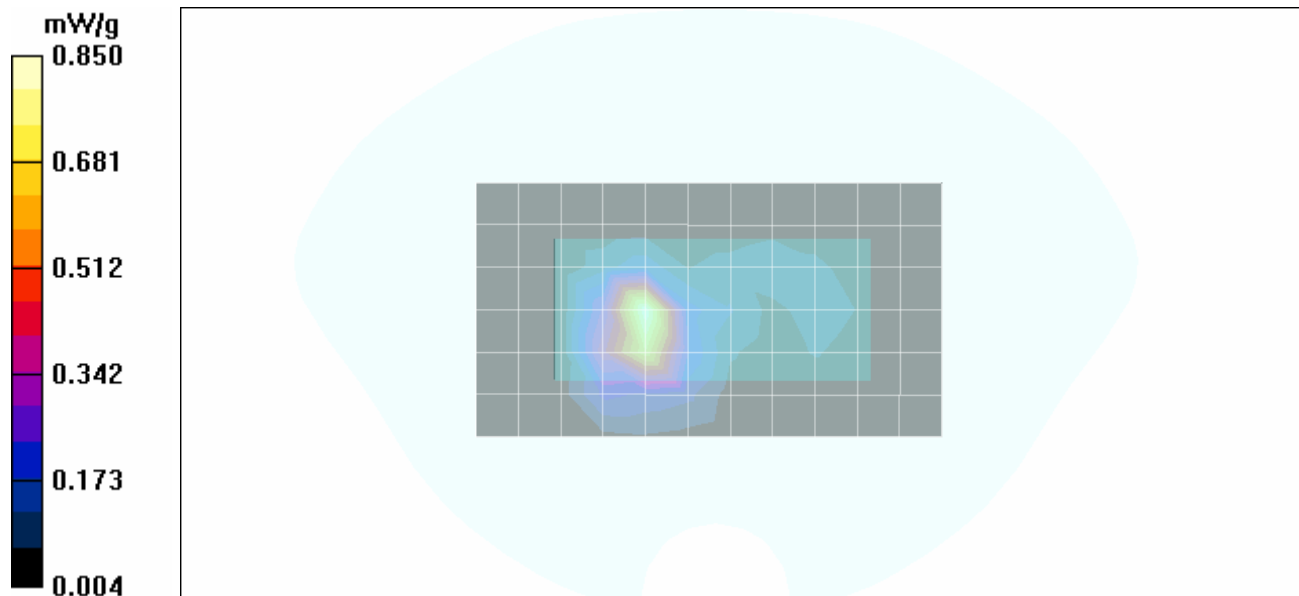
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 6.99 V/m; Power Drift = -0.082 dB

Peak SAR (extrapolated) = 1.20 W/kg



**SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.235 mW/g**

Maximum value of SAR (measured) = 0.850 mW/g






Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## APPENDIX B - SYSTEM PERFORMANCE CHECK DATA

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/11/2008

## System Performance Check - 835 MHz Dipole - MSL

**DUT: Dipole 835 MHz; Asset: 00022; Serial: 411; Validation: 06/07/2007**

Ambient Temp: 24.1°C; Fluid Temp: 23.3°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Forward Conducted Power: 250 mW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.96 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1387; ConvF(6.18, 6.18, 6.18); Calibrated: 16/03/2007
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 10/07/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### 835 MHz System Performance Check/Area Scan (6x10x1):

Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

Maximum value of SAR (measured) = 2.40 mW/g

### 835 MHz System Performance Check/Zoom Scan (7x7x7)/Cube 0:

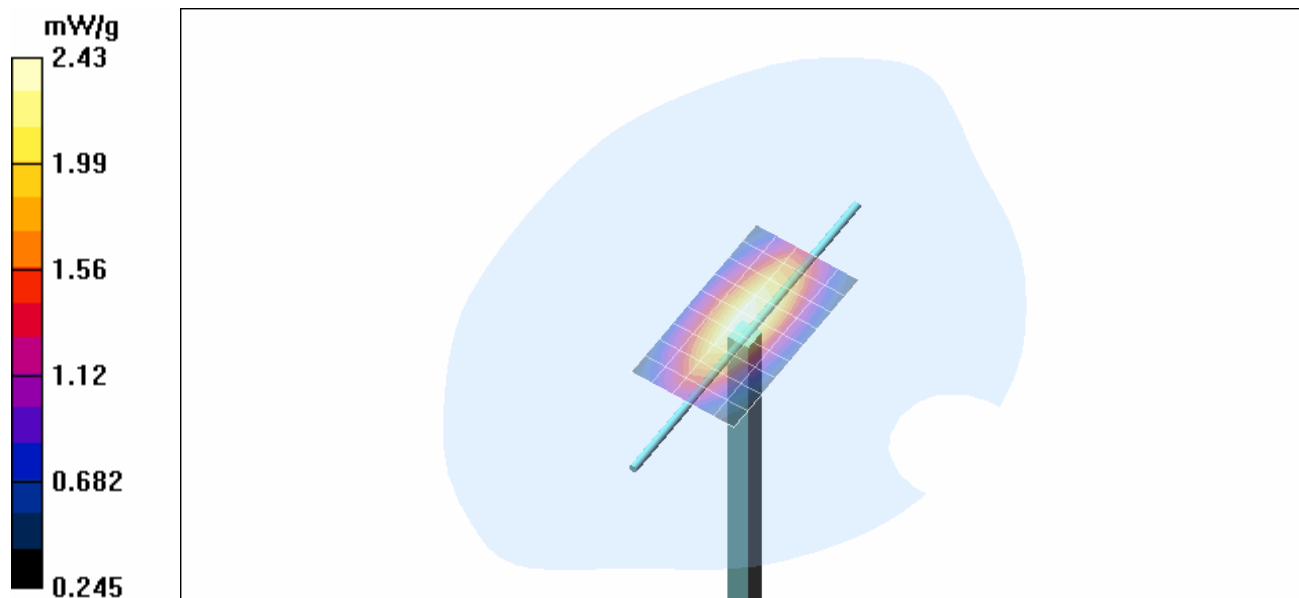
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 52.6 V/m; Power Drift = -0.0146 dB



Peak SAR (extrapolated) = 3.27 W/kg

**SAR(1 g) = 2.25 mW/g; SAR(10 g) = 1.49 mW/g**

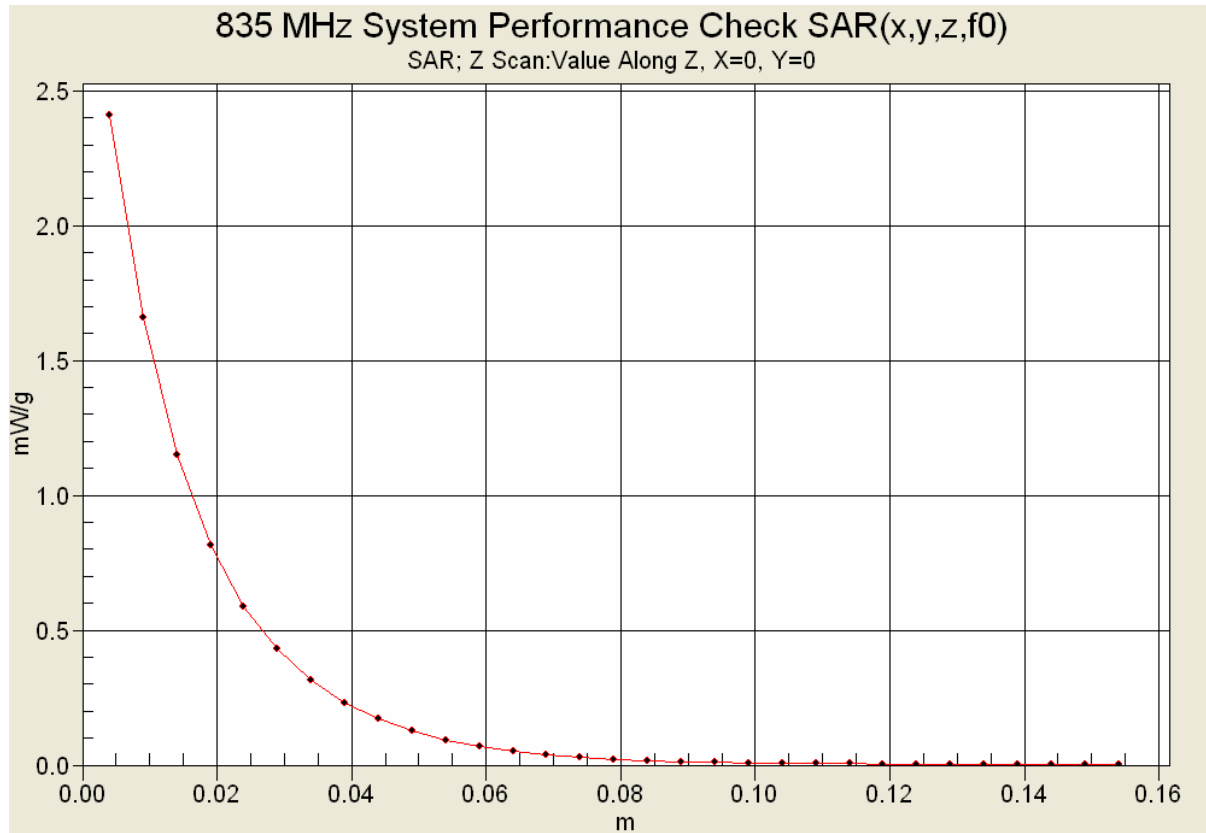
Maximum value of SAR (measured) = 2.43 mW/g






Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	
Test Lab Certificate No. 2470.01				

## Z-Axis Scan



Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

Date Tested: 03/10/2008

## System Performance Check - 1900 MHz Dipole - MSL

**DUT: Dipole 1900 MHz; Asset: 00032; Serial: 151; Validation: 06/06/2007**

Ambient Temp: 24.3°C; Fluid Temp: 23.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Forward Conducted Power: 250 mW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: M1900 Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.49 \text{ mho/m}$ ;  $\epsilon_r = 51.6$ ;  $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.54, 6.54, 6.54); Calibrated: 24/01/2007
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn370; Calibrated: 13/03/2007
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

### 1900 MHz System Performance Check/Area Scan (5x8x1):

Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (measured) = 13.8 mW/g

### 1900 MHz System Performance Check/Zoom Scan (7x7x7)/Cube 0:

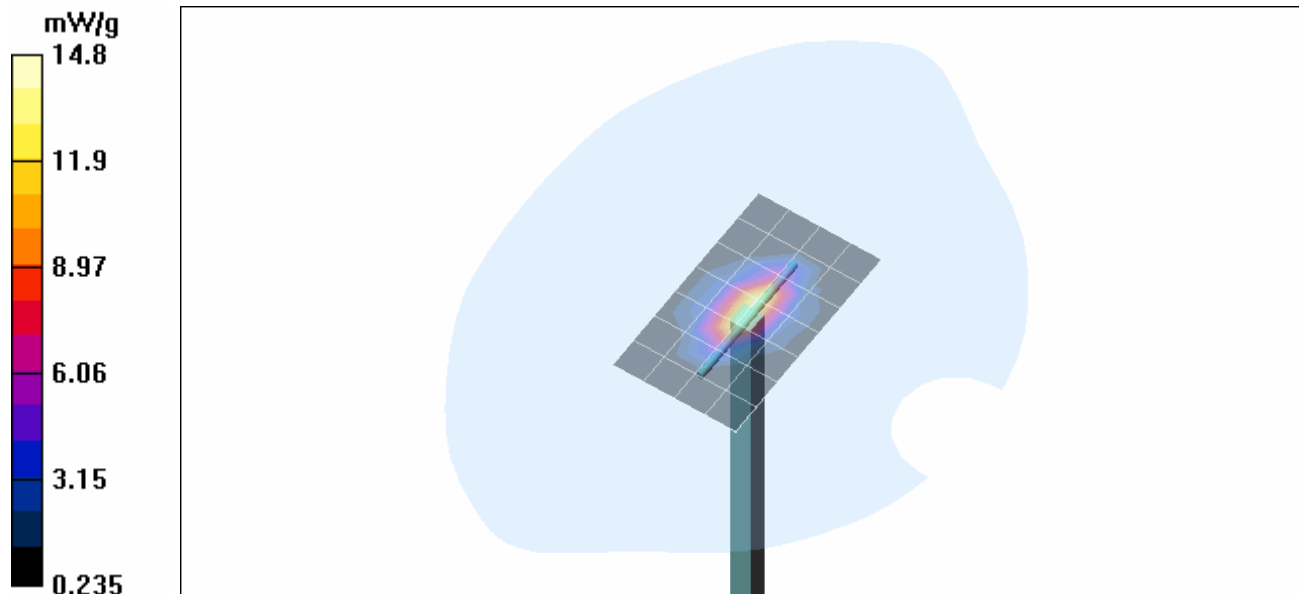
Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$


Reference Value = 101.5 V/m; Power Drift = -0.004 dB



Peak SAR (extrapolated) = 19.0 W/kg

**SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.18 mW/g**

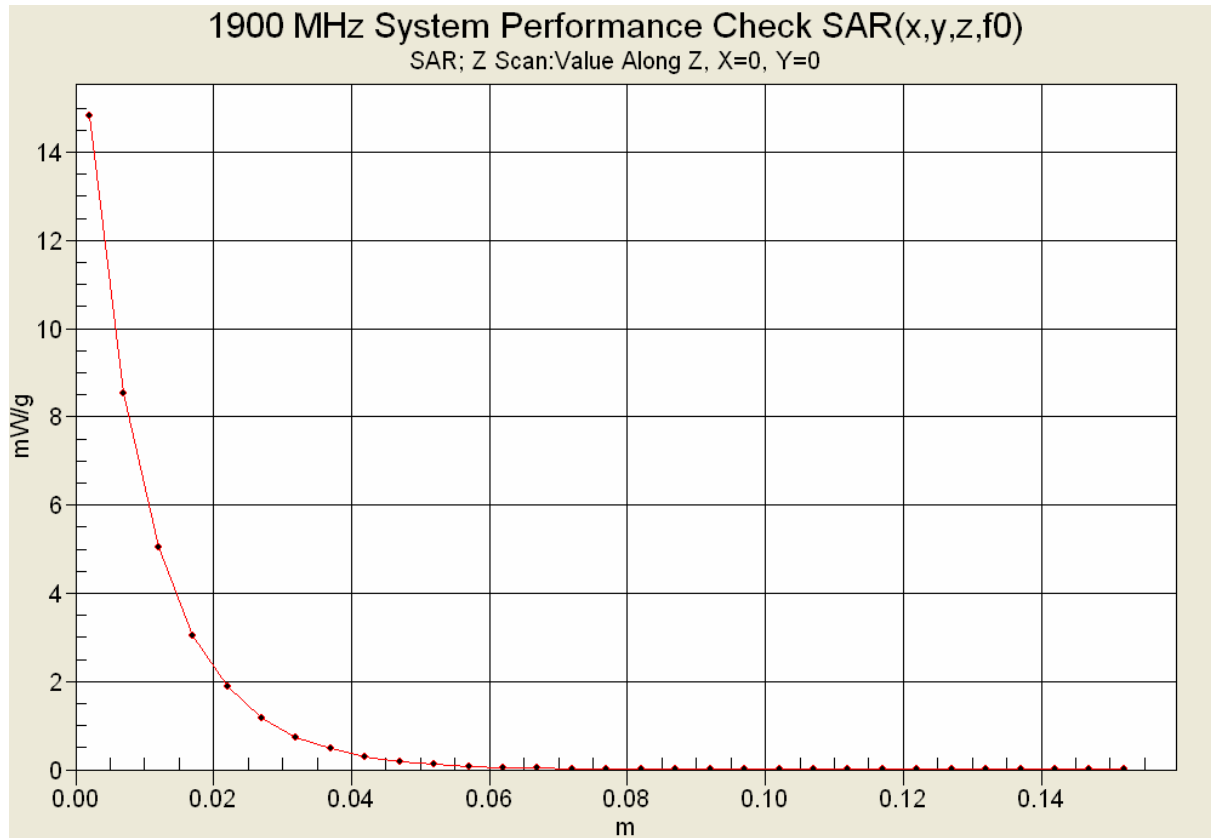
Maximum value of SAR (measured) = 14.8 mW/g






Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	


## Z-Axis Scan





Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01

## 835 MHz System Performance Check & DUT Evaluation (Body)

\*\*\*\*\*

Celltech Labs Inc  
Test Result for UIM Dielectric Parameter  
Tue 11/Mar/2008  
Frequency (GHz)

FCC\_eHFCC Bulletin 65 Supplement C (June 2001) Limits for Head Epsilon

FCC\_sHFCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma

FCC\_eB FCC Limits for Body Epsilon


FCC\_sB FCC Limits for Body Sigma



Test\_e Epsilon of UIM

Test\_s Sigma of UIM

\*\*\*\*\*

Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.7350	55.59	0.96	57.69	0.86
0.7450	55.55	0.96	57.71	0.87
0.7550	55.51	0.96	57.45	0.88
0.7650	55.47	0.96	57.42	0.89
0.7750	55.43	0.97	57.44	0.89
0.7850	55.39	0.97	57.26	0.91
0.7950	55.36	0.97	57.21	0.92
0.8050	55.32	0.97	57.14	0.93
0.8150	55.28	0.97	56.95	0.94
0.8250	55.24	0.97	57.09	0.95
0.8350	55.20	0.97	56.87	0.96
0.8450	55.17	0.98	56.82	0.97
0.8550	55.14	0.99	56.80	0.98
0.8650	55.11	1.01	56.85	0.99
0.8750	55.08	1.02	56.64	1.00
0.8850	55.05	1.03	56.60	1.01
0.8950	55.02	1.04	56.47	1.02
0.9050	55.00	1.05	56.48	1.03
0.9150	55.00	1.06	56.47	1.04
0.9250	54.98	1.06	56.38	1.05
0.9350	54.96	1.07	56.20	1.06

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Test Lab Certificate No. 2470.01


## 1900 MHz System Performance Check & 1880 MHz DUT Evaluation (Body)



\*\*\*\*\*

Celltech Labs Inc.  
Test Result for UIM Dielectric Parameter  
Mon 10/Mar/2008  
Frequency (GHz)  
FCC\_eHFCC Bulletin 65 Supplement C (June 2001) Limits for Head Epsilon  
FCC\_sHFCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma  
FCC\_eB FCC Limits for Body Epsilon  
FCC\_sB FCC Limits for Body Sigma  
Test\_e Epsilon of UIM  
Test\_s Sigma of UIM


\*\*\*\*\*




Freq	FCC_eB	FCC_sB	Test_e	Test_s
1.8000	53.30	1.52	51.98	1.38
1.8100	53.30	1.52	51.97	1.40
1.8200	53.30	1.52	51.86	1.41
1.8300	53.30	1.52	51.94	1.42
1.8400	53.30	1.52	51.87	1.43
1.8500	53.30	1.52	51.83	1.43
1.8600	53.30	1.52	51.73	1.44
1.8700	53.30	1.52	51.73	1.46
1.8800	53.30	1.52	51.65	1.47
1.8900	53.30	1.52	51.61	1.48
1.9000	53.30	1.52	51.58	1.49
1.9100	53.30	1.52	51.66	1.50
1.9200	53.30	1.52	51.51	1.52
1.9300	53.30	1.52	51.55	1.52
1.9400	53.30	1.52	51.53	1.54
1.9500	53.30	1.52	51.56	1.54
1.9600	53.30	1.52	51.47	1.56
1.9700	53.30	1.52	51.46	1.58
1.9800	53.30	1.52	51.43	1.59
1.9900	53.30	1.52	51.37	1.59
2.0000	53.30	1.52	51.29	1.62

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

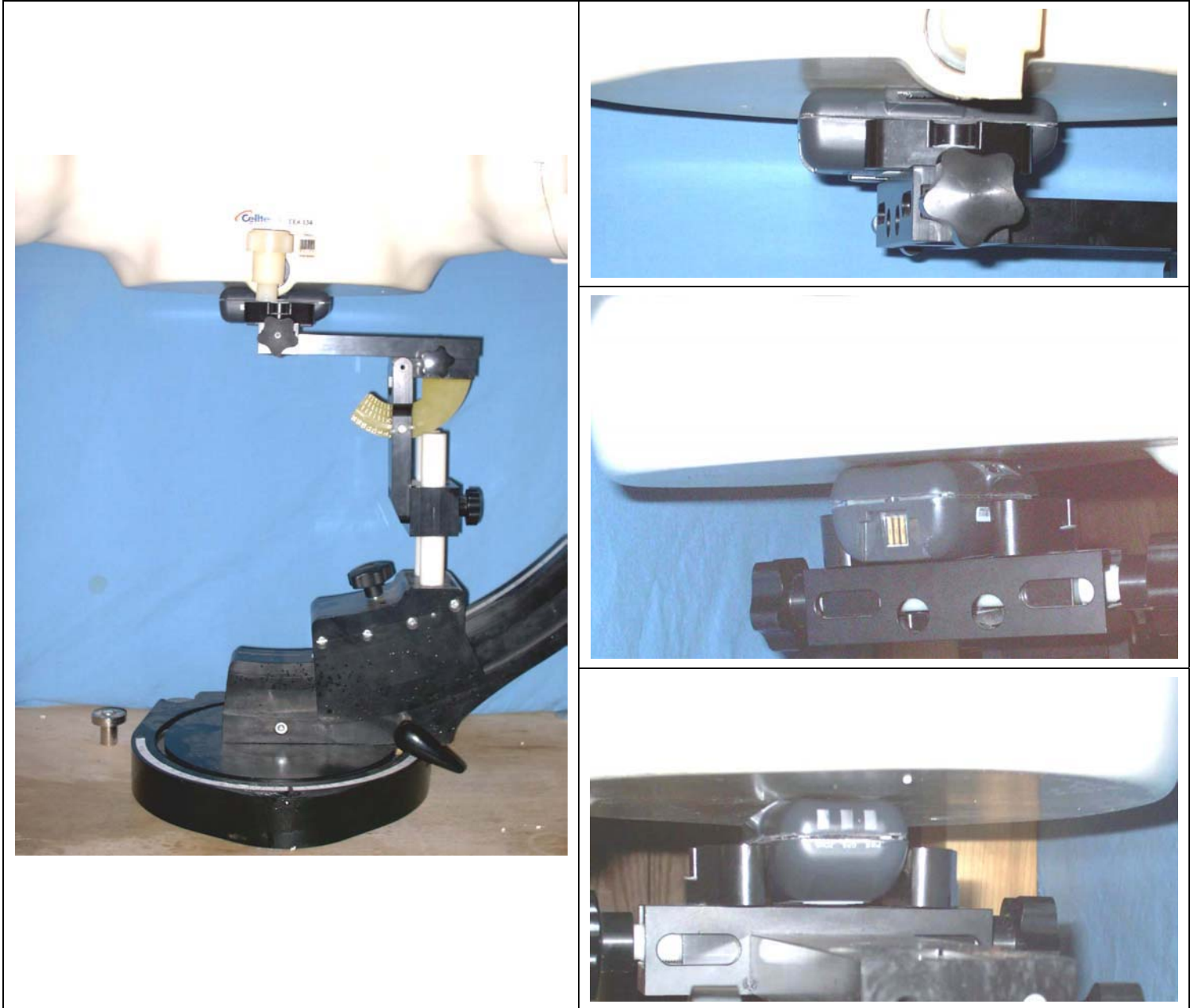
## APPENDIX D - SAR TEST SETUP & DUT PHOTOGRAPHS


Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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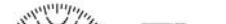
	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	
Test Lab Certificate No. 2470.01				

## ANKLE-WORN SAR TEST SETUP PHOTOGRAPHS

### Inner Edge of DUT Touching Planar Phantom

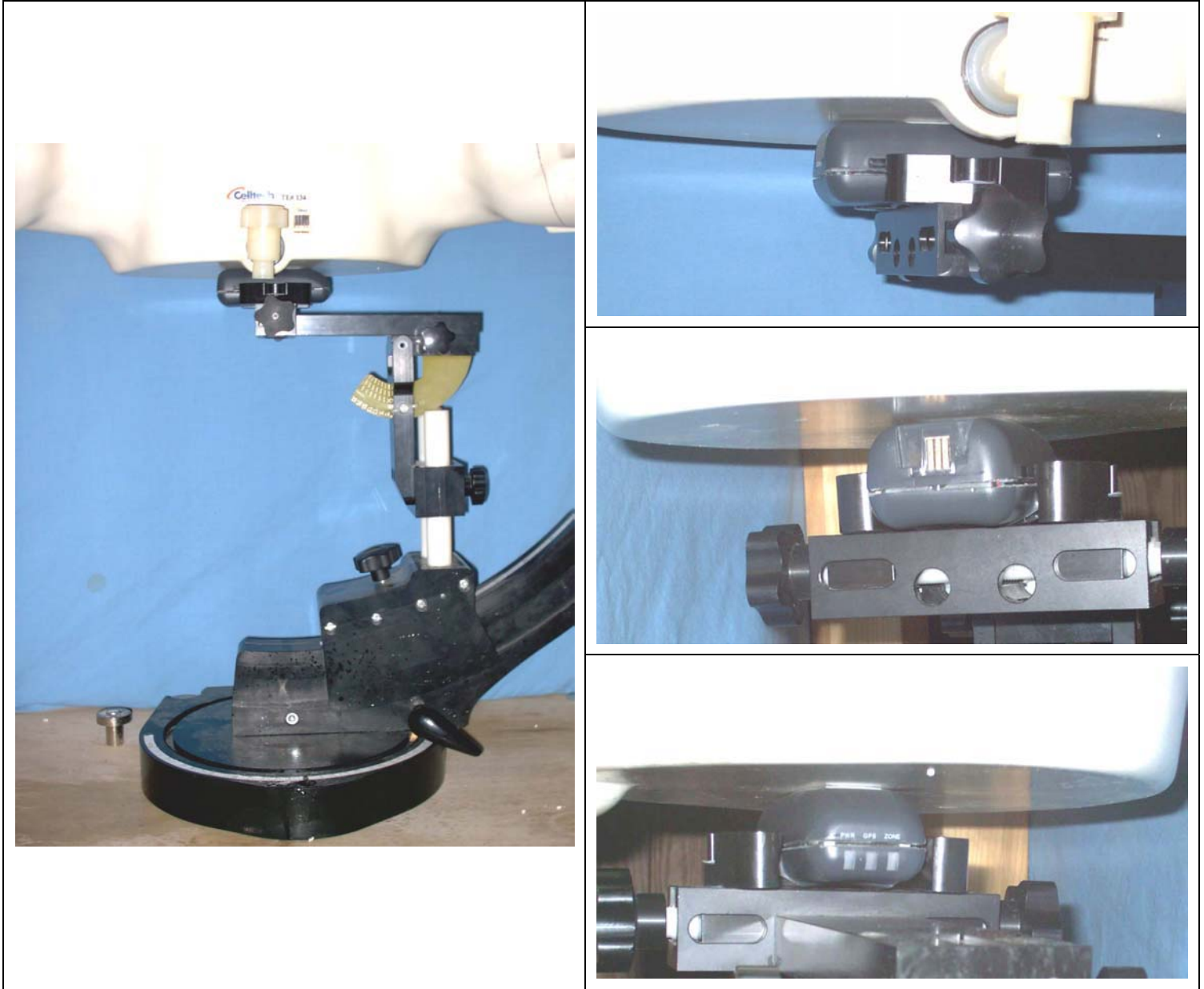



Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	




## BODY SAR TEST SETUP PHOTOGRAPHS

### Outer Edge of DUT Touching Planar Phantom




Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	
Test Lab Certificate No. 2470.01				

## DUT PHOTOGRAPHS

				
Test Sample - Outer Edge of DUT		Test Sample - Inner Edge of DUT		
				
Test Sample - Side view of outer edge		Test Sample - Opposite side view of outer edge		
				
Test Sample - Side view of inner edge		Test Sample - Opposite side view of inner edge		

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	  Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## DUT PHOTOGRAPHS



Identical Prototype - Outer Edge - Top end




Identical Prototype - Outer Edge - Bottom end






Identical Prototype - Side view of outer edge



Identical Prototype - Opposite side view of outer edge

Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	 
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

Test Lab Certificate No. 2470.01

## DUT PHOTOGRAPHS



Identical Prototype - Inner Edge - Bottom end




Identical Prototype - Inner Edge - Top end





Identical Prototype - Outer Edge



Identical Prototype - Inner Edge

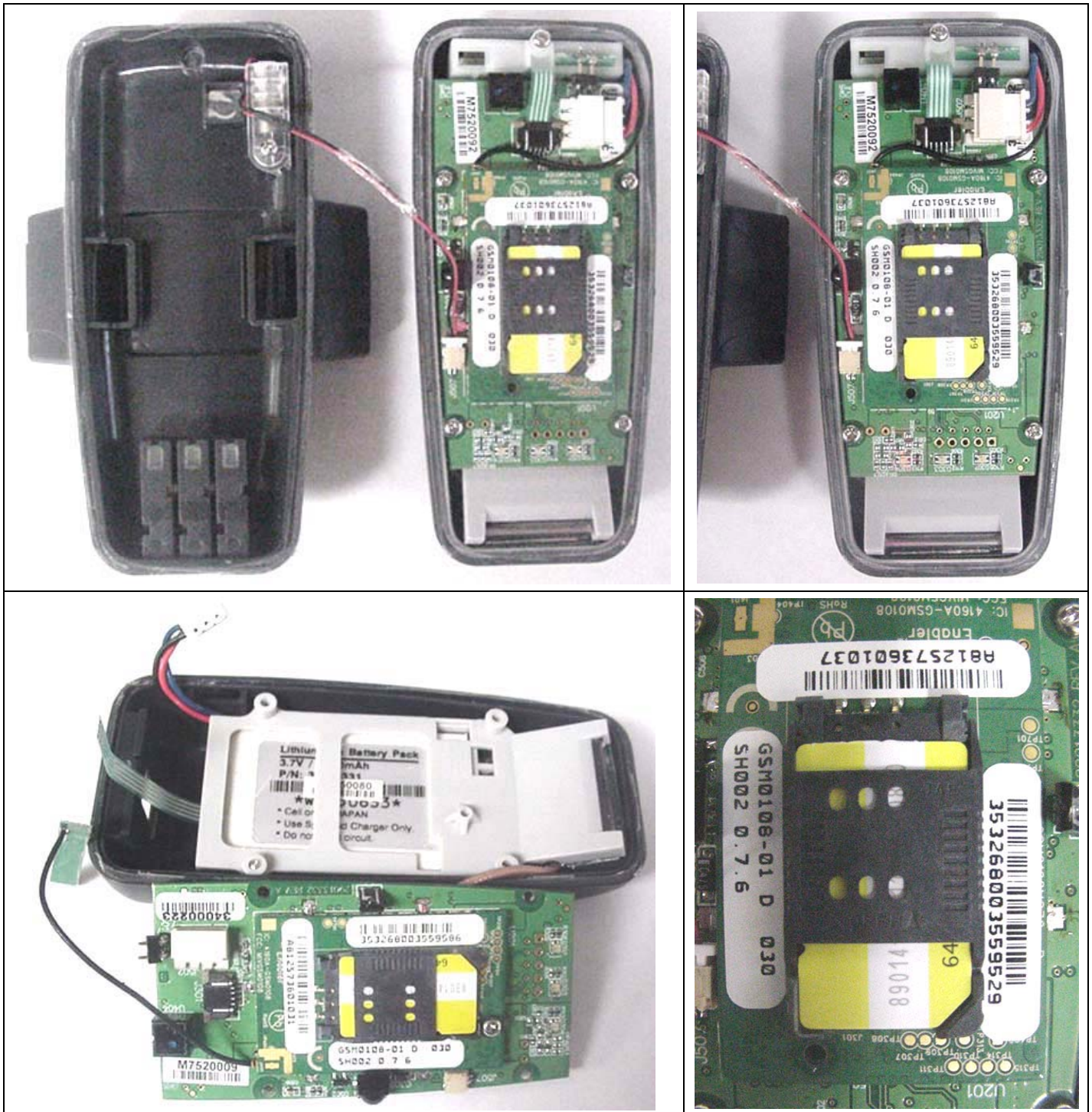
Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

Test Lab Certificate No. 2470.01

## DUT PHOTOGRAPHS

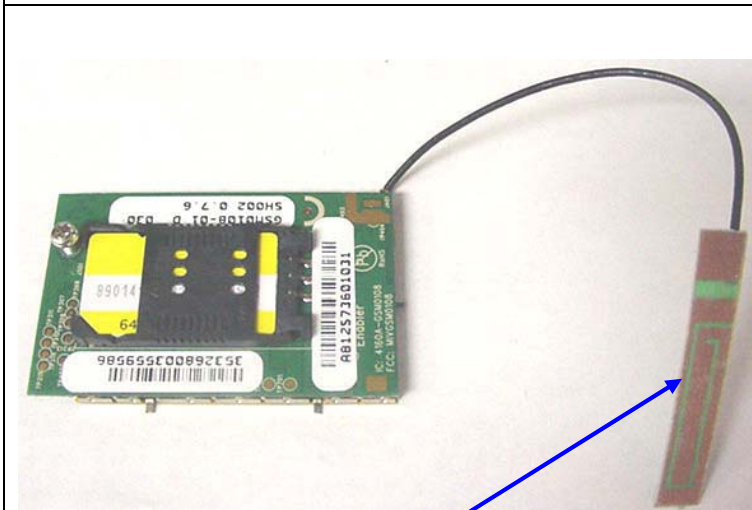
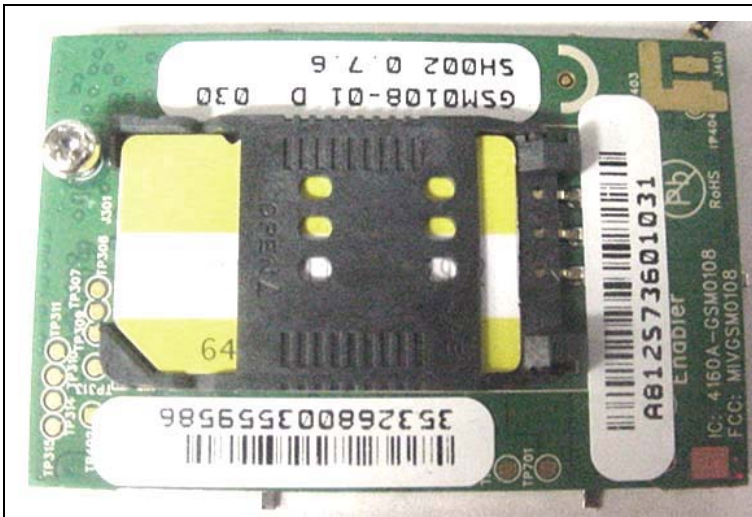


Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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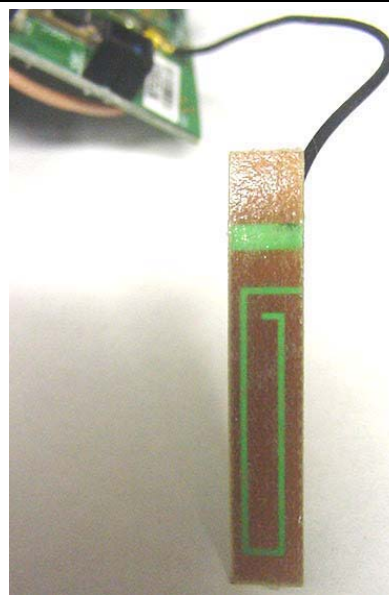
	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	


Test Lab Certificate No. 2470.01

## DUT PHOTOGRAPHS





Antenna



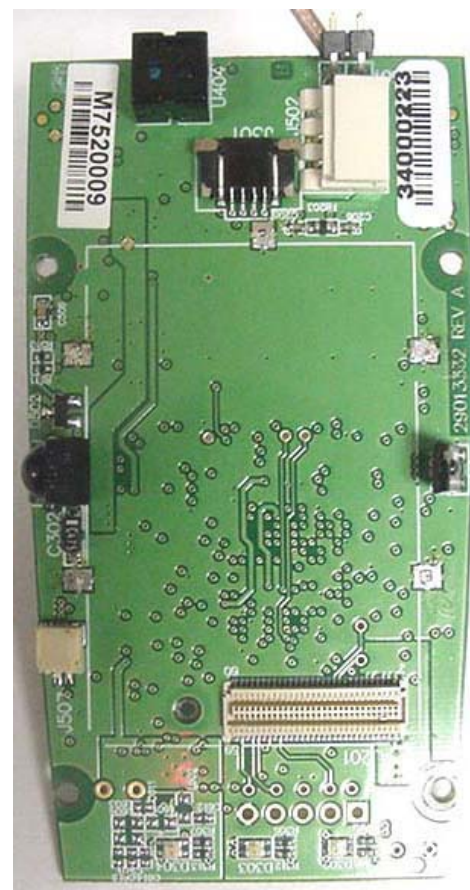
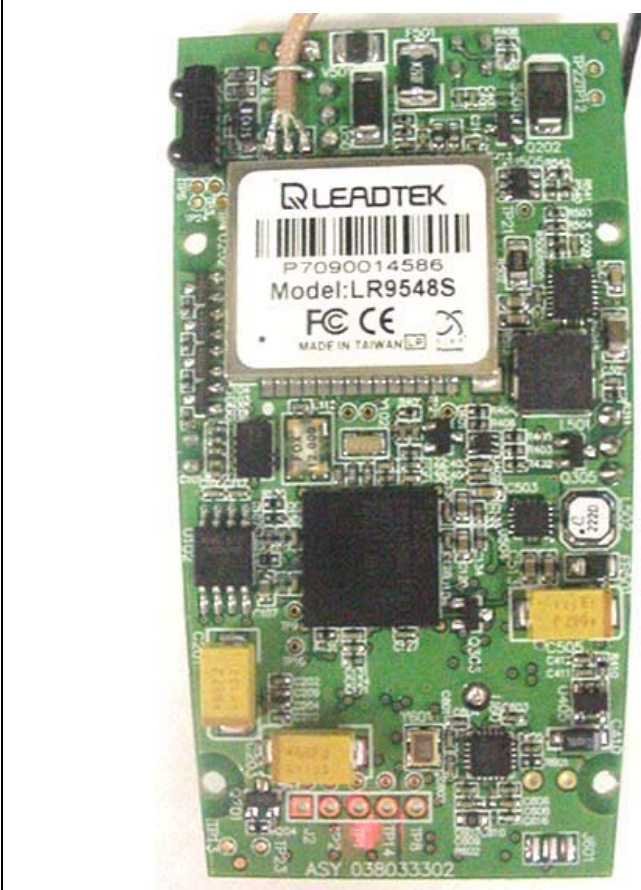
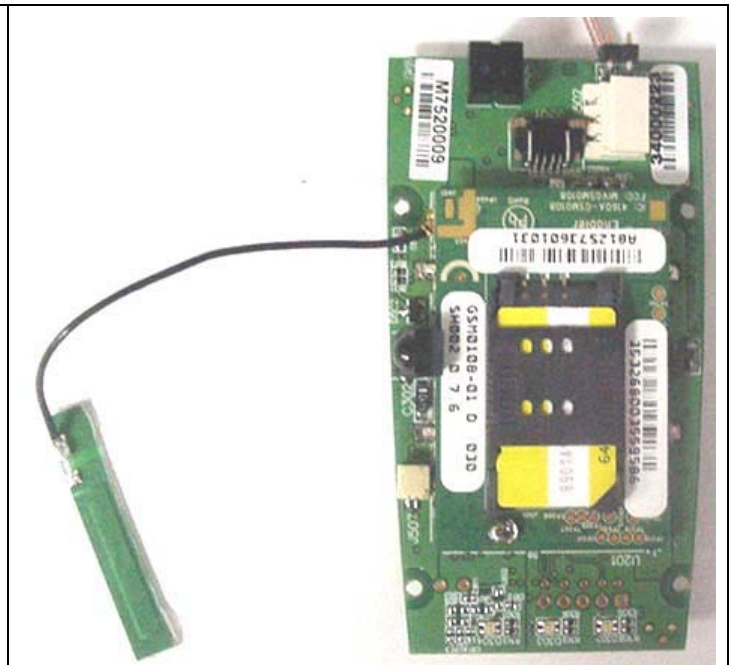
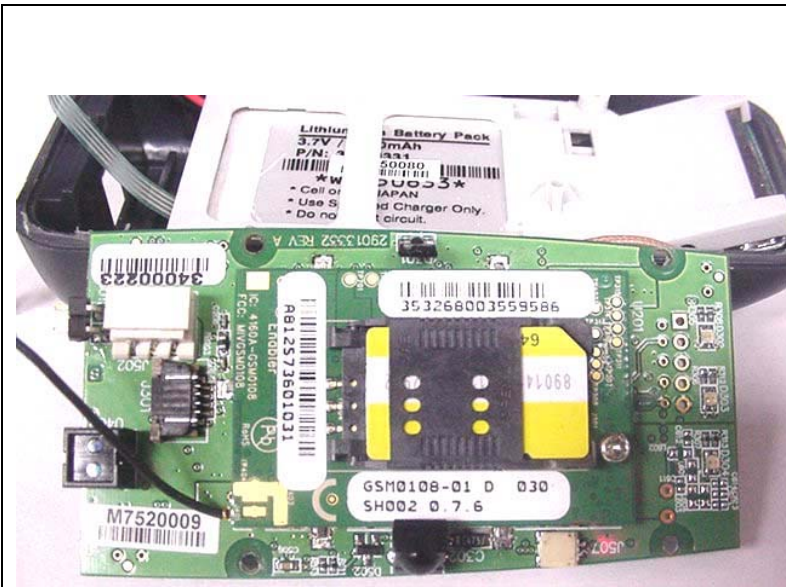
Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

Test Lab Certificate No. 2470.01

## DUT PHOTOGRAPHS




Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	Date(s) of Evaluation March 10-11, 2008	Test Report Serial No. 031008NC3-T888-S24G	Test Report Revision No. Rev. 1.2 (3rd Release)	 
	Test Report Issue Date May 16, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	



Test Lab Certificate No. 2470.01

## DUT PHOTOGRAPHS




Company:	Pro Tech Monitoring, Inc.		FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device			
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	<u>Date(s) of Evaluation</u> March 10-11, 2008	<u>Test Report Serial No.</u> 031008NC3-T888-S24G	<u>Test Report Revision No.</u> Rev. 1.2 (3rd Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> May 16, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

## APPENDIX G - SAM PHANTOM CERTIFICATE OF CONFORMITY

Company:	Pro Tech Monitoring, Inc.	FCC ID:	NC3WMTD3000	824.2-848.8 / 1850.2-1909.8 MHz	
Model(s):	WMTD3000	DUT Type:	Dual-Band PCS/Cellular GSM/GPRS Ankle-worn Tracking Device		
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# Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

## Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 BA
Series No	TP-1002 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

### Tests

The series production process used allows the limitation to test of first articles.  
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

### Standards

- [1] CENELEC EN 50361
- [2] IEEE P1528-200x draft 6.5
- [3] IEC PT 62209 draft 0.9

(\*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

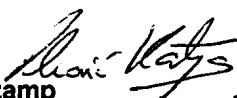
### Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date

18.11.2001

Signature / Stamp



**Schmid & Partner  
Engineering AG**



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Tel. +41 1 245 97 00, Fax +41 1 245 97 79