

	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

SAR TEST REPORT (FCC/IC)				
RF EXPOSURE EVALUATION		SPECIFIC ABSORPTION RATE		
APPLICANT	UNIDEN AMERICA CORPORATION			
DEVICE UNDER TEST (DUT)	PORTABLE 1.9 GHz UPCS/LE-PCS DECT HEADSET PHONE			
TRANSMIT FREQUENCY RANGE	1921.536 - 1928.448 MHz			
DEVICE MODEL(S)	CT14			
DEVICE IDENTIFIER(S)	FCC ID:	AMWUC577R	IC:	513C-UC577
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			
	IEEE 1528-2003			
	IEC 62209-1:2005			
FCC DEVICE CLASSIFICATION	Part 15 Unlicensed PCS Portable Transmitter held to ear (PUE)		47 CFR §15(D)	
IC DEVICE CLASSIFICATION	2 GHz Licence Exempt Personal Communications Service Device (PCS)		RSS-213	
RF EXPOSURE CATEGORY	General Population / Uncontrolled			
RF EXPOSURE EVALUATION(S)	Body-worn			
DATE(S) OF EVALUATION(S)	August 13, 2008			
TEST REPORT SERIAL NO.	081308AMW-T920-S15D			
TEST REPORT REVISION NO.	Revision 1.0	Initial Release	August 27, 2008	
TEST REPORT SIGNATORIES	Testing Performed By		Test Report Prepared By	
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TEST LAB ACCREDITATION(S)	 Test Lab Certificate No. 2470.01			

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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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	UNIDEN AMERICA CORPORATION			
	Address	Engineering Services Office - 181 N. Country Club Road, Lake City, SC 29560 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)			
	IC	RSS-102 Issue 2			
	IEEE	1528-2003			
	IEC	62209-1:2005			
Device RF Exposure Category	Portable	General Population / Uncontrolled Environment			
Device Classification(s)	FCC	Part 15 Unlicensed PCS portable Tx held to ear (PUE)	47 CFR §15(D)		
	IC	2 GHz Licence Exempt Personal Communications Service Device (PCS)	RSS-213		
Device Identifier(s)	FCC ID:	AMWUC577R			
	IC:	513C-UC577			
	Model(s)	CT14			
	Serial No.	2 (Pre-production)			
Device Description	Portable 1.9 GHz UPCS/LE-PCS DECT Headset Phone				
Application Type	Certification				
Transmit Frequency Range(s)	1921.536 - 1928.448 MHz				
Mode(s) of Operation	TDMA/TDD				
Reference RF Output Power	18.5 dBm	70.8 mW	Conducted	1924.992 MHz	
Source-Based Time-Averaged	4.52 dBm	2.83 mW	Conducted	1924.992 MHz	
Maximum Duty Cycle Tested	4 %	Source-Based Time-Averaged		Crest Factor: 1:25	
Antenna Type(s) Tested	Internal				
Battery Type(s) Tested	Ni-MH	2.4V	650mAh	Model: BT-1011	
Body-worn Accessories Tested	Plastic Belt-Clip		Part No.: none		
Audio Accessories Tested	Plantronics Headset-Microphone		Part No.: 80229-00		
Max. SAR Level(s) Evaluated	Body-worn	0.006 W/kg	Peak SAR level from Area Scan	FCC/IC SAR Limit	1.6 W/kg 1g average
<p>Celltech Labs Inc. declares under its sole responsibility that this wireless portable 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), Industry Canada RSS-102 Issue 2, IEEE Standard 1528-2003 and IEC Standard 62209-1:2005. All measurements were performed in accordance with the SAR system manufacturer recommendations.</p> <p>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.</p> <p>The results and statements contained in this report pertain only to the device evaluated.</p> <p>This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.</p>					
Test Report Approved By			Sean Johnston	Celltech Labs Inc.	



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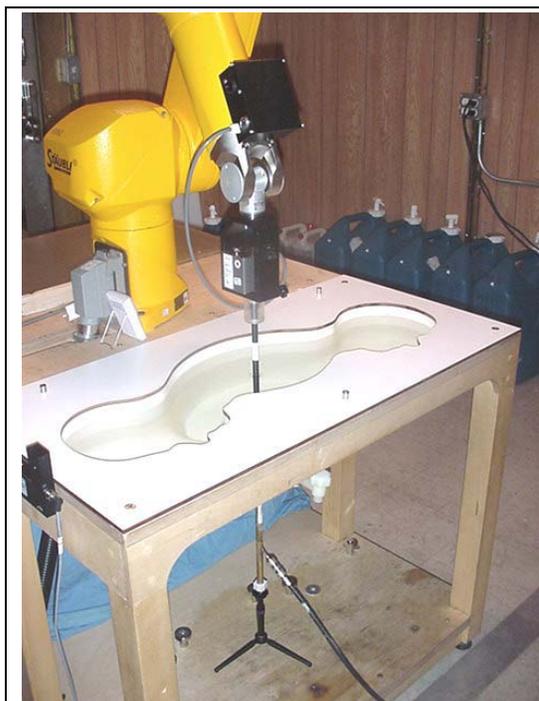
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1.0 INTRODUCTION

This measurement report demonstrates that the Uniden America Corporation Model: CT14 Portable 1.9 GHz UPCS/LE-PCS DECT Body-worn Headset Phone 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]), IC RSS-102 Issue 2 (see reference [4]), IEEE Standard 1528-2003 (see reference [5]) and IEC Standard 62209-1:2005 (see reference [6]) were employed. A description of the product, 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

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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3.0 MEASUREMENT SUMMARY

BODY-WORN SAR EVALUATION														
Freq.	Ch.	Test Mode	Duty Cycle	Crest Factor	Batt. Type	Phantom Section	Device Position	Accessories			Reference RF Conducted Output Power (dBm)		Measured SAR Level	
								Body	Dist.	Audio	Cond.	SBTA	W/kg	Peak/1g
1924.992	3	TDMA/TDD	4%	1:25	Ni-MH	Planar	Back Side	Belt-Clip	6 mm	Headset	18.5	4.52	0.006	Peak
SAR LIMIT(S)						BODY		SPATIAL PEAK			RF EXPOSURE CATEGORY			
FCC 47 CFR 2.1093		Health Canada Safety Code 6				1.6 W/kg		1g average			General Population / Uncontrolled			
Date(s) of Evaluation		August 13, 2008					Relative Humidity		35				%	
Measured Fluid Type		1920 MHz Body					Atmospheric Pressure		101.1				kPa	
Dielectric Constant ϵ_r		IEEE Target		Measured	Deviation	Ambient Temperature		23.0				°C		
		53.3	± 5%	51.2	-3.9%	Fluid Temperature		23.5				°C		
Conductivity σ (mho/m)		IEEE Target		Measured	Deviation	Fluid Depth		≥ 15				cm		
		1.52	± 5%	1.52	0.0%	ρ (Kg/m ³)		1000						
Notes														
1.	Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.													
2.	The transmission band of the DUT is less than 10 MHz; therefore mid channel data only is reported (per FCC OET Bulletin 65, Supplement C, Edition 01-01 - see reference [3]).													
3.	The SAR level measured and reported is the peak SAR level measured from the area scan. The 1g-averaged SAR is not measured when the peak SAR value from the area scan evaluation is less than 1% of the 1g average limit. The mathematical formula used to extrapolate the SAR value at the surface from the zoom scan SAR values measured at 5 mm steps leading away from the surface assumes a curving slope (i.e. the SAR values gradually decrease as the probe moves away from the surface). When the peak SAR of a device is so low that the RF noise level is competing with the SAR level, the zoom scan measurements leading away from the surface are no longer a curving slope and the extrapolation formula cannot accurately estimate the 1g average SAR. Therefore the peak value from the area scan is reported in place of the 1g averaged SAR value whenever the peak values are less than 1% of the average limit. This avoids gross uncertainties in the 1g average SAR calculation while maintaining a conservative estimation of the SAR level.													
4.	The power drift of the DUT was measured by the DASY4 system during the SAR evaluation at the reference point of the phantom with low SAR. The drift level is inaccurate due to the SAR value at the reference point was close to the measurement noise floor and therefore is not reported.													
5.	The DUT battery was fully charged prior to the SAR evaluation.													
6.	The fluid temperature was measured prior to and after the SAR evaluation to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.													
7.	The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluation using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).													
8.	The SAR evaluation was performed within 24 hours of the system performance check.													

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
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4.0 DETAILS OF SAR EVALUATION

The Uniden America Corporation Model: CT14 Portable 1.9 GHz UPCS/LE-PCS DECT Body-worn Headset Phone was compliant for localized Specific Absorption Rate (Uncontrolled Exposure) based on the test provisions and conditions described below. Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A. The detailed test setup photographs are shown in Appendix D.

Body-worn Configuration

- 1) The back side of the DUT was evaluated for body-worn SAR with the attached plastic belt-clip accessory placed parallel to, and touching, the outer surface of the planar phantom. The belt-clip accessory provided a 6 mm spacing from the back side of the DUT to the outer surface of the planar phantom. The customer-supplied Plantronics headset-microphone audio accessory was connected to the DUT for the duration of the SAR evaluation.

Test Mode & Output Power

- 2) The DUT was placed into test mode using the keypad with internal test software provided by the manufacturer.
- 3) The DUT was tested at maximum power and source-based time-averaged duty cycle (4%) with a modulated TDMA/TDD signal (crest factor = 1:25).
- 4) The RF conducted output power of the DUT could not be measured due to an internal antenna. The DUT was evaluated for SAR at the maximum RF conducted output power level preset by the manufacturer.
- 5) The conducted output power level referenced in this report was measured by Uniden prior to the SAR evaluation.
- 6) The DUT battery was fully charged prior to the SAR evaluation.

Test Conditions

- 7) The fluid temperature was measured prior to and after the SAR evaluation 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 mixture were measured prior to the SAR evaluation using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).

5.0 EVALUATION PROCEDURES

- (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated using the SAM phantom.
- (ii) 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. 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. 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. 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 (5x5x7 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 ≥ 800 MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7x7x7 points) to ensure complete capture of the peak spatial-average SAR.

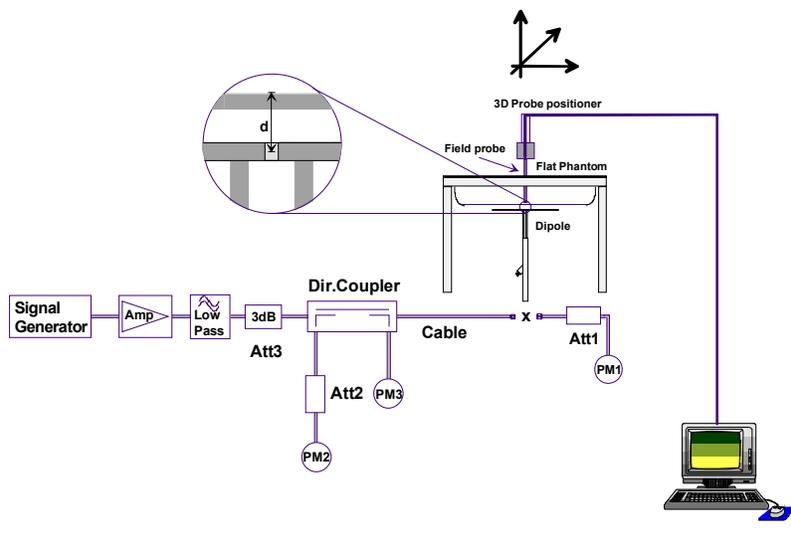
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Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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6.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations a system check was performed at the planar section of the SAM phantom with a 1900MHz dipole (see Appendix B for system performance check test plot). The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a 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 value (see Appendix E for system validation procedures).

SYSTEM PERFORMANCE CHECK EVALUATION																
Test Date	Equiv. Tissue	SAR 1g (W/kg)			Dielectric Constant ϵ_r			Conductivity σ (mho/m)			ρ (Kg/m ³)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
		Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.						
Aug 13	Body 1900	10.0 $\pm 10\%$	10.0	0.0%	51.2 $\pm 5\%$	51.2	0.0%	1.49 $\pm 5\%$	1.49	0.0%	1000	23.0	23.8	≥ 15	35	101.1
Note(s)		1. The target SAR value is referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).														
		2. The target dielectric parameters are referenced from the System Validation procedure performed by Celltech Labs Inc. (see Appendix E).														
		3. The fluid temperature was measured prior to and after the system performance check to ensure the temperature remained within $\pm 2^\circ\text{C}$ of the fluid temperature reported during the dielectric parameter measurements.														
		4. The SAR evaluations were performed within 24 hours of the system performance check.														



System Performance Check Measurement Setup Diagram



1900 MHz Validation Dipole Setup

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7.0 SIMULATED EQUIVALENT TISSUES

The 1900/1920MHz simulated equivalent tissue mixture consisted of Glycol-monobutyl, water and salt. The fluid was prepared according to standardized procedures and measured for dielectric parameters (permittivity and conductivity).

1900/1920 MHz SIMULATED TISSUE MIXTURE		
INGREDIENT	1900 MHz Body	1920 MHz Body
	System Performance Check	DUT Evaluation
Water	69.85 %	69.85 %
Glycol Monobutyl	29.89 %	29.89 %
Salt	0.26 %	0.26 %

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.			

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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>	
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

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10.0 PROBE SPECIFICATION (EX3DV4)

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: ± 0.2 dB (30 MHz to 3 GHz)

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

Dynamic Range: 10 μ W/g to >100 mW/g; Linearity: ± 0.2 dB
 (noise: typically $< 1 \mu$ 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%.



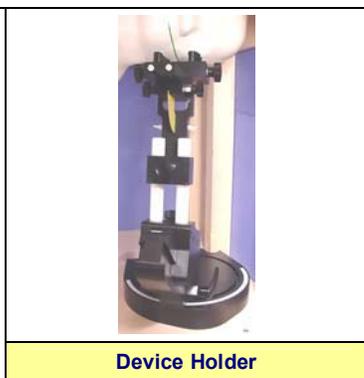
11.0 SAM PHANTOM V4.0C

The SAM phantom V4.0C is a fiberglass shell phantom with a 2.0 mm (+/-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).



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°. 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.



	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

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	NA	NA
x	-Robot	00046	599396-01	NA	NA
x	-DAE4	00019	353	22Apr08	22Apr09
x	-EX3DV4 E-Field Probe	00213	3600	19Apr08	19Apr09
x	-1900 MHz Validation Dipole	00032	151	13Aug08	13Aug09
x	-SAM Phantom V4.0C	00154	1033	NA	NA
	-Barski Planar Phantom	00155	03-01	NA	NA
	-Plexiglas Side Planar Phantom	00156	161	NA	NA
	-Plexiglas Validation Planar Phantom	00157	137	NA	NA
	ALS-PR-DIEL Dielectric Probe Kit	00160	260-00953	NA	NA
x	HP 85070C Dielectric Probe Kit	00033	US39240170	NA	NA
x	Gigatronics 8652A Power Meter	00007	1835272	23Apr08	23Apr09
x	Gigatronics 80701A Power Sensor	00014	1833699	23Apr08	23Apr09
x	HP 8753ET Network Analyzer	00134	US39170292	28Apr08	28Apr09
x	Rohde & Schwarz SMR20 Signal Generator	00006	100104	23Apr08	23Apr09
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	NR	NR
	Amplifier Research 10W1000C Power Amplifier	00041	27887	NR	NR
	Nextec NB00383 Microwave Amplifier	00151	0535	NR	NR
Notes	NA = Not Applicable		NR = Not Required		

	Date(s) of Evaluation August 13, 2008	Test Report Serial No. 081308AMW-T920-S15D	Test Report Revision No. Rev. 1.0 (Initial Release)	
	Test Report Issue Date August 27, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

14.0 MEASUREMENT UNCERTAINTIES

UNCERTAINTY BUDGET FOR DEVICE EVALUATION						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V _i or V _{eff}
Measurement System						
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	∞
Test Sample Related						
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	∞
Phantom and Setup						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	0	Normal	1	0.64	0.0	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	3.9	Normal	1	0.6	2.3	∞
Combined Standard Uncertainty					10.60	
Expanded Uncertainty (k=2)					21.19	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003						

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

MEASUREMENT UNCERTAINTIES (CONT.)

UNCERTAINTY BUDGET FOR SYSTEM VALIDATION						
Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)	V _i or V _{eff}
Measurement System						
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	∞
Dipole						
Dipole Positioning	2	Normal	1.732050808	1	1.2	∞
Power & Power Drift	4.7	Normal	1.732050808	1	2.7	∞
Phantom and Setup						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	0	Normal	1	0.64	0.0	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	0	Normal	1	0.6	0.0	∞
Combined Standard Uncertainty					8.49	
Expanded Uncertainty (k=2)					16.98	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003						

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Test Report Issue Date</u> August 27, 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.
- [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.
- [6] IEC International Standard 62209-1:2005 - "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures."

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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APPENDIX A - SAR MEASUREMENT DATA

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 08/13/2008

Body-worn SAR - Back Side of DUT with Plastic Belt-Clip & Headset - Mid Ch. - 1924.992 MHz

DUT: Uniden Model: CT14; Type: 1.9GHz UPCS DECT Cordless Headset Phone; Serial: #2 (Pre-production)

Ambient Temp: 23°C; Fluid Temp: 23.8°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: TDMA/TDD

RF Output Power: 18.5 dBm (Conducted)

Frequency: 1924.99 MHz; Duty Cycle: 1:25

2.4V 650mAh Ni-MH Battery Pack (BT-1011)

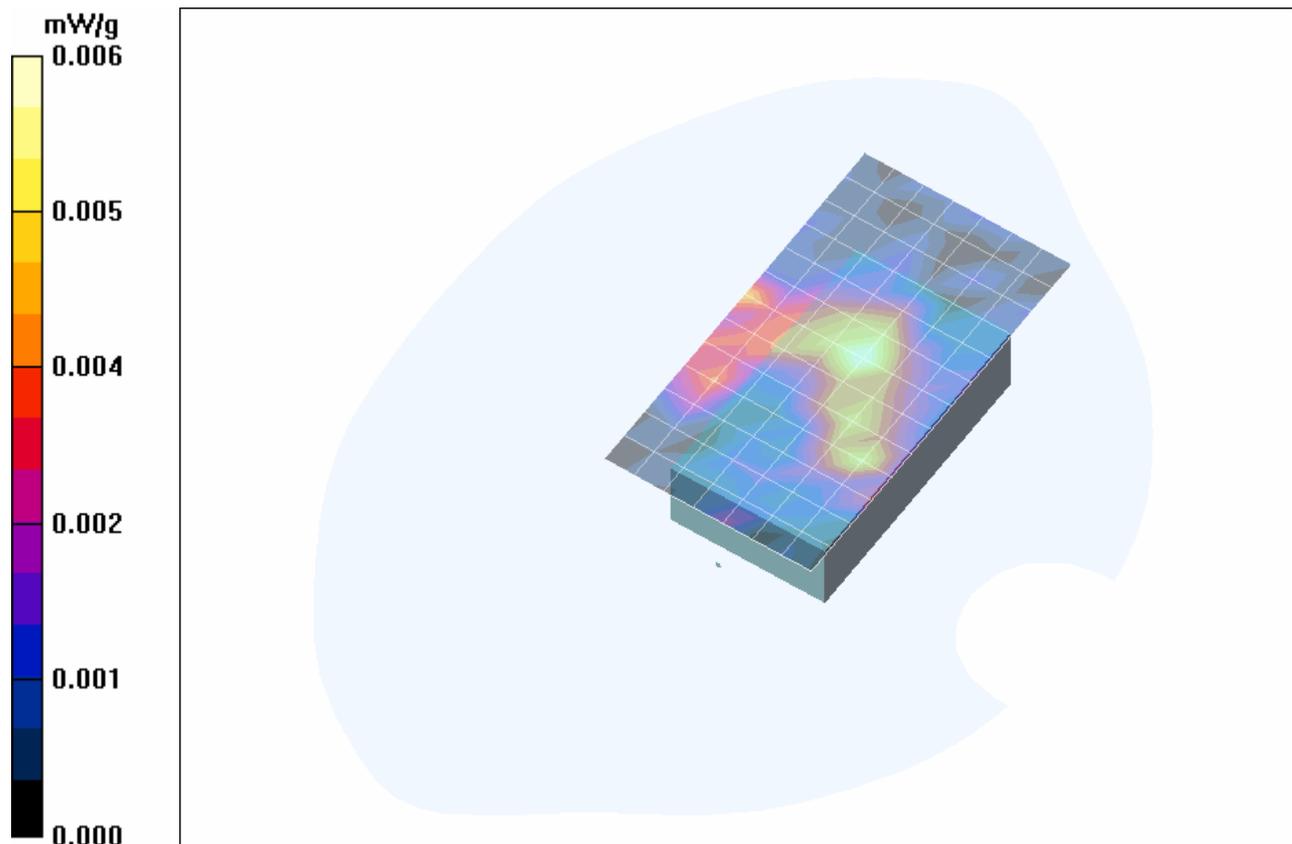
Medium: M1900 Medium parameters used: $f = 1924.99 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 51.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(7.07, 7.07, 7.07); Calibrated: 19/04/2008
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 6 mm Belt-Clip Spacing from Back Side of DUT to Planar Section of SAM Phantom

Area Scan (8x14x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.006 mW/g



Due to the very low SAR level measured, the Z-axis scan is only reporting noise. The DASY4 software adjusts the scale according to the measured SAR level, which for this evaluation is close to the measurement noise floor.

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX B - SYSTEM PERFORMANCE CHECK

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

Date Tested: 08/13/2008

System Performance Check - 1900 MHz Dipole - MSL

DUT: Dipole 1900 MHz; Asset: 00032; Serial: 151; Validation: 08/13/2008

Ambient Temp: 23°C; Fluid Temp: 23.8°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: $f = 1900 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51.2$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(7.07, 7.07, 7.07); Calibrated: 19/04/2008
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

System Performance Check - 1900 MHz Dipole

Area Scan (5x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 13.5 mW/g

System Performance Check - 1900 MHz Dipole

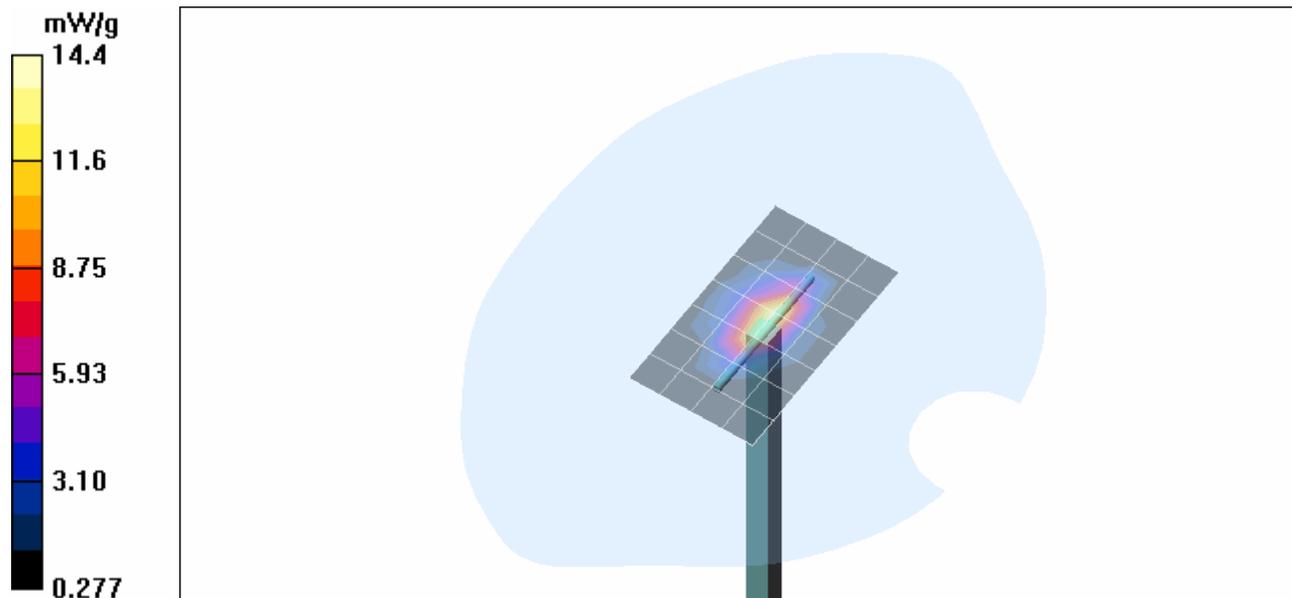
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.3 V/m; Power Drift = 0.069 dB

Peak SAR (extrapolated) = 18.4 W/kg

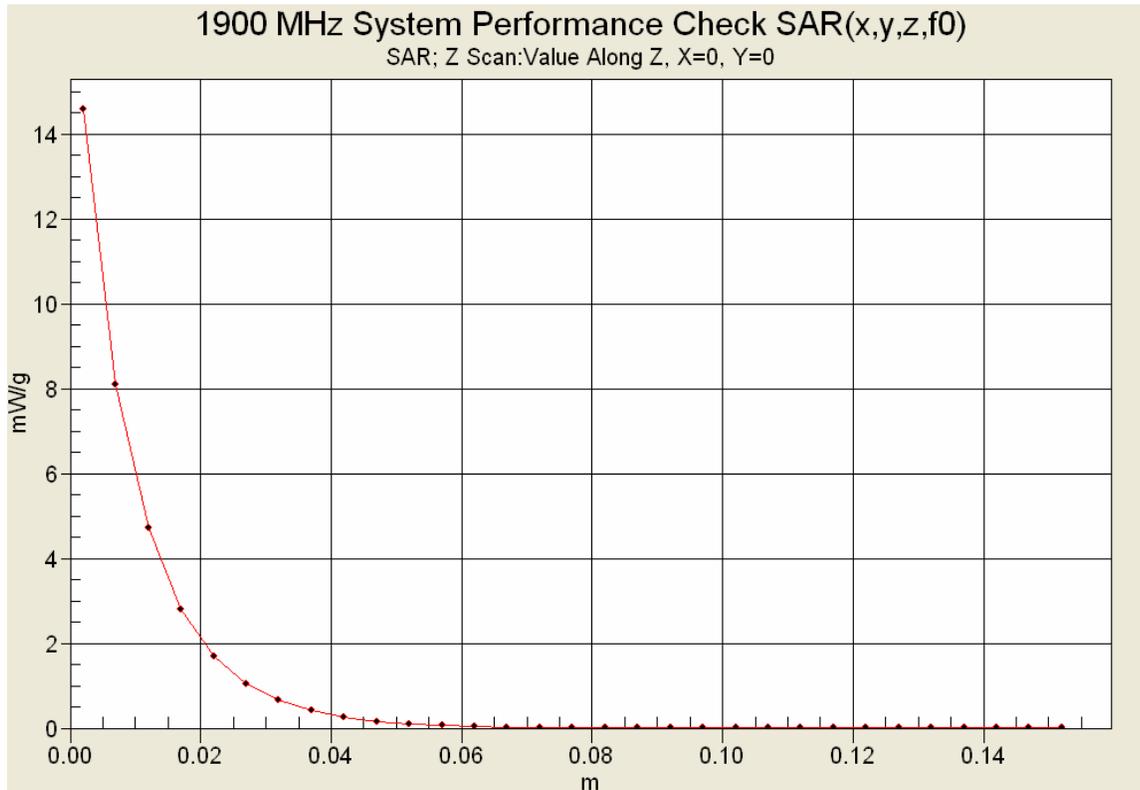
SAR(1 g) = 10 mW/g; SAR(10 g) = 5.21 mW/g

Maximum value of SAR (measured) = 14.4 mW/g



Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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Z-Axis Scan



	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

1900 MHz System Performance Check & 1920 MHz DUT Evaluation (Body)

Celltech Labs Inc.
 Test Result for UIM Dielectric Parameter
 Wed 13/Aug/2008
 Frequency (GHz)
 IEEE_eB 1528-2003 Limits for Body Epsilon
 IEEE_sB 1528-2003 Limits for Body Sigma
 Test_e Epsilon of UIM
 Test_s Sigma of UIM

Freq	IEEE_eB	IEEE_sB	Test_e	Test_s
1.8000	53.30	1.52	51.56	1.41
1.8100	53.30	1.52	51.49	1.39
1.8200	53.30	1.52	51.52	1.42
1.8300	53.30	1.52	51.31	1.42
1.8400	53.30	1.52	51.19	1.43
1.8500	53.30	1.52	51.26	1.44
1.8600	53.30	1.52	51.22	1.45
1.8700	53.30	1.52	51.26	1.46
1.8800	53.30	1.52	51.31	1.46
1.8900	53.30	1.52	51.04	1.50
1.9000	53.30	1.52	51.17	1.49
1.9100	53.30	1.52	51.09	1.49
1.9200	53.30	1.52	51.18	1.52
1.9300	53.30	1.52	50.97	1.51
1.9400	53.30	1.52	50.85	1.52
1.9500	53.30	1.52	50.81	1.53
1.9600	53.30	1.52	50.76	1.54
1.9700	53.30	1.52	50.79	1.57
1.9800	53.30	1.52	50.77	1.60
1.9900	53.30	1.52	50.85	1.58
2.0000	53.30	1.52	50.74	1.59

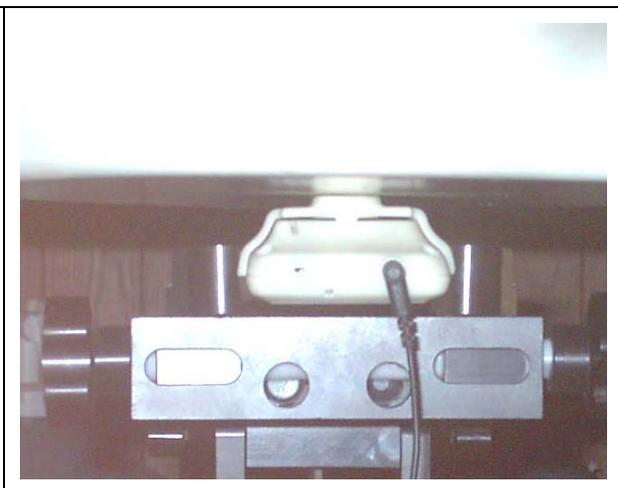
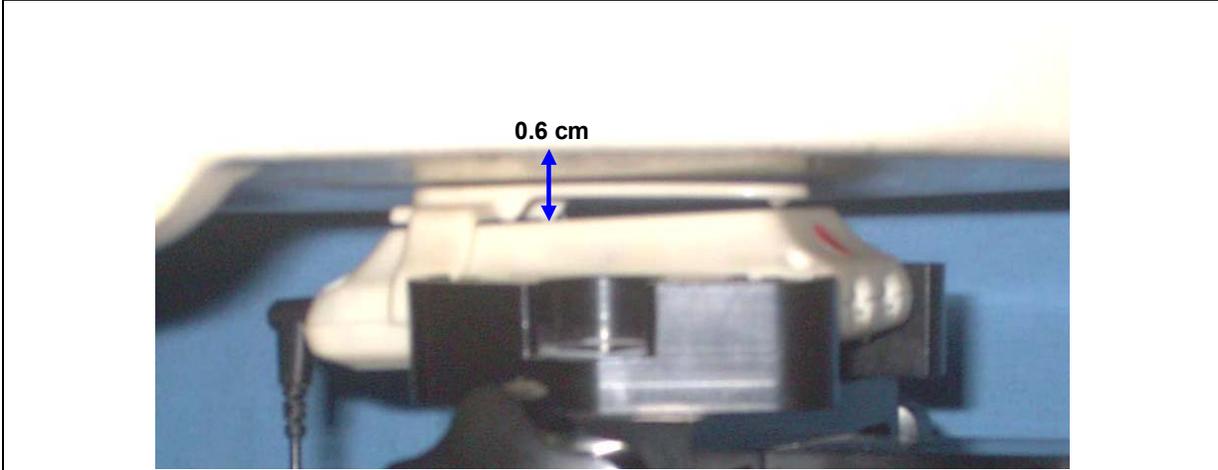
Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX D - SAR TEST SETUP & DUT PHOTOGRAPHS

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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BODY-WORN SAR TEST SETUP PHOTOGRAPHS
0.6 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
DUT with Headset-Microphone Audio Accessory



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	Test Report Issue Date August 27, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

DUT PHOTOGRAPHS



Applicant: Uniden America Corporation	FCC ID: AMWUC577R	IC: 513C-UC577	
Model(s): CT14 Portable UPCS/LE-PCS DECT Headset Phone	Freq.: 1921.536 - 1928.448 MHz		
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	Test Report Issue Date August 27, 2008	Description of Test(s) Specific Absorption Rate	RF Exposure Category General Population	

DUT PHOTOGRAPHS

	
Front side of Plastic Belt-Clip accessory	Back side of Plastic Belt-Clip accessory
	
Back side of DUT with battery and cover removed	Front side of DUT with Headset-Microphone accessory

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX E - SYSTEM VALIDATION

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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Date of Evaluation:	August 13, 2008	Validation Document Serial No.:	SV1900M-081308-R1.0		
Evaluation Type:	System Validation	Validation Dipole:	1900 MHz	Fluid Type:	Body

1900 MHz SYSTEM VALIDATION

Type:

1900 MHz Validation Dipole

Asset Number:

00032

Serial Number:

151

Place of Validation:

Celltech Labs Inc.

Date of Validation:

August 13, 2008

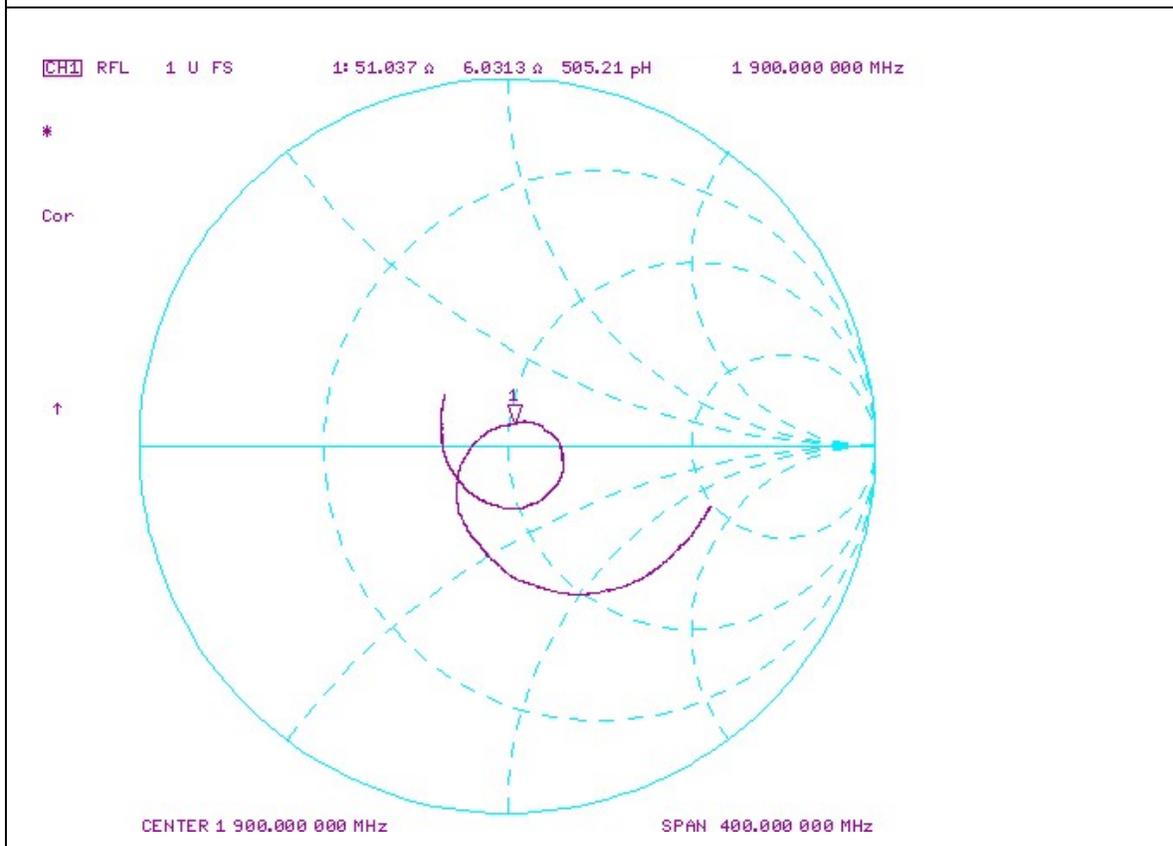
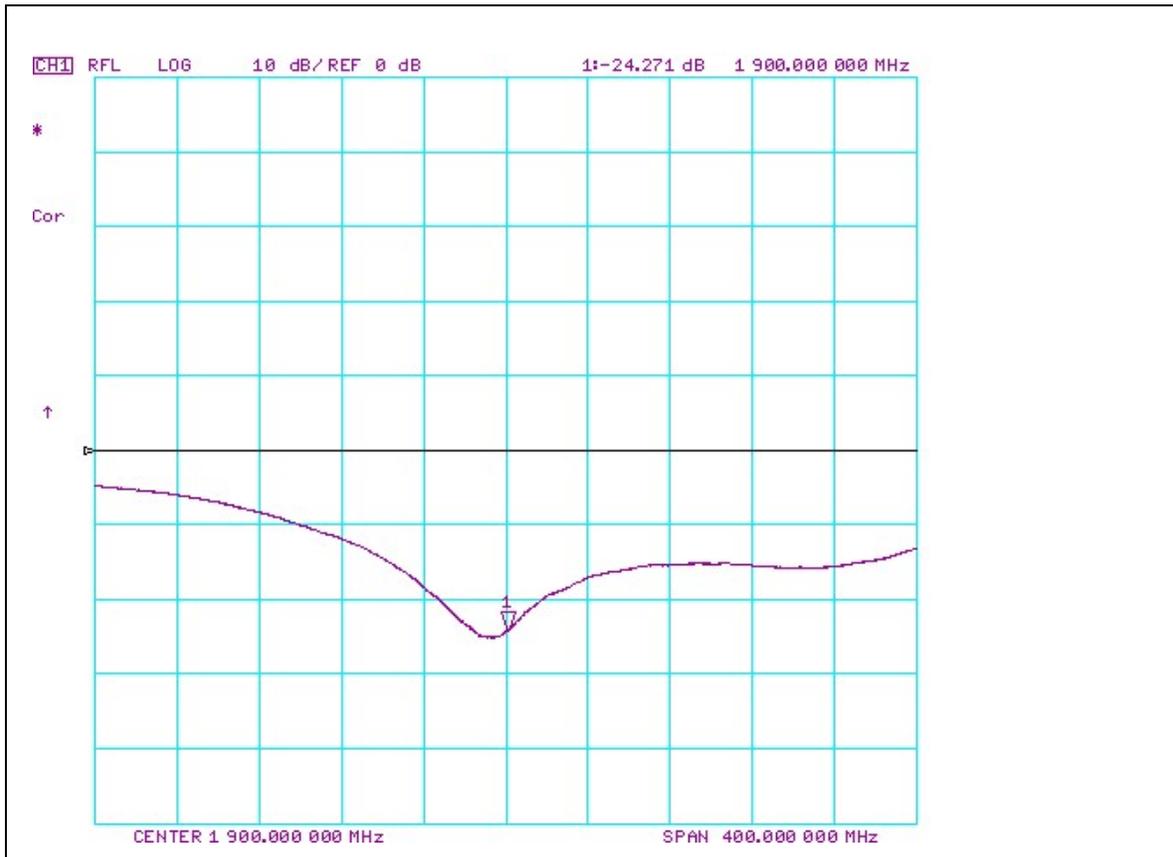
Celltech Labs Inc. hereby certifies that the 1900 MHz System Validation was performed on the date indicated above.

Performed by:

Sean Johnston

Signature:

2. Validation Dipole VSWR Data



3. Validation Dipole Dimensions

Frequency (MHz)	L (mm)	h (mm)	d (mm)
300	396.0	250.0	6.0
450	270.0	167.0	6.0
835	161.0	89.8	3.6
900	149.0	83.3	3.6
1450	89.1	51.7	3.6
1800	72.0	41.7	3.6
1900	68.0	39.5	3.6
2000	64.5	37.5	3.6
2450	51.5	30.4	3.6
3000	41.5	25.0	3.6

4. Validation Phantom

The validation phantom is the SAM (Specific Anthropomorphic Mannequin) twin phantom manufactured by Schmid & Partner Engineering AG. The SAM phantom is a Fiberglass shell integrated in a wooden table. The shape of the shell corresponds to the phantom defined by SCC34-SC2. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness: 2.0 ± 0.1 mm
Filling Volume: Approx. 25 liters
Dimensions: 50 cm (W) x 100 cm (L)



SAM Twin Phantom V4.0C



Fluid Depth (≥ 15.0 cm)

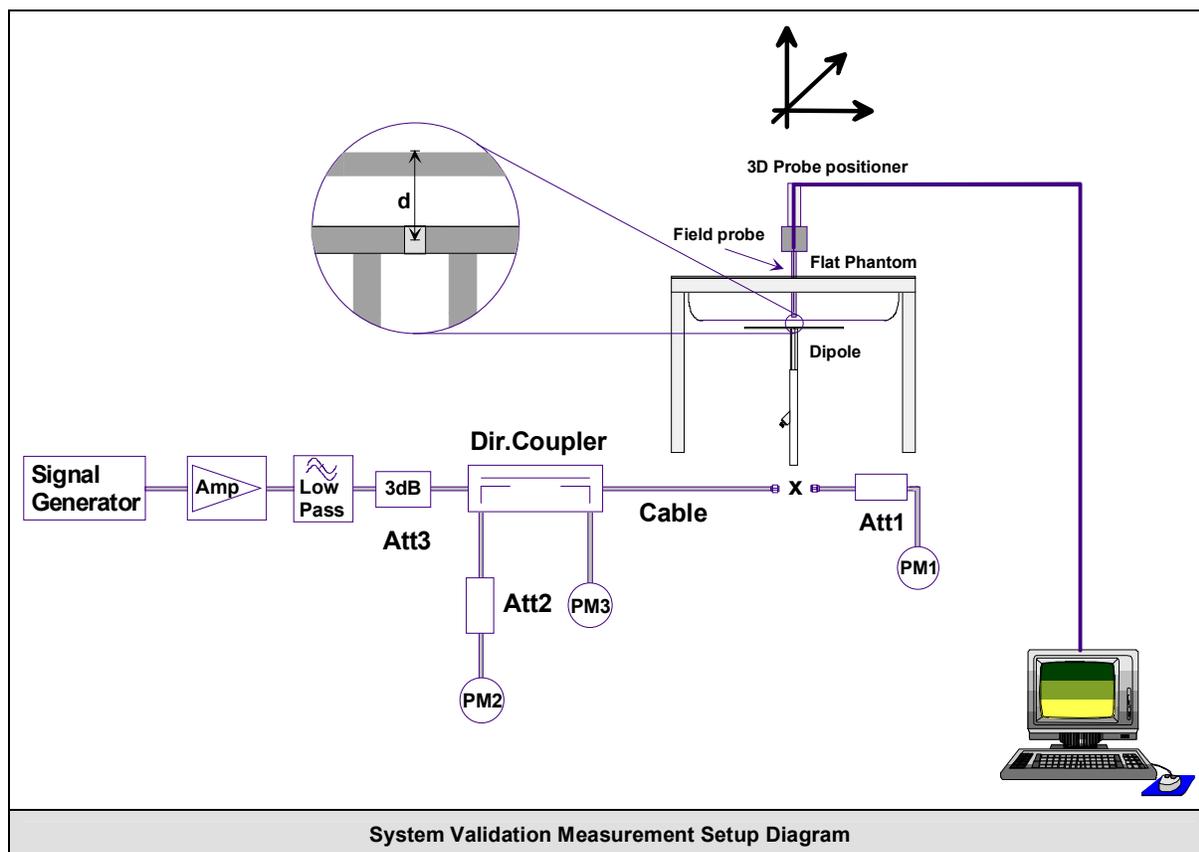
5. 1900 MHz System Validation Setup



6. SAR Measurement

Measurements were made using a dosimetric E-field probe EX3DV4 (S/N: 3600, Conversion Factor 7.07). The SAR measurement was performed with the E-field probe in mechanical detection mode only. The setup and determination of the forward power into the dipole was performed using the procedures described below.

First the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the dipole connector (X). The signal generator is adjusted for the desired forward power at the dipole connector (taking into account the attenuation of Att1) as read by power meter PM2. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2. If the signal generator does not allow adjustment in 0.01dB steps, the remaining difference at PM2 must be taken into consideration. PM3 records the reflected power from the dipole to ensure that the value is not changed from the previous value. The reflected power should be 50dB below the forward power.



7. Measurement Conditions

The planar phantom was filled with 1900 MHz Body tissue simulant.

Relative Permittivity: 51.2 (-4.0% deviation from target)
 Conductivity: 1.49 mho/m (-2.0% deviation from target)
 Fluid Temperature: 23.8 °C (Start of Test) / 23.8 °C (End of Test)
 Fluid Depth: ≥ 15.0 cm
 Environmental Conditions:
 Ambient Temperature: 23.0 °C
 Barometric Pressure: 101.1 kPa
 Humidity: 35%

The 1900 MHz Body tissue simulant consisted of the following ingredients:

Ingredient	Percentage by weight	
Water	69.85%	
Glycol	29.89%	
Salt	0.26%	
IEEE/IEC Target Dielectric Parameters (1900 MHz):	$\epsilon_r = 53.3 (+/-5\%)$	$\sigma = 1.52 \text{ S/m (+/-5\%)}$

8. System Validation SAR Results

SAR @ 0.25W Input averaged over 1g (W/kg)				SAR @ 1W Input averaged over 1g (W/kg)			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
9.95	+/- 10%	10.0	+0.5%	39.8	+/- 10%	40.0	+0.5%
SAR @ 0.25W Input averaged over 10g (W/kg)				SAR @ 1W Input averaged over 10g (W/kg)			
SPEAG Target		Measured	Deviation	SPEAG Target		Measured	Deviation
5.20	+/- 10%	5.21	+0.2%	20.8	+/- 10%	20.84	+0.2%

Dipole Type	Distance [mm]	Frequency [MHz]	SAR (1g) [W/kg]	SAR (10g) [W/kg]	SAR (peak) [W/kg]
D300V2	15	300	3.02	2.06	4.36
D450V2	15	450	5.01	3.36	7.22
D835V2	15	835	9.71	6.38	14.1
D900V2	15	900	11.1	7.17	16.3
D1450V2	10	1450	29.6	16.6	49.8
D1500V2	10	1500	30.8	17.1	52.1
D1640V2	10	1640	34.4	18.7	59.4
D1800V2	10	1800	38.5	20.3	67.5
D1900V2	10	1900	39.8	20.8	69.6
D2000V2	10	2000	40.9	21.2	71.5
D2450V2	10	2450	51.2	23.7	97.6
D3000V2	10	3000	61.9	24.8	136.7

Table 32.1: Numerical reference SAR values for SPEAG dipoles and flat phantom filled with body-tissue simulating liquid. Note: All SAR values normalized to 1 W forward power.

	Date of Evaluation:	August 13, 2008	Validation Document Serial No.:	SV1900M-081308-R1.0	
	Evaluation Type:	System Validation	Validation Dipole:	1900 MHz	Fluid Type:

Date Tested: 08/13/2008

System Validation - 1900 MHz Dipole - MSL

DUT: Dipole 1900 MHz; Asset: 00032; Serial: 151; Validation: 08/13/2008

Ambient Temp: 23°C; Fluid Temp: 23.8°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: $f = 1900$ MHz; $\sigma = 1.49$ mho/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

- Probe: EX3DV4 - SN3600; ConvF(7.07, 7.07, 7.07); Calibrated: 19/04/2008
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 22/04/2008
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

System Validation - 1900 MHz Dipole

Area Scan (5x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 13.6 mW/g

System Validation - 1900 MHz Dipole

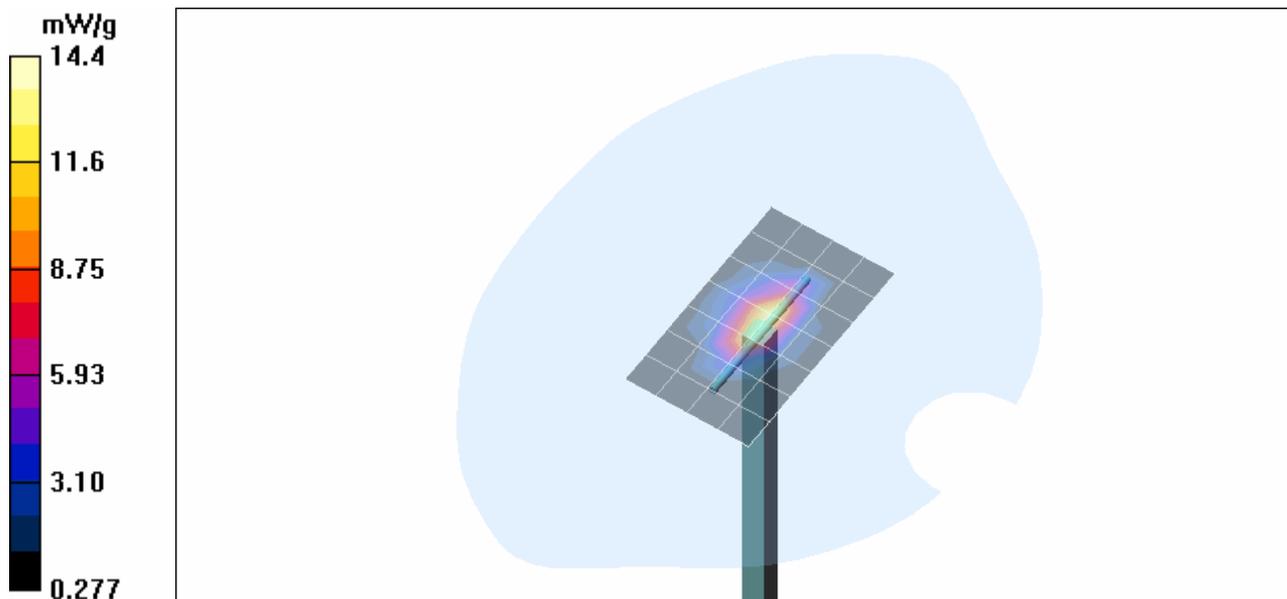
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.3 V/m; Power Drift = 0.069 dB

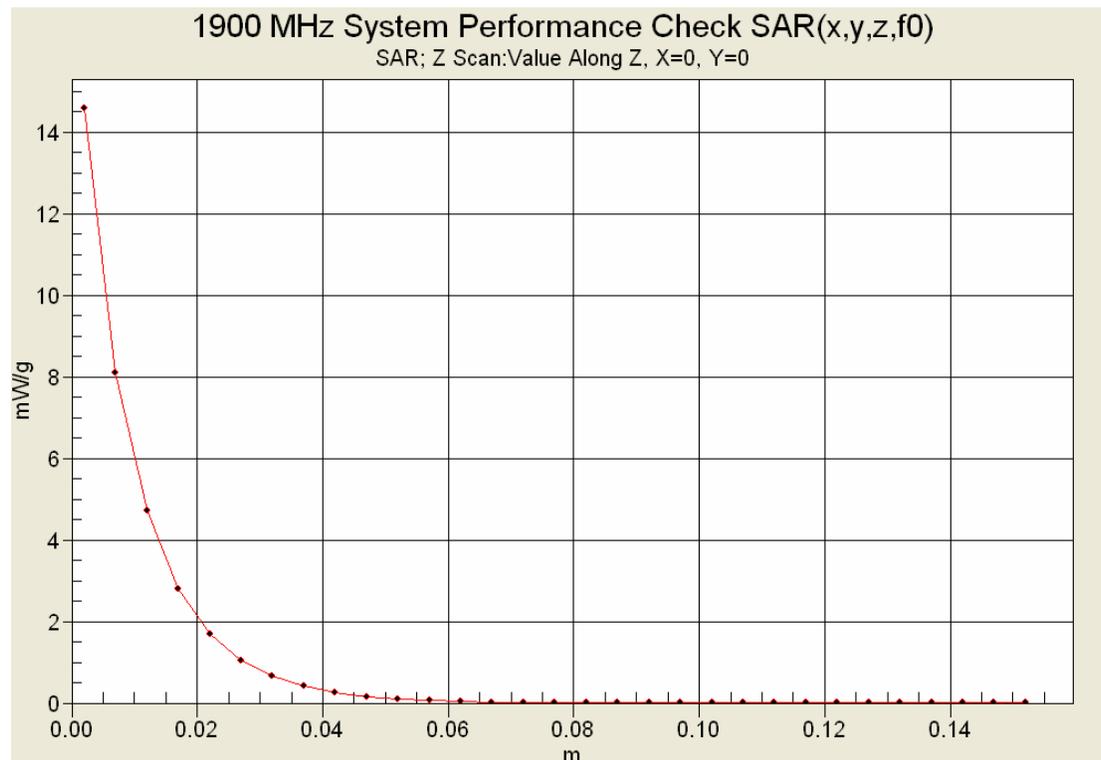
Peak SAR (extrapolated) = 18.4 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 5.21 mW/g

Maximum value of SAR (measured) = 14.4 mW/g



Z-Axis Scan



9. Measured Fluid Dielectric Parameters

System Validation - 1900 MHz (Body)

 Celltech Labs Inc.
 Test Result for UIM Dielectric Parameter
 13/Aug/2008
 Frequency (GHz)
 IEEE_eB 1528-2003 Limits for Body Epsilon
 IEEE_sB 1528-2003 Limits for Body Sigma
 Test_e Epsilon of UIM
 Test_s Sigma of UIM

Freq	IEEE_eB	IEEE_sB	Test_e	Test_s
1.8000	53.30	1.52	51.56	1.41
1.8100	53.30	1.52	51.49	1.39
1.8200	53.30	1.52	51.52	1.42
1.8300	53.30	1.52	51.31	1.42
1.8400	53.30	1.52	51.19	1.43
1.8500	53.30	1.52	51.26	1.44
1.8600	53.30	1.52	51.22	1.45
1.8700	53.30	1.52	51.26	1.46
1.8800	53.30	1.52	51.31	1.46
1.8900	53.30	1.52	51.04	1.50
1.9000	53.30	1.52	51.17	1.49
1.9100	53.30	1.52	51.09	1.49
1.9200	53.30	1.52	51.18	1.52
1.9300	53.30	1.52	50.97	1.51
1.9400	53.30	1.52	50.85	1.52
1.9500	53.30	1.52	50.81	1.53
1.9600	53.30	1.52	50.76	1.54
1.9700	53.30	1.52	50.79	1.57
1.9800	53.30	1.52	50.77	1.60
1.9900	53.30	1.52	50.85	1.58
2.0000	53.30	1.52	50.74	1.59

10. Measurement Uncertainties

UNCERTAINTY BUDGET FOR SYSTEM VALIDATION						
Error Description	Uncertainty Value $\pm\%$	Probability Distribution	Divisor	ci 1g	Uncertainty Value $\pm\%$ (1g)	V_i or V_{eff}
Measurement System						
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	∞
Dipole						
Dipole Positioning	2	Normal	1.732050808	1	1.2	∞
Power & Power Drift	4.7	Normal	1.732050808	1	2.7	∞
Phantom and Setup						
Phantom uncertainty	4	Rectangular	1.732050808	1	2.3	∞
Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.8	∞
Liquid conductivity (measured)	2	Normal	1	0.64	1.3	∞
Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.7	∞
Liquid permittivity (measured)	4	Normal	1	0.6	2.4	∞
Combined Standard Uncertainty					8.91	
Expanded Uncertainty (k=2)					17.83	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003 and IEC Standard 62209-1:2005						

11. Test Equipment List

TEST EQUIPMENT	ASSET NO.	SERIAL NO.	DATE OF CAL.	CAL. DUE DATE
SPEAG DASY4 Measurement Server	00158	1078	N/A	N/A
SPEAG Robot	00046	599396-01	N/A	N/A
SPEAG DAE4	00019	353	22Apr08	22Apr09
EX3DV4 E-Field Probe	00213	3600	19Apr08	19Apr09
1900 MHz Validation Dipole	00032	151	13Aug08	13Aug09
SPEAG SAM Twin Phantom V4.0C	00154	1033	N/A	N/A
HP 85070C Dielectric Probe Kit	00033	US39240170	N/A	N/A
Gigatronics 8652A Power Meter	00007	1835272	23Apr08	23Apr09
Gigatronics 80701A Power Sensor	00014	1833699	23Apr08	23Apr09
HP 8753ET Network Analyzer	00134	US39170292	28Apr08	28Apr09
HP 8648D Signal Generator	00005	3847A00611	NCR	NCR
Amplifier Research 5S1G4 Power Amplifier	00106	26235	NCR	NCR

	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX F - PROBE CALIBRATION

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Celltech**

Certificate No: **EX3-3600_Apr08**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:3600**

Calibration procedure(s): **QA CAL-01.v6, QA CAL-14.v3 and QA CAL-23.v3
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 19, 2008**

Condition of the calibrated item: **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498087	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (No. ES3-3013_Jan08)	Jan-09
DAE4	SN: 660	3-Sep-07 (No. DAE4-660_Sep07)	Sep-08
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: April 22, 2008

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization ϕ	ϕ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z} = NORM_{x,y,z} * frequency_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to **NORM_{x,y,z} * ConvF** whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3600

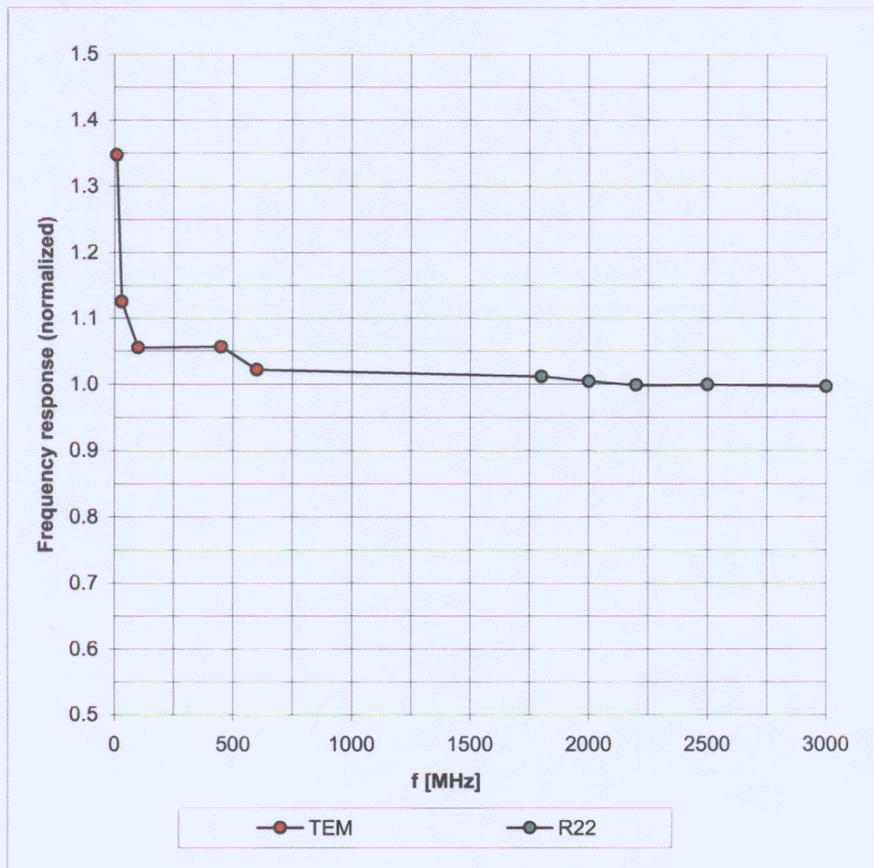
Manufactured:	January 10, 2007
Last calibrated:	January 24, 2007
Recalibrated:	April 19, 2008

Calibrated for DASYS Systems

(Note: non-compatible with DASYS2 system!)

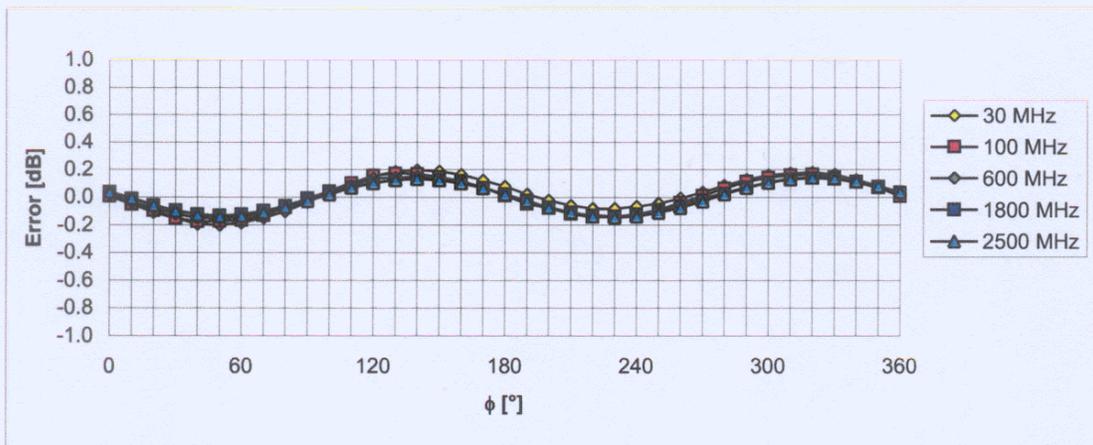
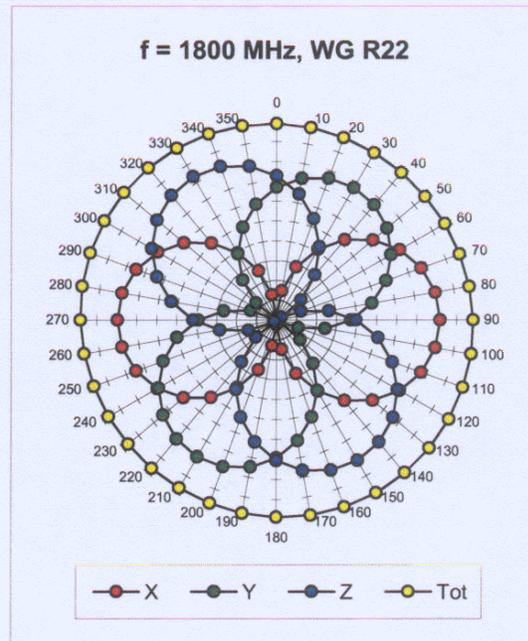
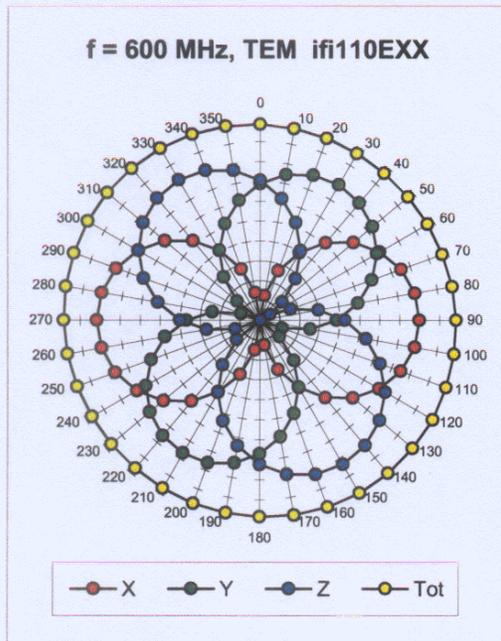
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



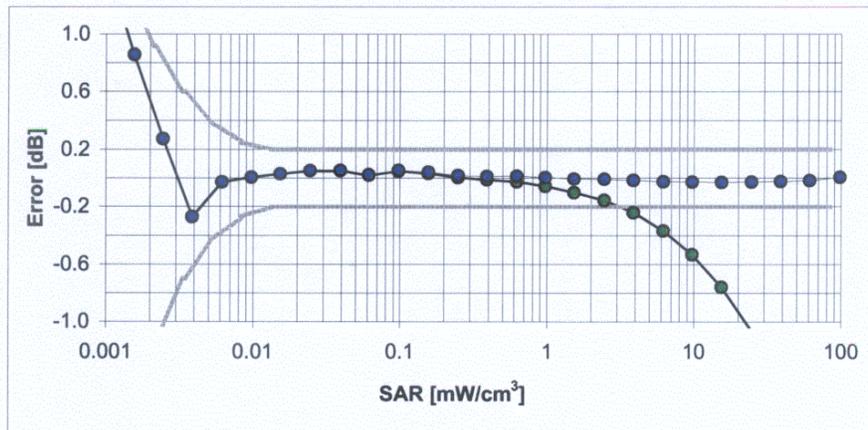
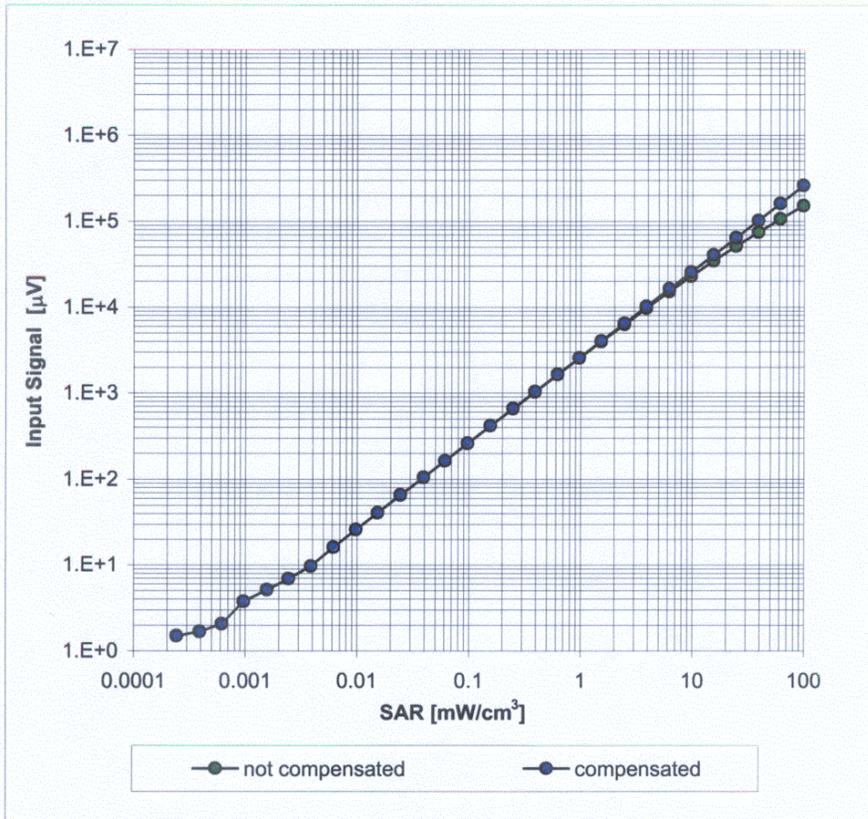
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

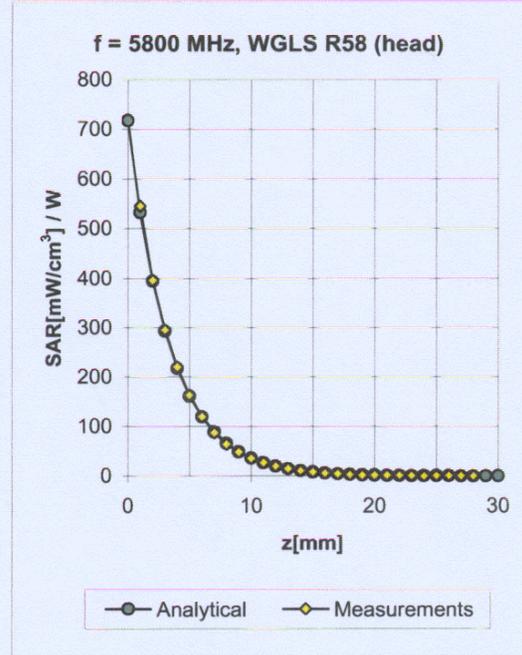
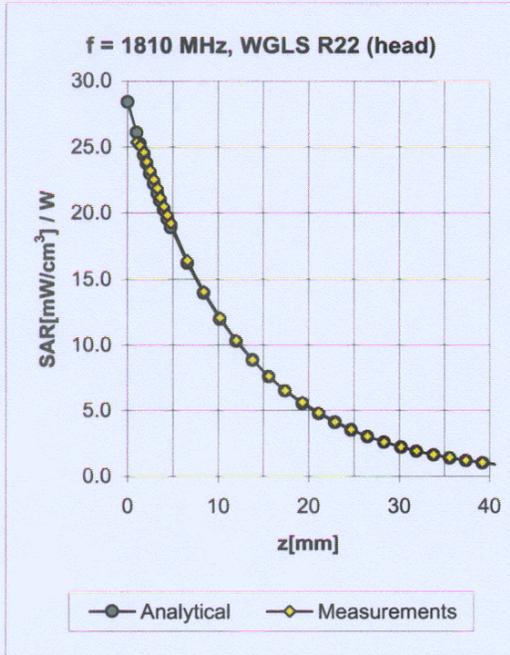


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(SAR_{head}) (Waveguide R22, f = 1800 MHz)



Conversion Factor Assessment

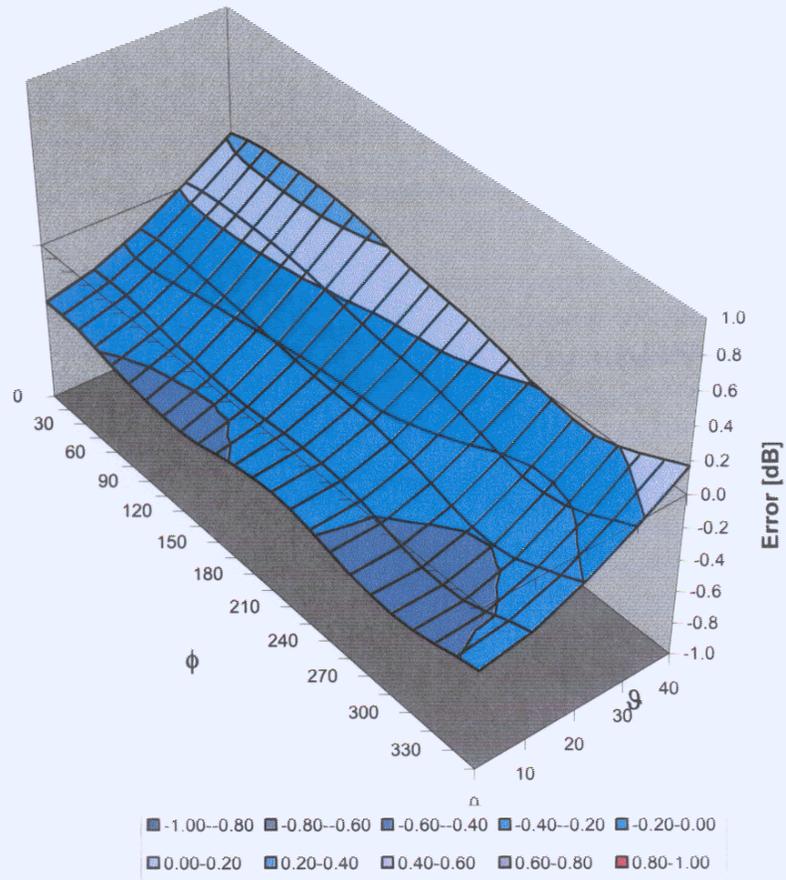


f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.82	0.58	7.32 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.85	0.57	6.99 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.79	0.58	6.75 ± 11.0% (k=2)
5800	± 50 / ± 100	Head	35.3 ± 5%	5.27 ± 5%	0.50	1.70	4.11 ± 13.1% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.93	0.56	7.45 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.92	0.55	7.07 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.59	0.73	6.32 ± 11.0% (k=2)
5200	± 50 / ± 100	Body	49.0 ± 5%	5.30 ± 5%	0.50	1.70	3.84 ± 13.1% (k=2)
5500	± 50 / ± 100	Body	48.6 ± 5%	5.65 ± 5%	0.48	1.70	3.86 ± 13.1% (k=2)
5800	± 50 / ± 100	Body	48.2 ± 5%	6.00 ± 5%	0.47	1.70	3.93 ± 13.1% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ, ϑ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

	<u>Date(s) of Evaluation</u> August 13, 2008	<u>Test Report Serial No.</u> 081308AMW-T920-S15D	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> August 27, 2008	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> General Population	

APPENDIX G - SAM PHANTOM CERTIFICATE OF CONFORMITY

Applicant:	Uniden America Corporation	FCC ID:	AMWUC577R	IC:	513C-UC577	
Model(s):	CT14	Portable UPCS/LE-PCS DECT Headset Phone	Freq.:	1921.536 - 1928.448 MHz		
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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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