Certificate Number: 1449-02

ELECTROMAGNETIC EXPOSURE (EME)
TESTING LABORATORY

8000 West Sunrise Blvd
Fort Lauderdale, Florida

S.A.R. TEST REPORT

FCC ID: AZ489FT3803
NUD2839A

September 12, 2001 - Rev. O

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REVISION HISTORY

Date	Revision	Comments
9/12/01	O	Original release.

1.0 Introduction

This report details the test setup, test equipment, and test results of the Specific Absorption Rate (SAR) measurement performed at the Motorola Florida Research Lab (MFRL) EME laboratory for XV2600 Portable Radio Product, model number NUD2839A (FCC ID: AZ489FT3803).

The applicable exposure environment is Occupational/Controlled.

The test results included herein represent the highest SAR levels applicable to this product and clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8.0 W/kg per the requirements of 47 CFR 2.1093(d).

2.0 Reference Standards and Guidelines

This product is designed to comply with the following national and international standards and guidelines.

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 1999 (applicable to wireless phones only).

3.0 Description of Test Sample

The XV2600 Portable Radio, Model number NUD2839A is a handheld transceiver, which operates as a traditional simplex 2-way radio. It will be marketed to and used by employees solely for work - related operations, such as Retail Business, Construction, and Small Business Operation.

The intended use positions are "at the face" with the microphone 1 to 2 inches from the mouth or "at the waist or abdomen" secured to the user's belt. When operated at the waist or abdomen, the audio and push-to-talk functions are routed to a remote accessory, which connects to the side of the radio. The transmit duty cycle, 50% maximum for this type of device, is controlled by the user via the push – to - talk button.

This device transmits in the 151.5125 – 158.4075MHz band with 6 Channels. The maximum conducted power, as defined by the production line final test station upper limit, is 2.3 watts. See section 5.0 for more detailed information on the maximum conducted power.

The sample unit tested for this report is an identical prototype to intended production units.

The XV2600 product is offered with a fixed non-removable antenna, and various accessories, listed below. (Refer to appendix D for a complete illustration of Body - worn accessories.)

Antenna:

Fixed ¼ wave 130mm helical, fixed non-retractable, freq. range 150 – 160 MHz.

Battery:

AA	COTS (Commercial Off The Shelf) Alkaline
53871	XTN Series NiMH Rechargeable

Body-worn accessory:

1585176C03	XTN Series Carry Holster
53873	XTN Series Carry Case

Audio/push-to-talk:

Many different audio/push – to - talk accessories are available. The representative sample below was chosen as being typical:

53862 Remote Speaker microphone

3.1 Test Signal

Test Signal Source:

Test Mode [ ] Base Station [ ] Simulator [ ] Native Transmission Mode [X]

Signal Modulation:

CW	**X**
TDMA	
Other	

3.2 Test Output Power

The conducted output power was measured across the transmit band using a HP RF Communication test set model 8920B.

4.0 Description of Test Equipment

4.1 Descriptions of SAR Measurement System

The laboratory utilizes a Dosimetric Assessment System (DASY™) SAR measurement system manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The SAR measurements were conducted with the probe ET3DV6 serial number 1417. The system performance check was conducted daily and within 24 hours prior to testing. Copy of the probe calibration certificates are included in appendix C, and the DASY output files of all of the system performance test results are included in appendix B. The table below summarizes the average and range of all system performance checks.

Date	Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	System Perf. Result when normalized to 1W (mW/g)	Reference SAR @ 1W (mW/g)
08/23/01	1417	Head	03/16/01	300-001	2.9	2.8
08/24/01	1417	Body	03/16/01	300-001	2.92	2.7
08/27/01	1417	Body	03/16/01	300-001	2.48	2.7

The DASY™ system is operated per the instructions in the DASY™ Users Manual. The entire manual is available directly from SPEAG™.

4.2 Description of Phantom

4.2.1 Body and Face Phantom:

Flat Phantom:
A rectangular shaped box made of plexi - glass and mounted on a supporting non-metallic structure that has an opening at the center for positioning the device.

Length	40.5 cm
Width	23.6 cm
Bottom Shell Thickness	0.2 cm

4.3 Simulated Tissue Properties:

4.3.1 Type of Simulated Tissue

The simulated tissue used is compliant to that specified in FCC Supplement C (Edition 01 - 01) to OET Bulletin 65 (Edition 97 - 01).

Simulated Tissue	Body Position
Body	Abdomen
Head	Face

4.3.2 Simulated Tissue Composition

	Frequency (150MHz)		Frequency (300MHz)	
	Body	Head	Body	Head
Di-Water	46.4%	38.35	49.48 %	37.5 %
Sugar	49.7 %	55.4	47.1 %	56%
Salt	2.8 %	5.15	2.32 %	5.4 %
HEC	1.0 %	1.0	1.0 %	1.0 %
Dowicil75	0.1 %	0.1	0.1 %	0.1 %

Note: HEC (HYDROXYETHYL CELLULOSE) is a gelling agent and Dowicil 75 is anti bacterial compound.

Characterization of Simulated tissue materials and ambient conditions:
Simulated tissue prepared for SAR measurements is measured daily and within 24 hours prior to actual SAR testing to verify tissue is within 5% of target parameters at the center of the transmit band. This measurement is done using the Agilent (HP) probe kit model 85070C and a HP8753D Network Analyzer.

Target tissue parameters

	Body		Head	
Frequency(MHz)	Di-electric Constant	Conductivity – S/m	Di-electric Constant	Conductivity – S/m
154.5	61.8	0.80	52.1	0.76
300	59.5	0.92	46.81	0.86

4.4 Test conditions:

The EME Laboratory ambient environment is well controlled resulting in very stable simulated tissue temperature and therefore stable dielectric properties. Simulated tissue temperature is measured prior to each scan to insure it is within +/ - 2^{o}C of the temperature at which the dielectric properties were determined. Additional precautions are routinely taken to ensure the stability of the simulated tissue such as covering the phantoms when scans are not actively in process in order to minimize evaporation. The lab environment is continuously monitored and the table below represents the environmental conditions during the SAR tests reported herein:

Ambient Temperature	24 ± 1^{o}C
Relative Humidity	34 ± 4 %
Tissue Temperature	22.8 ± 1^{o}C

The EME Lab RF environment is monitored with a Spectrum Analyzer to preclude extraneous large signal RF contaminants that could possibly affect the test results. If such unwanted signals are discovered the SAR scans are repeated however the lab environment is sufficiently protected that no SAR impacting interference has ever been experienced.

5.0 Description of Test Procedure

All antennas, batteries, and accessories listed in section 3.0 were included in the SAR test plan at the 154.5150 Mhz transmit frequency (middle of band) to determine the highest SAR levels. The transmit power of the test sample was pre-adjusted, per production alignment procedures, to the maximum transmit power, defined as the production line final test station upper limit, which in this case is 2.3 watts. However, due to the higher than nominal initial voltage typical with a fully charged NiMH battery, and the difference in series impedance based on the battery chemistry, the maximum transmit power is based on the maximum power achievable with each individual battery type. In this case, the maximum transmit power of the XV2600 radio with the NiMH 53871 rechargeable battery is 2.69W and with the AA alkaline batteries is 2.38W. The radio was always placed in continuous transmit mode (100% duty cycle) for the duration of the scan and each SAR scan was initiated with fresh AA Alkaline or fully charged NiMH battery as indicated.

The Antenna used on the XV2600 radio is fixed and not removable. This does not facilitate taking conducted power measurements before and after taking SAR readings. Instead, the power measurements were taken by disassembling the radio and connecting a coax cable directly to the antenna port. All battery combinations were used and the power readings recorded versus time, with the radio in continuous transmit mode (100% duty cycle). This data was used for the initial and end power references for each SAR scan in Table 7.0 and varied only by the type of battery used.

5.0.1 Abdomen

At the abdomen each combination of battery, and body-worn accessory was tested at the center of the transmit band. The transmit band of the XV2600 radio is less than 25 MHz.

The combination of battery and body-worn accessory resulting in the highest SAR was repeated without the body-worn accessory and with the antenna spaced 2.5 cm from the flat phantom surface.

All abdomen tests were conducted with an audio/push - to - talk accessory connected to the radio. All of the scans described above incorporated the 53862 Remote Speaker Microphone.

5.0.2 Face

At the face each combination of battery was tested at the center of the transmit band.

5.1 Device Test Positions

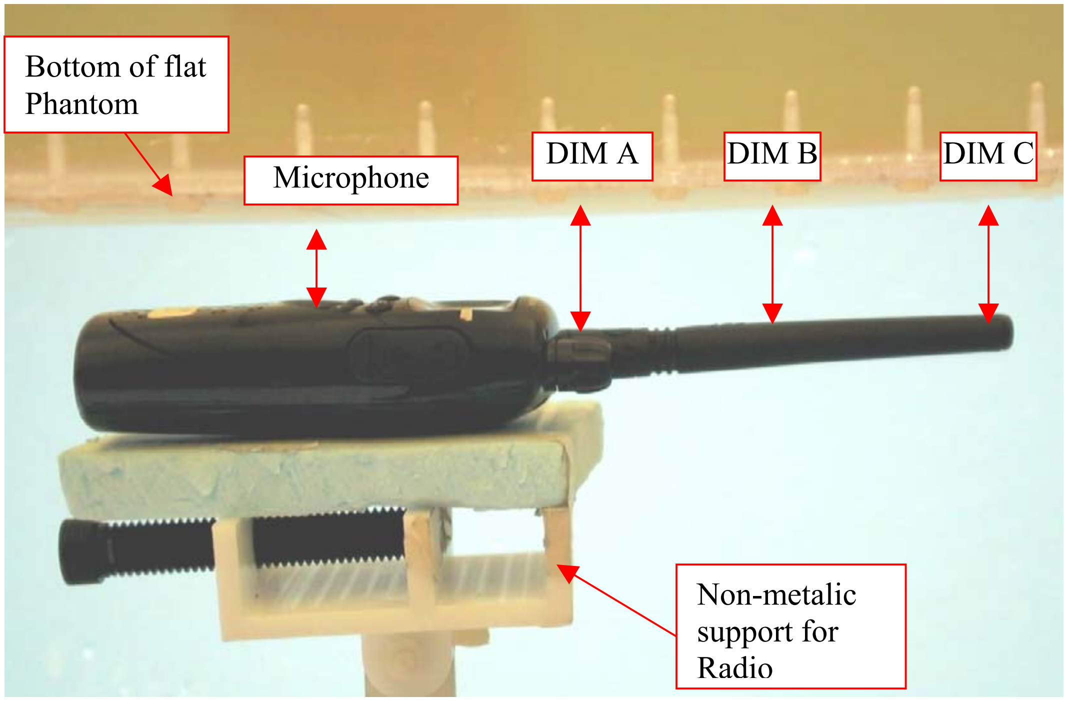
Abdomen - The test sample is positioned in a body - worn accessory and positioned under a flat phantom with the back of the body - worn accessory adjacent and parallel to the phantom. An audio/push-to-talk accessory and cable is connected to the radio with the cable routed orthogonal to and away from the radio at the point of connection to the radio.

For the 2.5 cm tests the test sample is positioned under a flat phantom and parallel to the phantom with the base of the antenna spaced 2.5 cm from the phantom surface.

Face - The test sample is positioned under a flat phantom with radio housing parallel to the phantom with the radio's microphone spaced 2.5cm from the bottom of the phantom surface.

Reference figures 1 and 2 for portable radio antenna orientation and distances relative to phantoms. Figure 3 provides an overall perspective of the phantom and support structure

Figure 1: Facial Position



		No Accessory (as shown above)	
Dim A =	Distance from surface of antenna base to phantom surface	35mm	
Dim B =	Distance from surface of antenna center to phantom surface	32mm	
Dim C =	Distance from antenna surface tip to phantom	29mm	

Note: Radio is positioned with microphone 2.5cm from the bottom of the flat body phantom.

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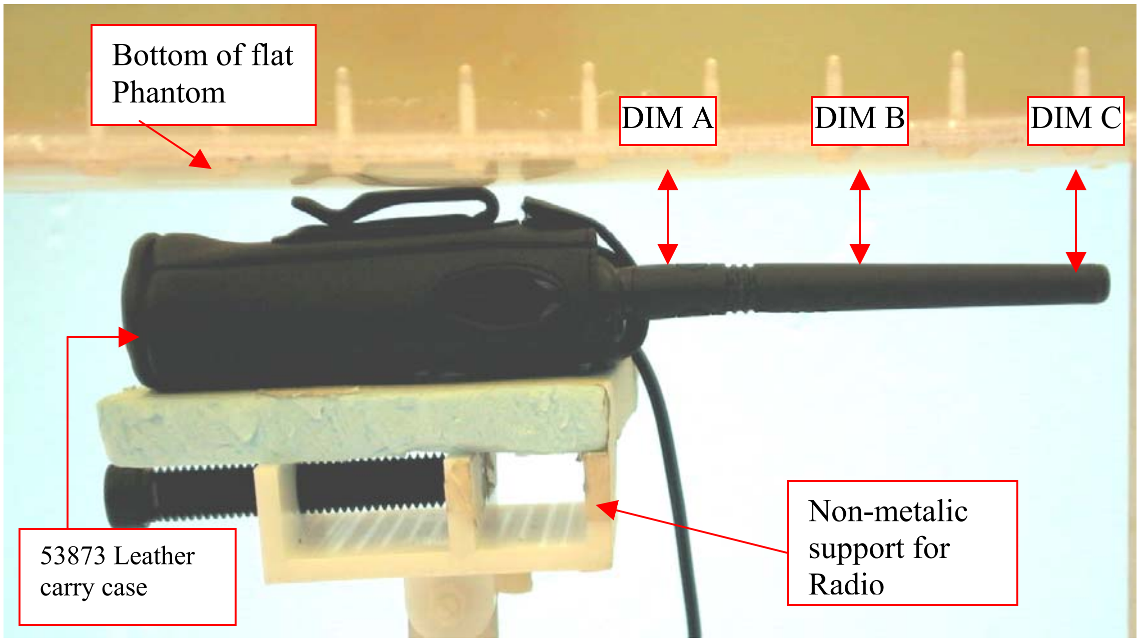
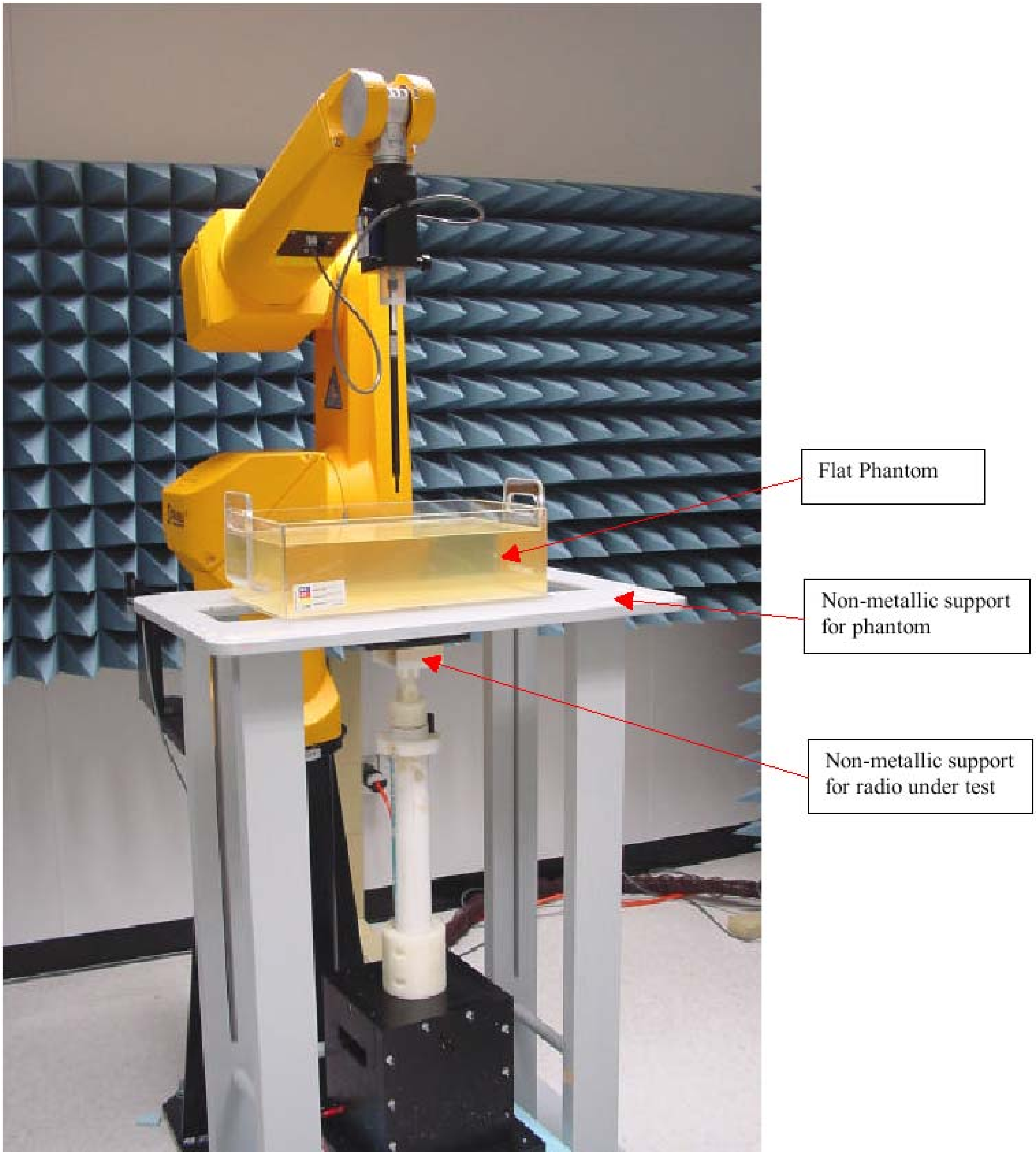
Figure 2: Abdominal Position



		53873 (as shown above)	1585176C03
Dim A =	Distance from surface of antenna base to phantom surface	24mm	23mm
Dim B =	Distance from surface of antenna center to phantom surface	29mm	37mm
Dim C =	Distance from antenna surface tip to phantom	36mm	47mm

Figure 3: Robot Test System



5.2 Probe Scan Procedures

The E-field probe is first scanned in a coarse grid over a large area inside the phantom in order to locate the interpolated maximum SAR distribution. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The subsequent scan can directly use this position for reference for the cube evaluations.

6.0 Measurement Uncertainty:

The table below lists the uncertainty estimate of the possible errors that are associated with the measurement system.

Uncertainty Description	Standard Uncertainty
Probe Uncertainty	
- Axial Isotropy	± 2.4 %
- Spherical Isotropy	± 4.8 %
- Spatial Resolution	± 0.5 %
- Linearity Error	± 2.7 %
- Calibration Error	± 8 %
Evaluation Uncertainty	
- Data Acquisition Error	± 0.60 %
- ELF and RF Disturbances	± 0.25 %
- Conductivity Assessment	± 5 %
Spatial Peak SAR Evaluation Uncertainty	
- Extrapolation and boundary effects	± 3%
- Probe positioning	± 1 %
- Integration and cube orientation	± 3 %
- Cube shape inaccuracies	± 1.2 %
- Device positioning	± 1.0 %

The Total Measurement Uncertainty is ± 12.1 %. The Expanded Measurement Uncertainty is ± 24.2 % (k=2)

7.0 SAR Test Results:

All SAR results yielded by the tests described in Section 5.0 are listed in the tables below for each body position. The DASY™ measurement system's output files for all the data indicated in the tables below are provided in appendix A.

7.1 SAR results at the abdomen:

Antenna/ Run Number	Freq.	Battery	Carry Acc	Audio Acc	Init. Power* (W)	End Power (W)	Measured SAR (100% duty cycle)	SAR (50% duty cycle)
Fixed/ 010824-02	154.5150Mhz	53871	1585176C03	53862	2.67	2.17	1.00	0.500
Fixed/ 010824-04	154.5150Mhz	AA Alkaline	1585176C03	53862	2.30	1.62	0.857	0.429
Fixed/ 010824-03	154.5150Mhz	53871	53873	53862	2.67	2.17	1.67	**0.835**
Fixed/ 010824-05	154.5150Mhz	AA Alkaline	53873	53862	2.67	2.17	1.47	0.735
Fixed/ 010827-02	154.5150Mhz	53871	Antenna @ 2.5 cm with back of radio facing Phantom surface		2.67	2.17	1.08	0.540
Fixed/ 010827-03	154.5150Mhz	53871	Antenna @ 2.5 cm with front of radio facing Phantom surface		2.67	2.17	1.03	0.515

The configuration indicated highest SAR results for the abdomen included the fixed antenna, 53871 NiMH rechargeable battery, 53873 carry case and 53862 audio accessory.

7.2 SAR results at the Face:

Antenna	Freq.	Battery	Carry Acc	Audio Acc	Init. Power* (W)	End Power (W)	Measured SAR (100% duty cycle)	SAR (50% duty cycle)
Fixed/ 010823-02	154.5150Mhz	53871	NONE	NONE	2.67	2.17	0.591	**0.296**
Fixed/ 010823-03	154.5150Mhz	AA Alkaline	NONE	NONE	2.30	1.62	0.555	0.278

The configuration indicated highest SAR result for the face included the fixed antenna and 53871 NiMH rechargeable battery.

*Initial power shown is at band center. Maximum power of 2.69W with the 53871 NiMH rechargeable batteries and 2.38 W for Alkaline batteries is the highest vs. frequency.

7.3 Peak SAR location

Refer to Appendix A for the detailed SAR scan distributions.

8.0 Conclusion

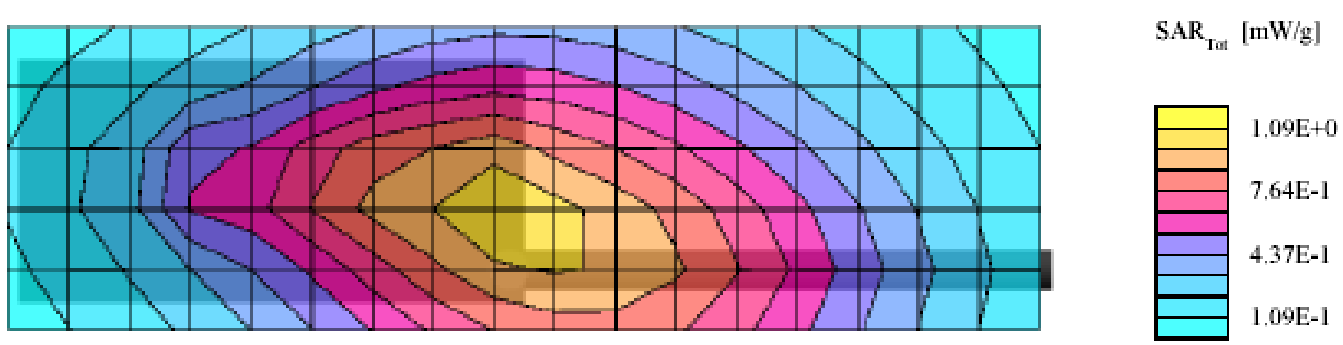
The highest Operational Maximum 1-gram average SAR values found for the portable radio model number NUD2839A were:
At the abdomen: 0.835 mW/g
At the face: 0.296 mW/g

These test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8.0 W/kg per the requirements of 47 CFR 2.1093(d)

Appendix A: Data Results

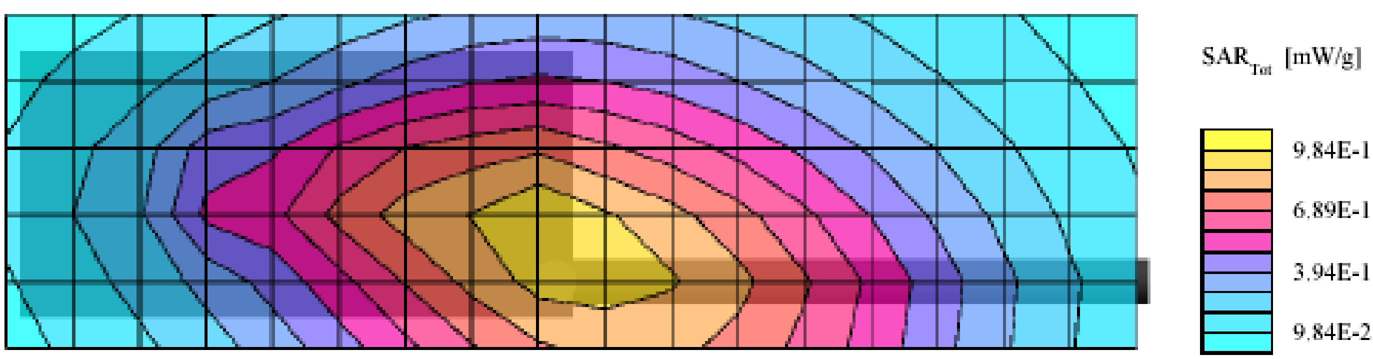
XV2600-VHF;Test Date:08/24/01

Product: XV2600 Date: 010824
Run Number: 010824-02 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(53871-NiMH),CarryCase(1585176C03-Holster) RSM(53862)
Antenna Distance from Phantom Surface: A(base) 23mm B(center):37mm C(tip):47mm
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section;
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90);Probe Cal Date;16/03/01
Crest factor: 1.0; IEEE BODY 150MHz: ⌠ = 0.80 mho/m ∑r = 61.8 ⟩ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.00 mW/g, (Worst-case extrapolation)



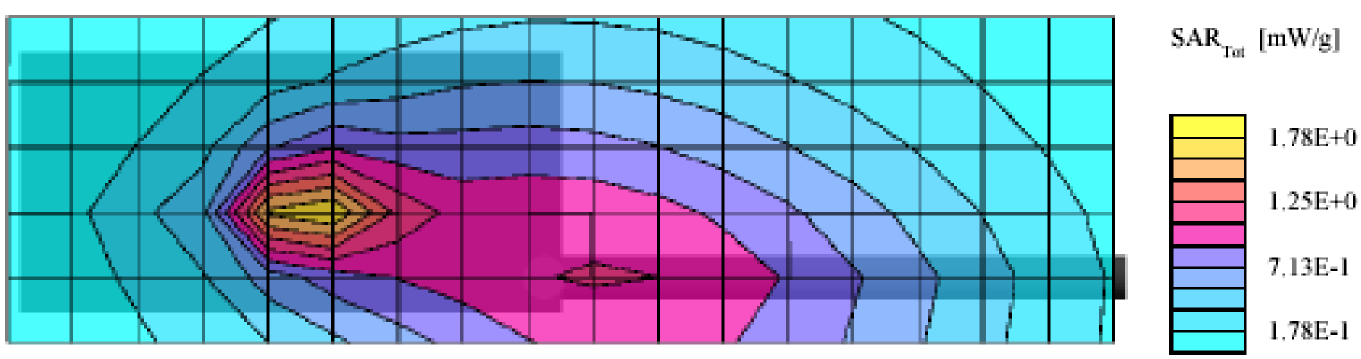
XV2600-VHF;Test Date:08/24/01

Product: XV2600 Date: 010824
Run Number: 010824-04 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(AA-Alkaline),CarryCase(1585176C03-Holster) RSM(53862)
Antenna Distance from Phantom Surface: A(base) 23mm B(center):37mm C(tip):47mm
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section;
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90);Probe Cal Date;16/03/01
Crest factor: 1.0; IEEE BODY 150MHz: ⌠ = 0.80 mho/m ∑r = 61.8 〉 = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 0.857 mW/g, (Worst-case extrapolation)



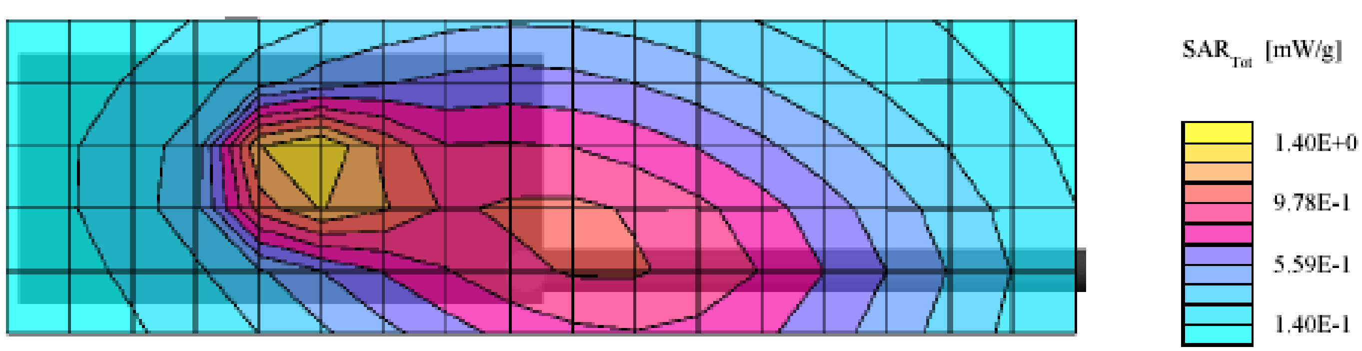
XV2600-VHF;Test Date:08/24/01

Product: XV2600 Date: 010824
Run Number: 010824-03 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(53871-NiMH),CarryCase(53873-Leather) RSM(53862)
Antenna Distance from Phantom Surface: A(base) 24mm B(center):29mm C(tip):36mm
Room Temp:23.0 Liquid Temp:22.8 RH:34%
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section;
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90);Probe Cal Date;16/03/01
Crest factor: 1.0; IEEE BODY 150MHz: ⌠ = 0.80 mho/m ∑r = 61.8 〉 = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.67 mW/g, (Worst-case extrapolation)



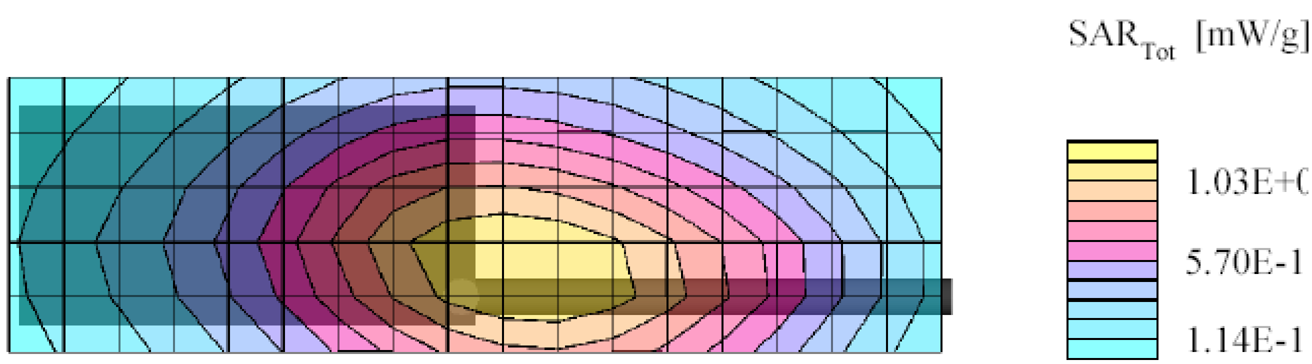
XV2600-VHF;Test Date:08/24/01

Product: XV2600 Date: 010824
Run Number: 010824-05 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(AA-Alkaline),CarryCase(53873-Leather) RSM(53862)
Antenna Distance from Phantom Surface: A(base) 24mm B(center):29mm C(tip):36mm
Room Temp:23.0 Liquid Temp:22.8 RH:34%
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section;
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90);Probe Cal Date;16/03/01
Crest factor: 1.0; IEEE BODY 150MHz: σ = 0.80 mho/m εr = 61.8 ρ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.47 mW/g, (Worst-case extrapolation)



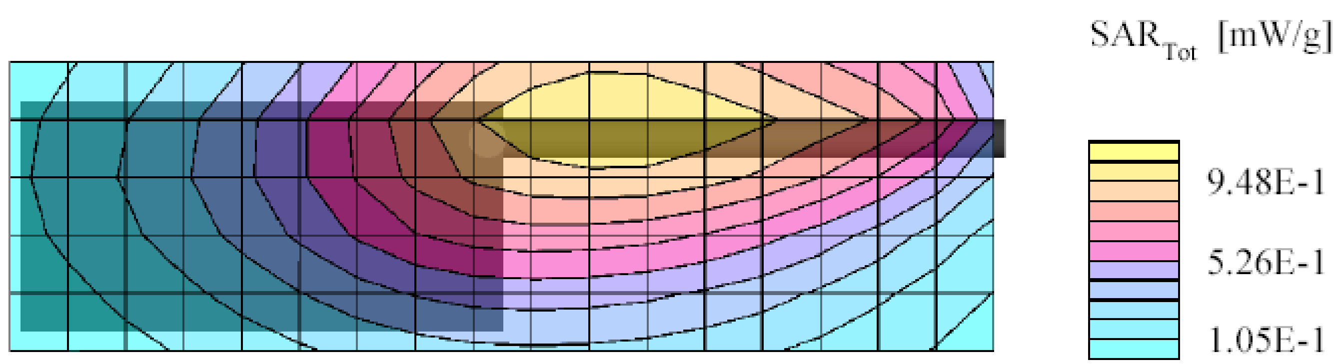
XV2600-VHF; Test Date: 08/27/01

Product: XV2600 Date: 010827
Run Number: 010827-02 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(53871-NiMH)
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
Radio Antenna placed @2.5cm from phantom surface
Back of Radio facing Phantom surface
300MHz Dipole Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90); Probe cal date: 16/03/01; Crest factor: 1.0; IEEE BODY
150MHz: _ = 0.80 mho/m _r = 61.8 _ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.08 mW/g, (Worst-case extrapolation)



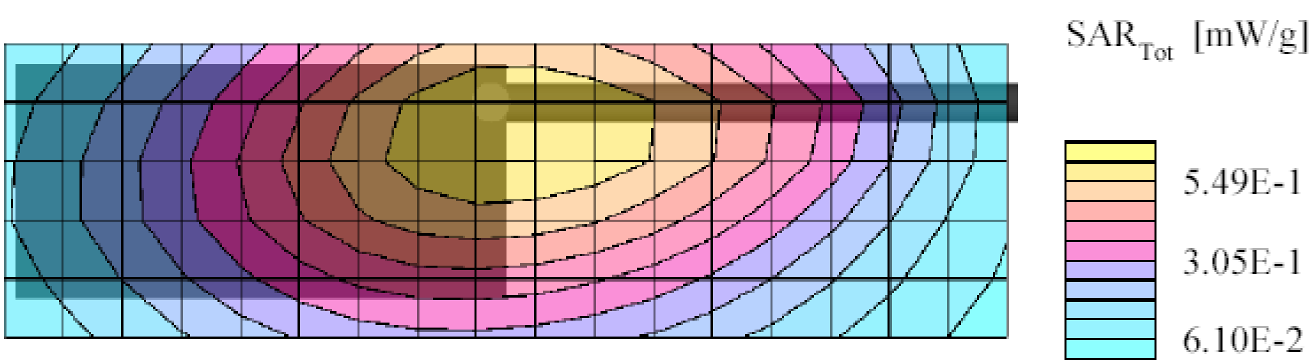
XV2600-VHF; Test Date: 08/27/01

Product: XV2600 Date: 010827
Run Number: 010827-03 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(53871-NiMH)
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
Radio Antenna @2.5cm from phantom surface
Front of radio facing Phantom surface
300MHz Dipole Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(7.90,7.90,7.90); Probe cal date: 16/03/01; Crest factor: 1.0; IEEE BODY
150MHz: _ = 0.80 mho/m _r = 61.8 _ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.03 mW/g, (Worst-case extrapolation)



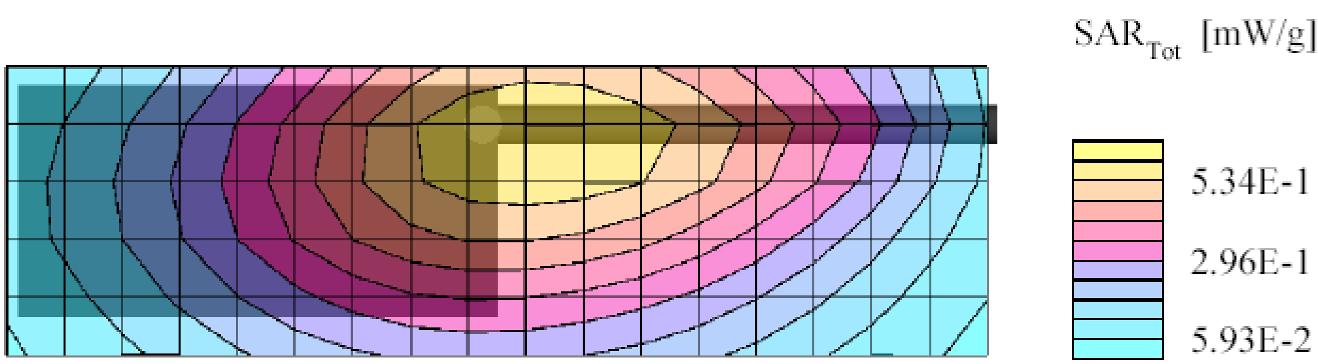
XV2600-VHF; Test Date: 08/23/01

Product: XV2600 Date: 010823
Run Number: 010823-02 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(53871-NiMH)
Radio parallel to Phantom surface and Radio Mic placed 2.5cm from Phantom surface
Antenna Distance from Phantom Surface: A(base) 35mm B(center):32mm C(tip):29mm
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(8.20,8.20,8.20); Probe cal date: 16/03/01; Crest factor: 1.0; IEEE HEAD
150MHz: _ = 0.74 mho/m $\_{r}$ = 53.5 _ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 0.591 mW/g, (Worst-case extrapolation)



XV2600-VHF; Test Date: 08/23/01

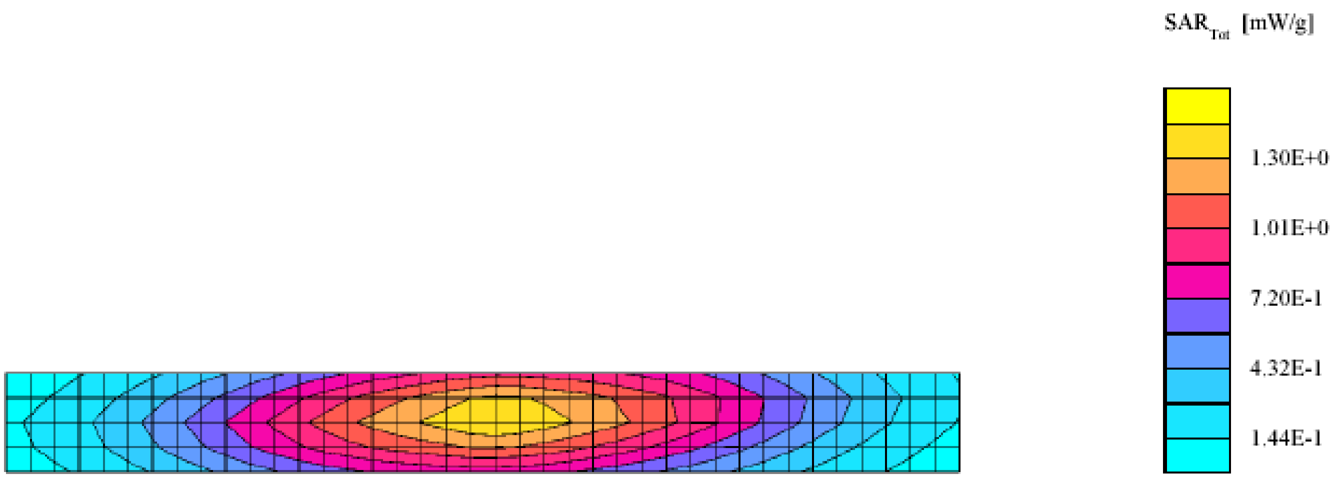
Product: XV2600 Date: 010823
Run Number: 010823-03 Run Time: (25 min)
Model: NUD2839A Sn: 158ABN0021
TX FREQ:155MHz ANTENNA Position: FIXED
Accessories: Battery(AA-Alkaline)
Radio parallel to Phantom surface and Radio Mic placed 2.5cm from Phantom surface
Antenna Distance from Phantom Surface: A(base) 35mm B(center):32mm C(tip):29mm
Room Temp:23.0 Liquid Temp:22.8
PROBE CAL DATE: 010316
300MHz Dipole Phantom; Radio Scan Area Section; Position: (90°,0°);
Probe: ET3DV6R - SN1417; ConvF(8.20,8.20,8.20); Probe cal date: 16/03/01; Crest factor: 1.0; IEEE HEAD
150MHz: _ = 0.74 mho/m $\_r$ = 53.5 _ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 0.555 mW/g, (Worst-case extrapolation)



Appendix B: Dipole Validation Data Results

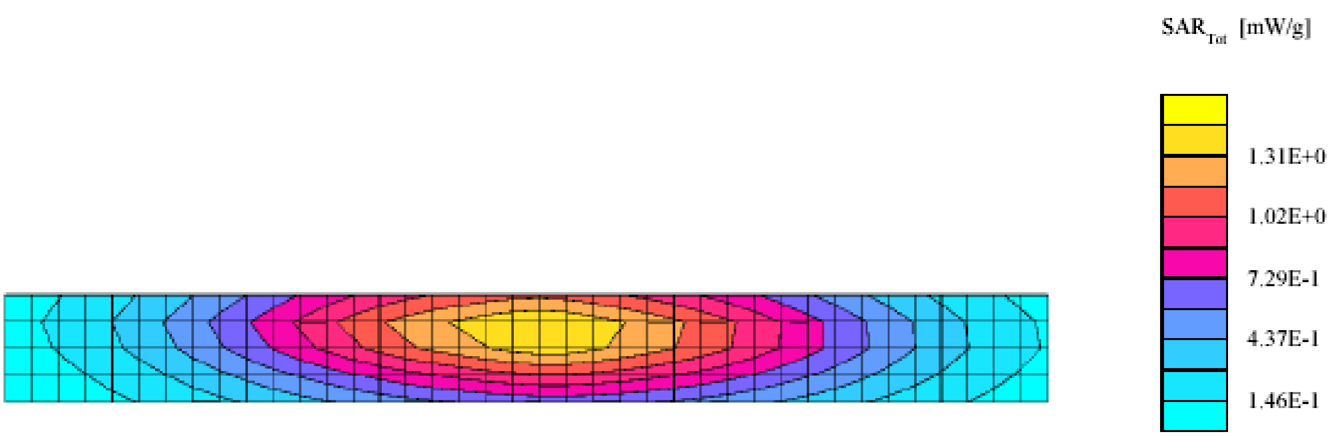
dipole300;Test Date:08/23/01

Input Power 500mW
Room Temp:23 RH:32% Mixture Temp:23
300MHz Dipole Phantom; Section;
Probe: ET3DV6R - SN1417; ConvF(7.20,7.20,7.20);Probe Cal Date;16/03/01
Crest factor: 1.0; 300MHz HEAD: ⌠ = 0.87 mho/m ∑r = 45.2 〉 = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.41 mW/g, (Worst-case extrapolation)



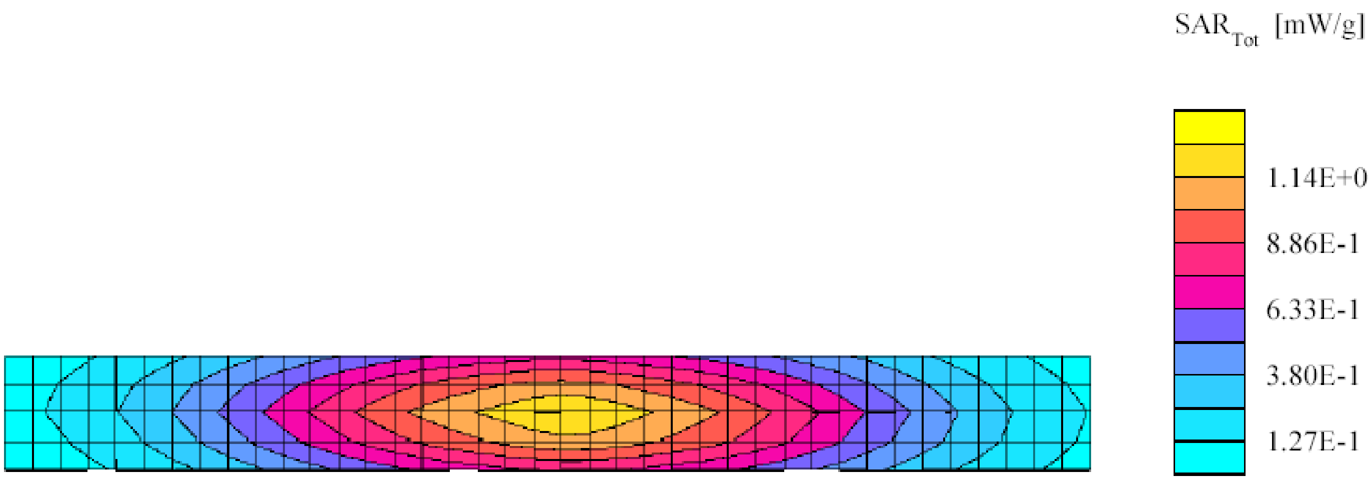
dipole300;Test Date:08/24/01

Input Power: 500mW
Tissue Temp:22.7
room Temp:23
300MHz Dipole Phantom; Section;
Probe: ET3DV6R - SN1417; ConvF(7.30,7.30,7.30);Probe Cal Date;16/03/01
Crest factor: 1.0; 300MHz BODY: ⌠ = 0.92 mho/m ∑r = 59.7 〉 = 1.00 g/cm3
Cubes (2): SAR (1g): 1.45 mW/g ± 0.01 dB, (Worst-case extrapolation)



dipole300; Test Date: 08/27/01

Input Power: 500 mW
Tissue Temp: 22.8 Room Temp: 23
300MHz Dipole Phantom; Section; Position: ;
Probe: ET3DV6R - SN1417; ConvF(7.30,7.30,7.30); Probe cal date: 16/03/01;
Crest factor: 1.0; 300MHz BODY: _ = 0.93 mho/m _r = 59.3 _ = 1.00 g/cm3
Cube 5x5x7: SAR (1g): 1.24 mW/g, (Worst-case extrapolation)



Appendix C: Measurement Probe Calibration Certificate

**Schmid & Partner
Engineering AG**

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

Calibration Certificate

Dosimetric E-Field Probe

Type	**ET3DV6R**
Serial Number:	**1417**
Place of Calibration:	**Zurich**
Date of Calibration:	**Mar. 16, 2001**
Calibration Interval	**12 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by

Approved by

DASY3 - Parameters of Probe: ET3DV6R SN:1417

Sensitivity in Free Space

NormX	2.46 μV/(V/m)^2
NormY	2.35 μV/(V/m)^2
NormZ	2.47 μV/(V/m)^2

Diode Compression

DCP X	95 mV
DCP Y	95 mV
DCP Z	95 mV

Sensitivity in Tissue Simulating Liquid

Head **450 MHz** ε_r **= 43.5 ± 5%** σ **= 0.87 ± 10% mho/m**

41.35 45.67 .826 — .913

ConvF X	**6.41**	extrapolated	Boundary effect:	
ConvF Y	**6.41**	extrapolated	Alpha	**0.29**
ConvF Z	**6.41**	extrapolated	Depth	**3.07**

Head **900 MHz** ε_r **= 42 ± 5%** σ **= 0.97 ± 10% mho/m**

ConvF X	**5.97**	± 7% (k=2)	Boundary effect:	
ConvF Y	**5.97**	± 7% (k=2)	Alpha	**0.37**
ConvF Z	**5.97**	± 7% (k=2)	Depth	**2.76**

Head **1500 MHz** ε_r **= 40.4 ± 5%** σ **= 1.23 ± 10% mho/m**

ConvF X	**5.39**	interpolated	Boundary effect:	
ConvF Y	**5.39**	interpolated	Alpha	**0.49**
ConvF Z	**5.39**	interpolated	Depth	**2.36**

Head **1800 MHz** ε_r **= 40 ± 5%** σ **= 1.40 ± 10% mho/m**

ConvF X	**5.10**	± 7% (k=2)	Boundary effect:	
ConvF Y	**5.10**	± 7% (k=2)	Alpha	**0.54**
ConvF Z	**5.10**	± 7% (k=2)	Depth	**2.15**

Sensor Offset

Probe Tip to Sensor Center **2.7** mm

Schmid & Partner
Engineering AG

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Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6R**
Serial Number:	**1417**
Place of Assessment:	**Zurich**
Date of Assessment:	**April 20, 2001**
Probe Calibration Date:	**March 16, 2001**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Approved by:

Dosimetric E-Field Probe ET3DV6 SN:1417

Conversion factor (± standard deviation)

450 MHz	ConvF	6.69 ± 8%	ε_r = 47.0 σ = 0.63 mho/m (brain tissue)
835 MHz	ConvF	6.10 ± 8%	ε_r = 44.0 σ = 0.90 mho/m (brain tissue)
925 MHz	ConvF	5.93 ± 8%	ε_r = 44.0 σ = 0.93 mho/m (brain tissue)
1500 MHz	ConvF	5.34 ± 8%	ε_r = 41.1 σ = 1.00 mho/m (brain tissue)
1900 MHz	ConvF	4.86 ± 8%	ε_r = 39.9 σ = 1.42 mho/m (brain tissue)
150 MHz	ConvF	7.93 ± 8%	ε_r = 70.00 σ = 0.75 mho/m (muscle tissue)
450 MHz	ConvF	6.67 ± 8%	ε_r = 58.0 σ = 1.00 mho/m (muscle tissue)
835 MHz	ConvF	6.05 ± 8%	ε_r = 52.0 σ = 1.10 mho/m (muscle tissue)
925 MHz	ConvF	5.91 ± 8%	ε_r = 52.0 σ = 1.20 mho/m (muscle tissue)
1500 MHz	ConvF	5.50 ± 8%	ε_r = 41.2 σ = 1.48 mho/m (muscle tissue)
1920 MHz	ConvF	4.63 ± 8%	ε_r = 51.5 σ = 1.95 mho/m (muscle tissue)

Appendix D: Illustrations of Body-worn Accessories

Illustration of Body-worn Accessories

The purpose of this appendix is to illustrate the body-worn carry accessories for the XV2600 FM Portable Radio.

Photos 1, 2 and 3 illustrate the 1585176C03 plastic carry holder with a swivel belt clip.

Photo 1
Front

Photo 2
Side view

Metal spring in belt clip

Photo 3
Rear view

Photos 4, 5 and 6 illustrate the 53873 soft leather carry holder with belt clip.

Photo 4
Front

Photo 5
Side view

Metal belt clip

Photo 6
Rear