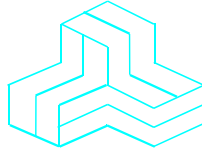


CERTIFICATE OF COMPLIANCE



October 23, 2001

File No.: LIP9-SAR

Lipman USA, Inc.
50 Gordon Dr.
Syosset, NY
USA, 11791

NOT TRANSFERABLE

This Verification Certificate is hereby issued to the named GRANTEE and is VALID ONLY for the equipment identified hereon for use under the rules and regulations listed below:

GRANTEE'S NAME:	Lipman USA, Inc.
PRODUCT UNDER TEST:	Point of Sale Device
MODEL NO.:	NURIT 8000 CDPD
FCC ID:	O2SNURIT8000CI
OPERATING FREQUENCY RANGE:	824 - 849 MHz
NOMINAL RF OUTPUT POWER:	530 mW Conducted, 489.8 mW (ERP)

MAXIMUM S.A.R.: 0.719 Watts/Kg (1g average) at 2.5cm separation

APPLICABLE STANDARDS: SAR (Specific Absorption Rate) requirements using guidelines established in IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C), Industry Canada RSS-102(Issue 1) and ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)

- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia), VCCI (Japan)
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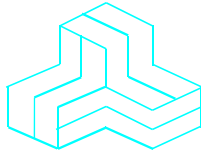


**Approved by: Tri M. Luu, P.Eng.
V.P. – Engineering**

UltraTech

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Facsimile (905) 829-8050
Website: www.ultratech-labs.com
Email: vhk.ultratech@sympatico.ca

ENGINEERING TEST REPORT



Point of Sale Device Model No.: NURIT 8000 CDPD

Tested For

Lipman USA, Inc.
50 Gordon Dr.
Syosset, NY
USA, 11791

In Accordance With

**SAR (Specific Absorption Rate) Requirements
Using Guidelines Established in IEEE C95.1-1991,
FCC OET Bulletin 65 (Supplement C),
Industry Canada RSS-102(Issue 1) and
ACA Radiocommunications (Electromagnetic Radiation – Human Exposure)
Amendment Standard 2000 (No. 1)**

UltraTech's File No.: LIP9-SAR

This Test report is Issued under the Authority of
Tri M. Luu, Professional Engineer,
Vice President of Engineering
UltraTech Group of Labs



Date: October 23, 2001

Report Prepared by: Dan Huynh

Tested by: Wayne Wu

Issued Date: October 23, 2001

Test Dates: October 17-18, 2001

The results in this Test Report apply only to the sample(s) tested, which has been randomly selected.

UltraTech

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Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI

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EXHIBIT 1. INTRODUCTION

1.1. SCOPE

Reference:	SAR (Specific Absorption Rate) Requirements IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C) Industry Canada RSS-102 (Issue 1). ACA Radiocommunications (Electromagnetic Radiation – Human Exposure), Amendment Standard 2000 (No. 1)
Title:	Safety Levels with respect to human exposure to Radio Frequency Electromagnetic Fields Guideline for Evaluating the Environmental Effects of Radio Frequency Radiation
Purpose of Test:	To verify compliance with Federal regulated SAR requirements in Canada and the US.
Method of Measurements:	IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C) and Industry Canada RSS-102 (Issue 1)
Exposure Category:	<input checked="" type="checkbox"/> General population, uncontrolled exposure <input type="checkbox"/> Occupational, controlled exposure

1.2. REFERENCES

The methods and procedures used for the measurements contained in this report are details in the following reference standards:

Publications	Year	Title
IEEE Std. 1528-2001 Draft	2001	Draft Recommended practice for determining the Peak Spatial-Average Specific Absorption rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.
Industry Canada RSS102	1999	"Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields"
ACA	2000	ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)
NCRP Report No. 86	1986	"Biological Effects and Exposure Criteria for radio Frequency Electromagnetic Fields"
FCC OET Bulletin 65	1997	"Evaluating Compliance with FCC Guidelines for Human Exposure to radio Frequency Fields"
ANSI/IEEE C95.3	1992	"Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave"
ANSI/IEEE C95.1	1992	"Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300GHz"
AS/NZS 2722.1	1998	Interim Australian/New Zealand Standard. ``Radiofrequency fields, Part 1:Maximum exposure levels - 3kHz to 300GHz ``

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EXHIBIT 2. PERFORMANCE ASSESSMENT

2.1. CLIENT AND MANUFACTURER INFORMATION

APPLICANT	
Name:	Lipman USA, Inc.
Address:	50 Gordon Dr. Syosset, NY USA, 11791
Contact Person:	Mr. John Carpino Phone #: 516-484-9898

MANUFACTURER	
Name:	Lipman Electronic Engineering, Ltd.
Address:	11 Haamal St Park Afek Rosh Haayin 48092 Israel
Contact Person:	Amit Chhabra Phone #: 1 800 454 7626 X2300 516-484-9898 X2300

2.2. DEVICE UNDER TEST (DUT) DESCRIPTION

The following is the information provided by the applicant.

Trade Name:	Point of Sale Device
Type/Model Number:	NURIT 8000 CDPD
Serial Number:	Test Sample
Type of Equipment:	Licensed Non-Broadcast Station Transmitter
Frequency of Operation:	824 - 849 MHz
Rated RF Power:	530 mW (Conducted) 489.8 mW (ERP)
Modulation Employed:	FM Data
Emissions Designation:	28K8F1D
Antenna Type:	Patch
External Power Supply:	Lipman USA Inc., Power Supply/Charger Model No.: TRF00050
Primary User Functions of DUT:	Wireless hand held POS/EDC terminal for credit, debit and ERT transactions

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2.3. LIST OF DUT'S ACCESSORIES

- Lipman USA Inc., Power Supply/Charger, Model No.: TRF00050

2.4. SPECIAL CHANGES ON THE DUT'S HARDWARE/SOFTWARE FOR TESTING PURPOSES

None

2.5. ANCILLARY EQUIPMENT

- IBM Laptop, Type 2625-DEF, Serial No. 78-WWM48 96/05

2.6. GENERAL TEST CONFIGURATIONS**2.6.1. Equipment Configuration**

Power and signal distribution, grounding, interconnecting cabling and physical placement of equipment of a test system shall simulate the typical application and usage in so far as is practicable, and shall be in accordance with the relevant product specifications of the manufacturer.

The configuration that tends to maximize the DUT's emission or minimize its immunity is not usually intuitively obvious and in most instances selection will involve some trial and error testing. For example, interface cables may be moved or equipment re-orientated during initial stages of testing and the effects on the results observed.

Only configurations within the range of positions likely to occur in normal use need to be considered.

The configuration selected shall be fully detailed and documented in the test report, together with the justification for selecting that particular configuration.

2.6.2. Exercising Equipment

The exercising equipment and other auxiliary equipment shall be sufficiently decoupled from the EUT so that the performance of such equipment does not significantly influence the test results.

2.7. SPECIFIC OPERATING CONDITIONS

Not specified.

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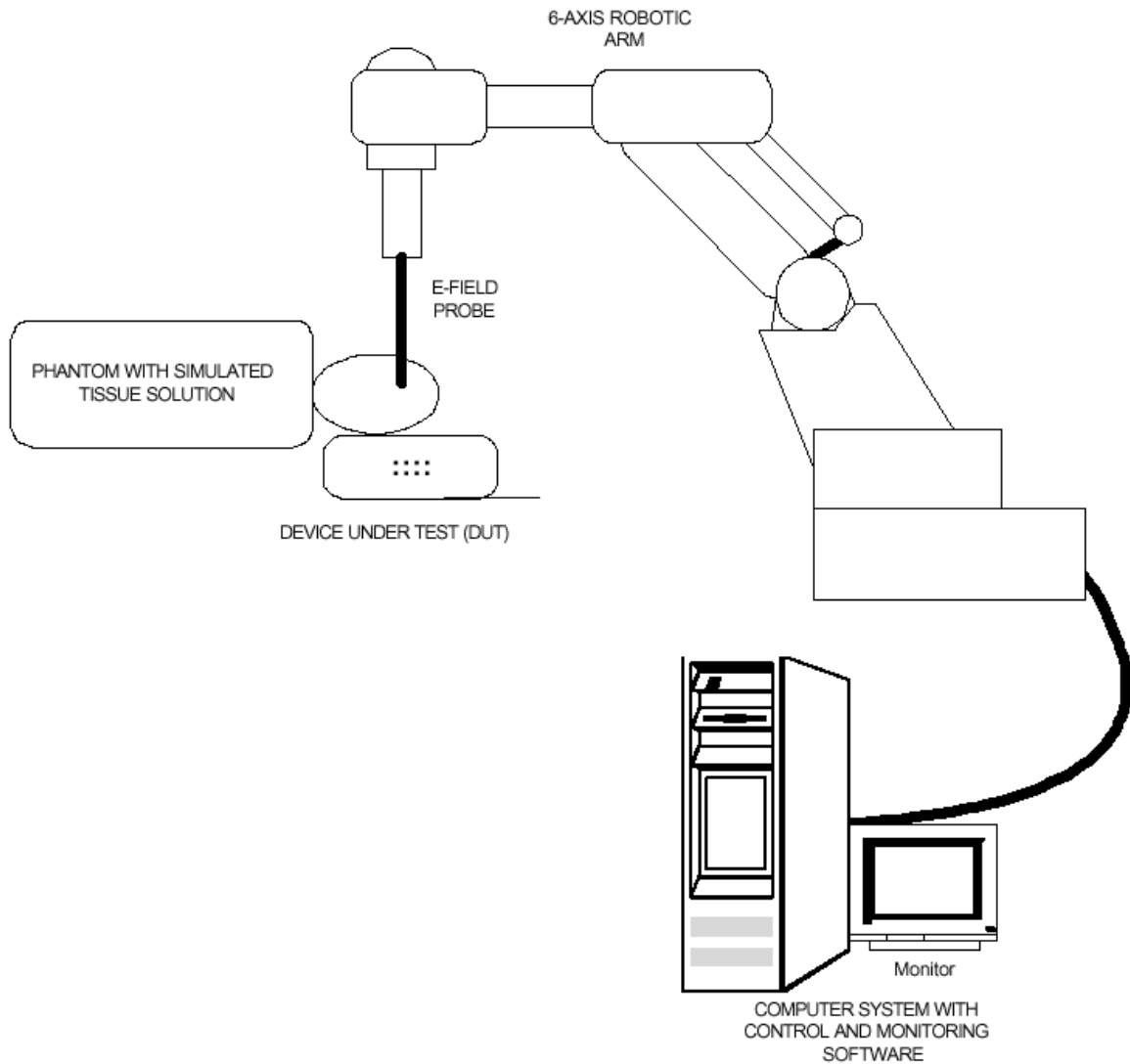
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2.8. BLOCK DIAGRAM OF TEST SETUP

The EUT was configured as normal intended use. The following block diagram shows a representative equipment arrangement during tests:



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EXHIBIT 3. SUMMARY OF TEST RESULTS

3.1. LOCATION OF TESTS

All of the measurements described in this report were performed at UltraTech Group of Labs located at:

3000 Bristol Circle, in the city of Oakville, Province of Ontario, Canada.

All measurements were performed in UltraTech’s shielded chamber, 24’ x 16’ x 8’.

3.2. APPLICABILITY & SUMMARY OF SAR RESULTS

The peak spatial - average SAR measured was found to be **0.719 Watts/Kg (1g average) at 2.5cm separation**

SAR Limits	Test Requirements	Compliance (Yes/No)
<p>General population/Uncontrolled exposure</p> <p>0.08W/kg whole body average and spatial peak SAR of 1.6W/kg, averaged over 1gram of tissue Hands, wrist, feet and ankles have a peak SAR not to exceed 4 W/kg, averaged over 10 grams of tissue.</p>	<p>Requirements using guidelines established in IEEE C95.1-1991</p> <p>FCC OET Bulletin 65 (Supplement C)</p> <p>Industry Canada RSS-102 (Issue 1).</p> <p>ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)</p>	<p>Yes</p>
<p>Occupational/Controlled Exposure</p> <p>0.4W/kg whole body average and spatial peak SAR of 8W/kg, averaged over 1gram of tissue Hands, wrist, feet and ankles have a peak SAR not to exceed 20 W/kg, averaged over 10 grams of tissue.</p>	<p>Requirements using guidelines established in IEEE C95.1-1991</p> <p>FCC OET Bulletin 65 (Supplement C),</p> <p>Industry Canada RSS-102 (Issue 1)</p> <p>ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)</p>	<p>N/A</p>

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EXHIBIT 4. MEASUREMENTS, EXAMINATIONS & TEST DATA

4.1. TEST SETUP

EUT Information		Condition	
Radio Type	Point of Sale	Robot Type	6 Axis
Model Number	NURIT 8000 CDPD	Scan Type	SAR - Area/Zoom
Serial Number	Test Sample	Measured Field	E
Frequency Band (MHz)	824 – 849 MHz	Phantom Type	Open Back Full Body
Frequency Tested (MHz)	824, 836.5 and 848.9	Phantom Position	Waist
Nominal Output Power (W)	530 mW, Conducted 489.8 mW (ERP)	Room Temperature	24°C
Antenna Type	Integrated pcb mount	Room Humidity	35%
Signal Type	CW	Tissue Temperature	23°C
Duty Cycle	100%		

Type of Tissue	Muscle
Target Frequency (MHz)	835
Target Dielectric Constant	52.5
Target Conductivity (S/m)	1.27
Composition (by weight)	Tap Water (40.97 %) Sugar (49.88 %) Salt (8.91%) HEC (0.14 %) Bactericide (0.10%)
Measured Dielectric Constant	54.9
Measured Conductivity (S/m)	1.26
Probe Name	E
Probe Orientation	Isotropic
Probe Offset (mm)	2.25
Sensor Factor	10.8
Conversion Factor	0.880
Calibration Date (MM/DD/YY)	14/06/2001

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4.2. PHOTOGRAPH OF EUT WITH ALL ACCESORIES



<Front View>

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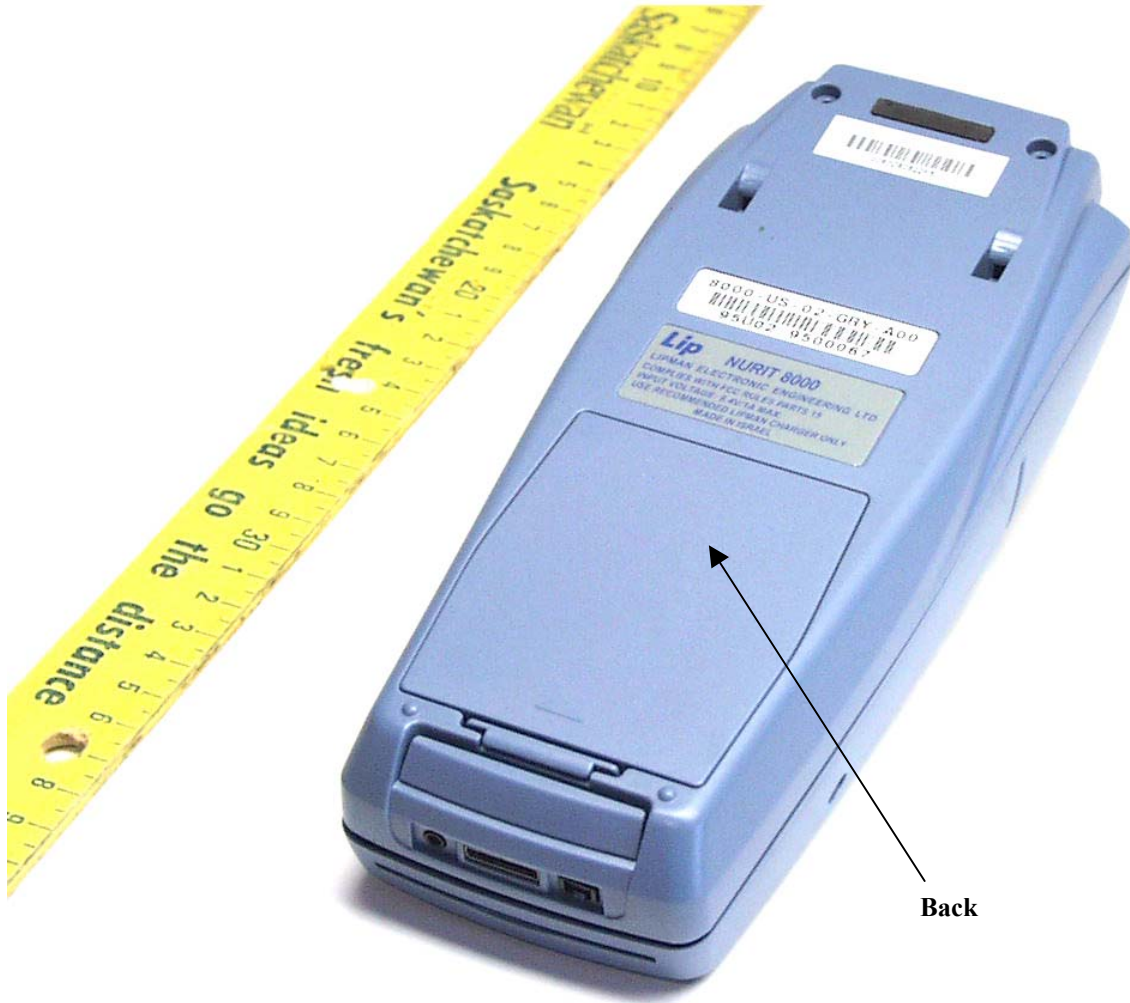
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Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI



<Back View>

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FCC ID: O2SNURIT8000CI



<Front View – Showing Internal Integral Antenna>

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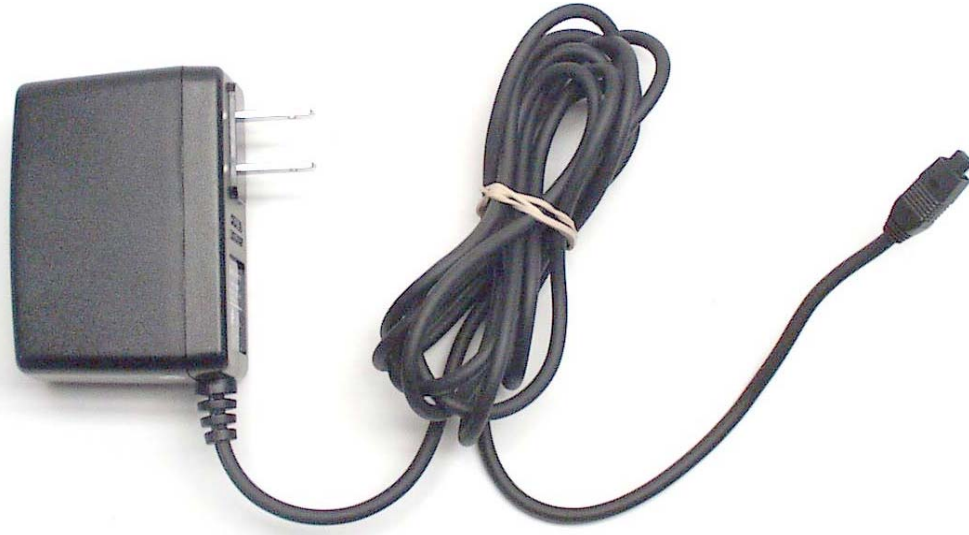
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Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI



<Side View - Lipman USA Inc., Power Supply/Charger, Model No.: TRF00050>



<Rear View - Lipman USA Inc., Power Supply/Charger, Model No.: TRF00050>

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Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI



<Front View – Lipman USA, Inc. Li-ion Battery Pack, Model BAT00021, 7.2V, 1450mAh>



<Rear View – Lipman USA, Inc. Li-ion Battery Pack, Model BAT00021, 7.2V, 1450mAh>

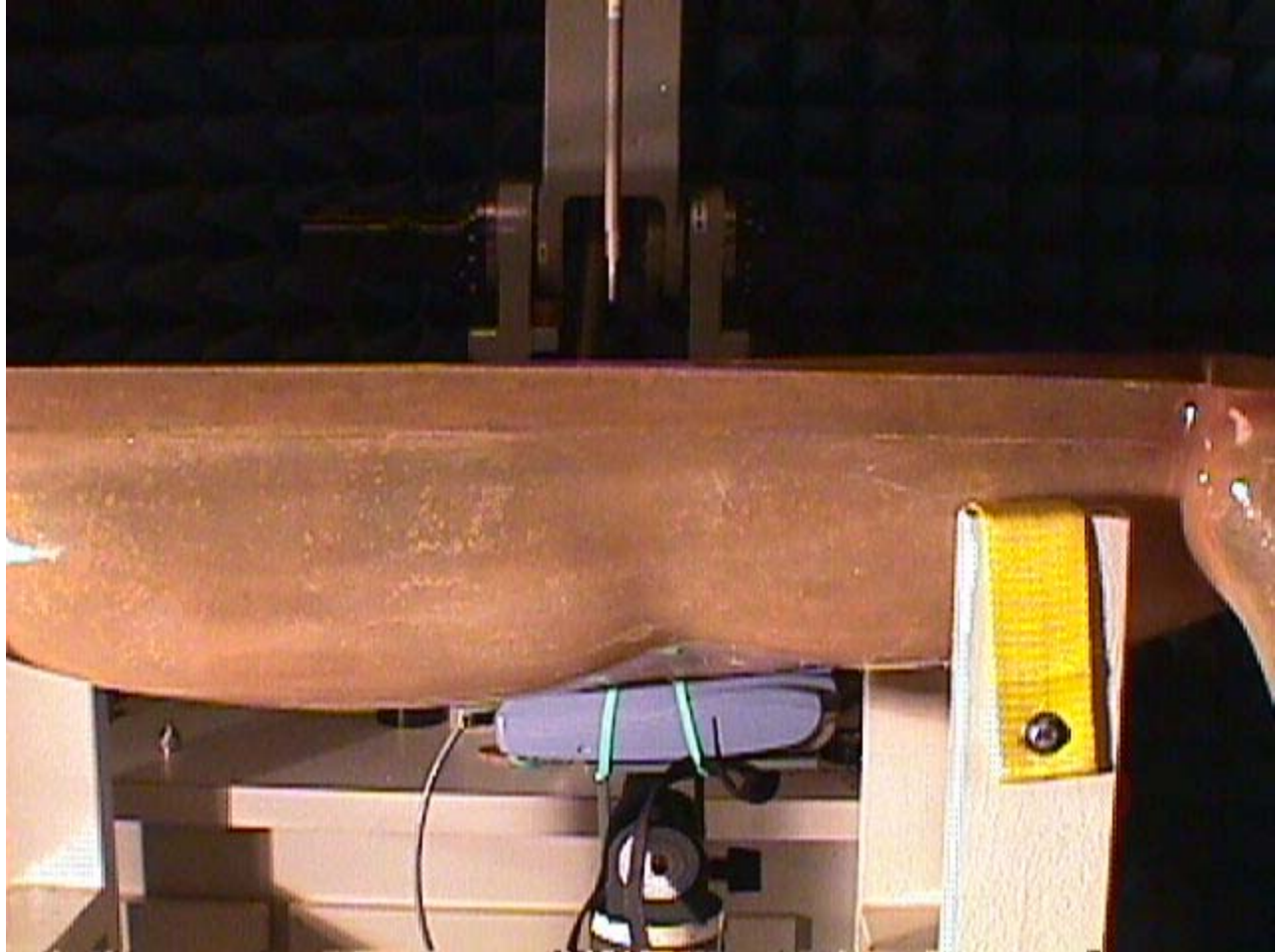
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4.3. PHOTOGRAPHS OF EUT POSITION (BODY)



< Back surface of EUT parallel to the phantom waist – Overview >

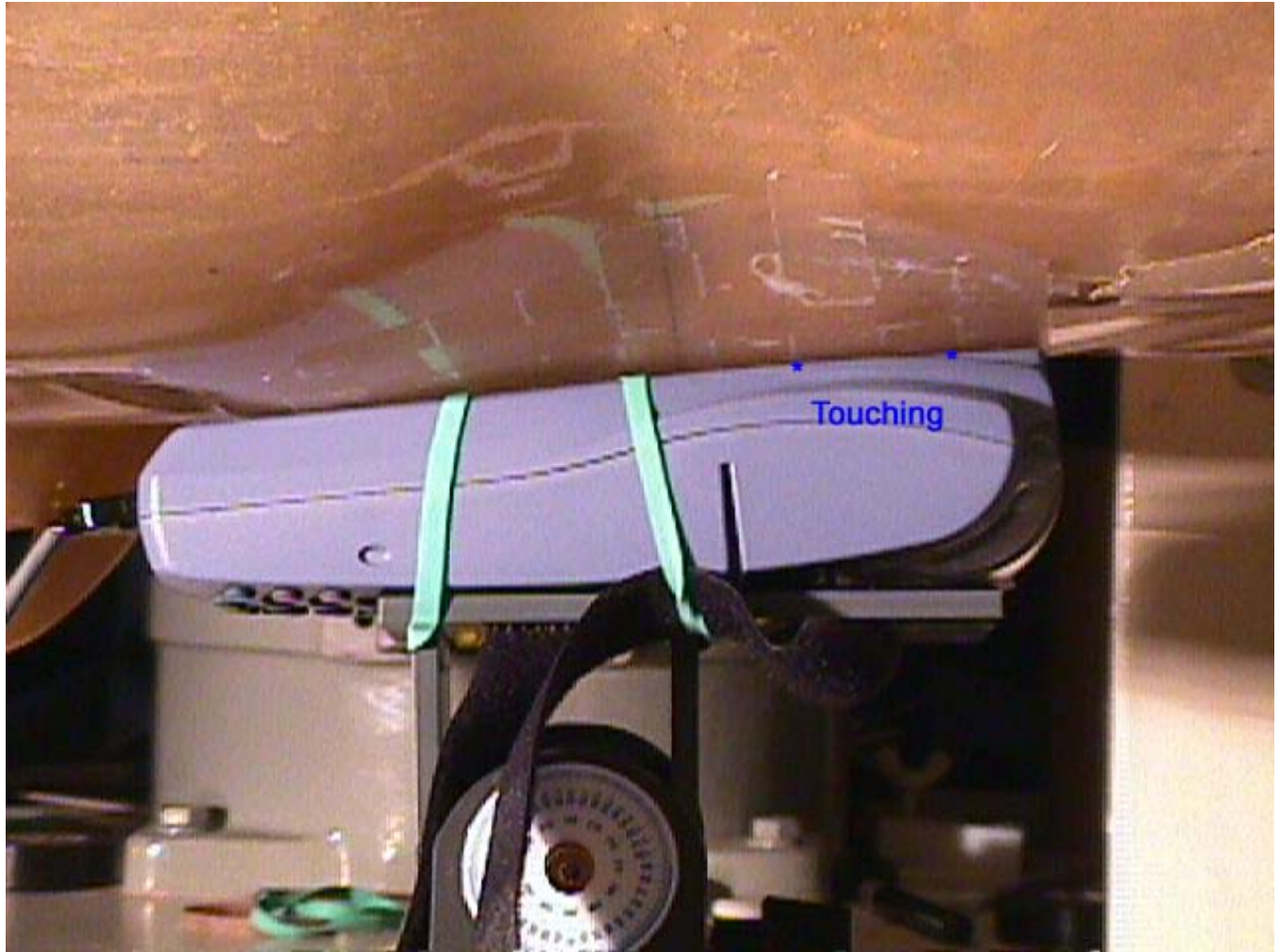
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< Back surface of EUT parallel and in contact to the phantom waist – Close-Up View >

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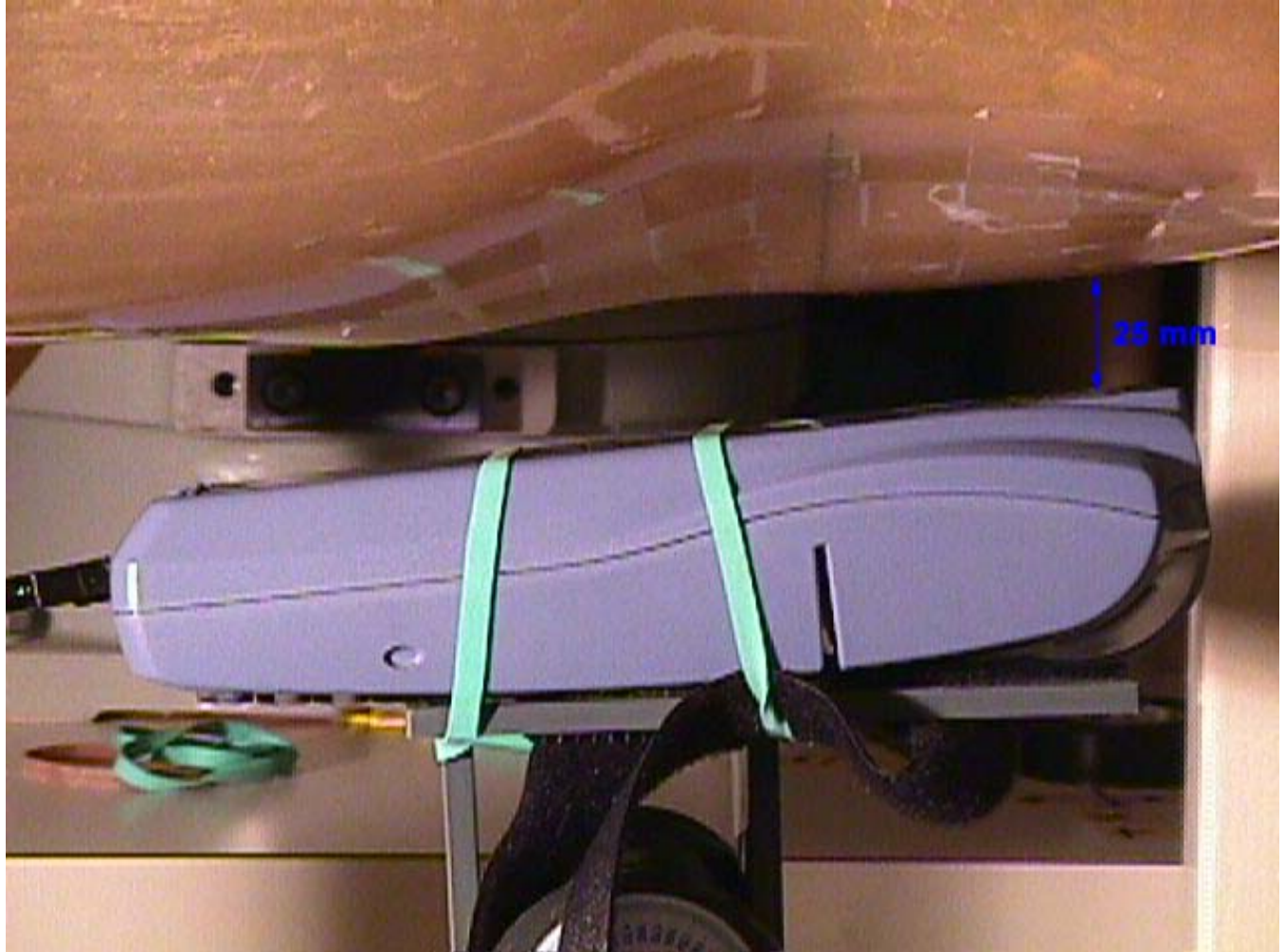
< Back surface of EUT parallel and 15 mm away from the phantom waist – Close-Up View >

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< Back surface of EUT parallel and 25 mm away from the phantom waist – Close-Up View >

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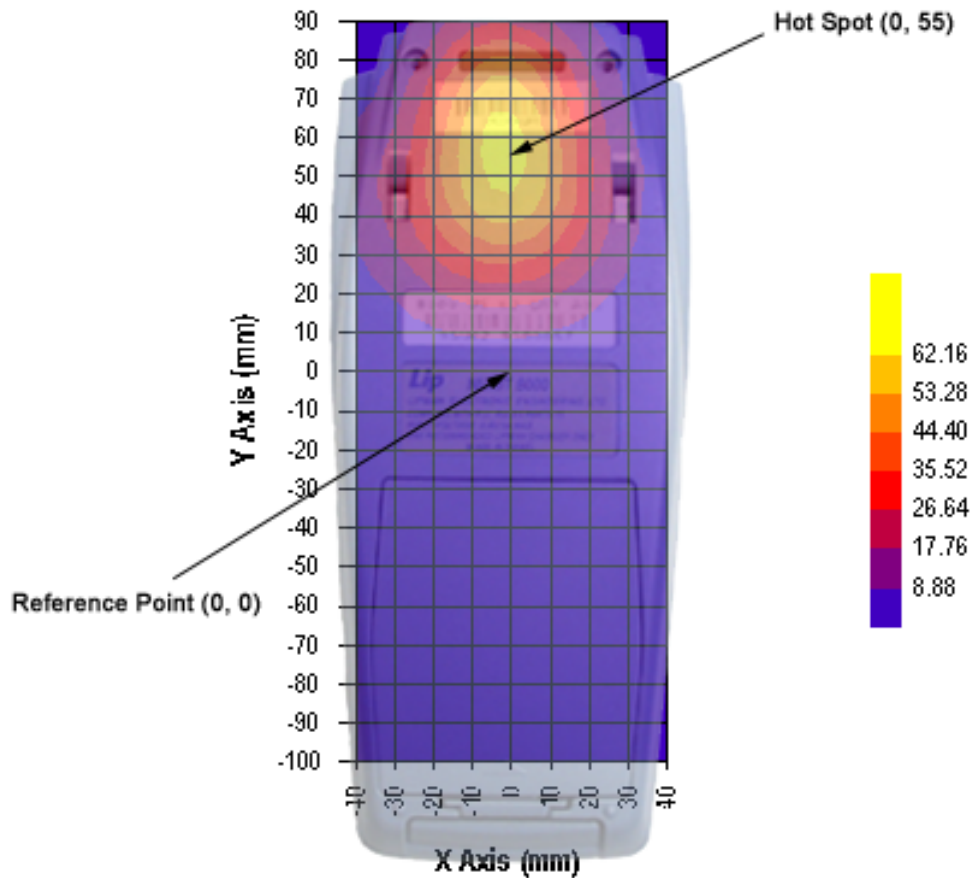
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4.4. MAXIMUM FIELD LOCATION (BODY)

The maximum field was found to be located at (0, 55) with the test configuration as described below:

- ◆ Waist position
- ◆ The Back of EUT in contact with the phantom

Complete area Pre-scans on all faces of the EUT were conducted to determine the location of the highest SAR and the device was repositioned to allow the identified hot-spots to be orientated with as large an area around the hot-spots to come into contact with the phantom surface. This procedure ensured that the maximum SAR readings would be obtained from the hot-spot areas identified.



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4.5. PEAK SPATIAL-AVERAGE SAR MEASURED

Phantom Configurations	Device Test Positions	Antenna Position	SAR (W/kg) Frequency & Output
			836.5 MHz, 457.1 mW (ERP)
Waist	Back of EUT with 25 mm separation from the phantom	Internal Integral	0.719

4.6. SAR MEASUREMENT DATA

4.6.1. Prescan Test Results at 836.5 MHz with EUT Face in contact with phantom surface

EUT Face scanned	Maximum SAR Observed (W/Kg)	Location of hot spot
Back	4.638	Antenna Feed area
Top	0.903	Antenna Feed area
Front	0.461	Antenna Feed area
Left	0.682	Antenna Feed area
Right	0.551	Antenna Feed area

4.6.2. Detailed SAR Results with EUT relocated for maximum contact with phantom surface

EUT Configurations	EUT Separation Distance To Phantom (mm)	Antenna Position	SAR (W/kg) Device Test Frequency & Output		
			824 MHz 489.8 mW (ERP)	836.5 MHz 457.1 mW (ERP)	848.9 MHz 302.0 mW (ERP)
Back surface of EUT parallel to phantom waist	15	Internal	1.184	1.584	1.587
	25	Internal	0.530	0.719	0.711

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EXHIBIT 5. SAR SYSTEM CONFIGURATION & TEST METHODOLOGY

5.1. MEASUREMENT SYSTEM SPECIFICATIONS

Positioning Equipment	Probe
Type : 3D Near Field Scanner Location Repeatability : 0.1mm Speed 180 °/sec AC motors	Sensor : E-Field Spatial Resolution : 0.1 cm ³ Isotropic Response : ± 0.25 dB Dynamic Range : 2 µW/g to 100 mW/g
Computer	Phantom
Type : 166 MHz Pentium Memory : 32 Meg. RAM Operating System : Windows NT Monitor : 17" SVGA	Tissue : Simulated Tissue with electrical characteristics similar to those of the human at normal body temperature. Shell : Fiberglass human shell shaped (1.5 mm thick)

5.2. TEST PROCEDURES

In the SAR measurement, the positioning of the probes must be performed with sufficient accuracy to obtain repeatable measurements in the presence of rapid spatial attenuation phenomena. The accurate positioning of the E-field probe is accomplished by using a high precision robot. The robot can be taught to position the probe sensor following a specific pattern of points. In a first sweep, the sensor is positioned as close as possible to the interface, with the sensor enclosure touching the inside of the fiberglass shell. The SAR is measured on a grid of points, which covers the curved surface of the phantom in an area larger than the size of the DUT. After the initial scan, a high-resolution grid is used to locate the absolute maximum measured energy point. At this location, attenuation versus depth scan will be accomplished by the measurement system to calculate the SAR value.

5.3. PHANTOM

The phantom used in the evaluation of the RF exposure of the user of the wireless device is a clear fiberglass enclosure 1.5 mm thick, shaped like a human head or body and filled with a mixture simulating the dielectric characteristics of the brain, muscle or other types of human tissue. The maximum width of the cranial model is 17 cm, the cephalic index is 0.7 and the crown circumference of the cranial model is 61 cm. The ear is 6 mm above the outer surface of the shell.

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5.4. SIMULATED TISSUE

Simulated Tissue: Suggested in a paper by George Hartsgrove and colleagues in University of Ottawa Ref.: Bioelectromagnetics 8:29-36 (1987)

Ingredient	Quantity
Water	40.4 %
Sugar	56.0 %
Salt	2.5 %
HEC	1.0 %
Bactericide	0.1 %

Table. Example of composition of simulated tissue.

This simulated tissue is mainly composed of water, sugar and salt. At higher frequencies, in order to achieve the proper conductivity, the solution does not contain salt. Also, at these frequencies, D.I. water and alcohol is preferred.

Tissue Density: Approximately 1.25 g/cm³

5.4.1. Preparation

We determine the volume needs and carefully measure all components. A clean container is used where the ingredients will be mixed. A stirring paddle mounted to a drill press is used to stir the mixture. First we heat the DI water to about 40 °C to help the ingredients dissolve and then we pour the salt and the bactericide. We stir until all the ingredients are completely dissolved. We continue stirring slowly while adding the sugar. We avoid high RPM from the mixing device to prevent air bubbles in the mixture. Later on, we add the HEC to maintain the solution homogeneous. Mixing time is approximately 30 to 40 min.

5.5. MEASUREMENT OF ELECTRICAL CHARACTERISTICS OF SIMULATED TISSUE

- 1) Network Analyzer HP8753C or others
- 2) Slotted Coaxial Waveguide

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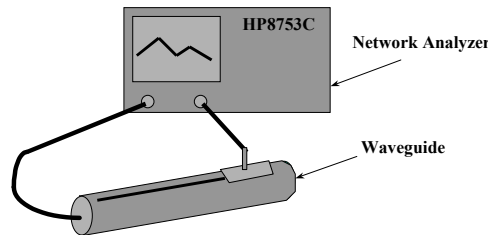
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5.5.1. Description Of The Slotted Coaxial Waveguide

The cylindrical waveguide is constructed with copper tube of about 30 to 40 cm in length, generally 12.5 mm diameter, with connectors at both ends. Inside of this tube, a conductive rod about 6.3 mm is coaxial supported by the two ends connectors (radiator). A slot 3 mm wide start at the beginning of the tube to approximately two thirds of the tube length. The outer edge of the slotted tube is marked in increments of 1 centimeter (10 to 12), and 0.5 centimeter for higher frequencies. A saddle piece containing the sampling probe is inserted in the slot so the tip of the probe is close but not in contact with the inner conductor (radiator).

To measure the electrical characteristics of the liquid simulated tissue, we fill the coaxial waveguide with the mixture, select CW frequency and measure amplitude and phase with the Network Analyzer for every point in the slot (typically 11). An effort is made to keep the resultant dielectric constant and conductivity within 5 % of published data.

Electrical Characteristics Measurement Setup



$$c = 3 \cdot 10^8 \text{ m/s}$$

$$A = \frac{\Delta A}{20} \ln_{10} \frac{1}{m}$$

$$\theta = \frac{\Delta \theta \cdot 2\pi}{360}$$

$$\lambda = \frac{c}{f} \cdot \frac{100}{2.54} \text{ inches}$$

$$\epsilon_{re} = \frac{(A^2 + \theta^2) \cdot \lambda^2}{4\pi^2}$$

$$\theta' = \left| \frac{|A| \cdot \lambda}{4\pi \sqrt{\epsilon_{re}}} \right|$$

$$S = \tan (2\theta')$$

$$\epsilon_r = \frac{\epsilon_{re}}{\sqrt{(1 + S^2)}}$$

$$\sigma = S \cdot 2\pi \cdot f \cdot 8.854 \cdot 10^{12} \cdot \epsilon_r \text{ (S/m)}$$

Where: ΔA is the amplitude attenuation in dB
 $\Delta \theta$ is the phase change in degrees for 5 cm of wave propagation in the slotted line
 f is the frequency of interest in Hz.

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5.6. SYSTEM DESCRIPTION

The measurement system consists of an E-field probe, instrumentation amplifiers, RF transparent cable connecting the amplifiers to the computer, the robotics arm with its extension and proximity sensors, a phantom with simulated tissue and a radio holder to support the device under test. The E-field probe is a three channel device used to measure RF electric fields in the near vicinity of the source. The three sensors are mutually orthogonal positioned dipoles, and are constructed over a quartz substrate. Located in the center of the dipole is a Schottky diode. High impedance lines are connecting the sensor to the amplifier and then optically linked to the computer. The probe has an isotropic response and is transparent to the RF fields.

Calibration is performed by two steps:

- 1)** Determination of free space E-field from amplified probe outputs in a test RF field. This calibration is performed in a TEM cell when the frequency is below 1 GHz and in a waveguide or some other methodologies above 1 GHz. For the free space calibration, we place the probe in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. This reading equate to 1mW/cm² if that power density is available in the correspondent cavity.
- 2)** Correlation of the measured free space E-field, to temperature rise in a dielectric medium. E-field temperature correlation calibration is performed in a planar phantom filled with the appropriate simulated tissue.

For temperature correlation calibration, a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe. First, the location of the maximum E-field close to the phantom’s inner surface is determined as a function of power into the RF source; in this case, a dipole. Then, the E-field probe is moved sideways so that the temperature probe, while affixed to the E-field probe is placed at the previous location of the E-field probe. Finally, temperature changes for 30 seconds exposure at the same RF power levels used for the E-field measurement are recorded. The following equation relates SAR to initial temperature slope:

$$SAR = C \frac{\Delta T}{\Delta t}$$

- where: Δt = exposure time (30 seconds),
 C = heat capacity of tissue (brain or muscle),
 ΔT = temperature increase due to RF exposure.

The heat capacity used for brain simulated tissue is 2.7 joules⁰/C/g and 3.0 joules⁰/C/g for muscle.

SAR is proportional to $\Delta T / \Delta t$, the initial rate of tissue heating, before thermal diffusion takes place. Now, it’s possible to quantify the electric field in the simulated tissue by equating the thermally derived SAR to the E-field;

$$SAR = \frac{|E|^2 \cdot \sigma}{\rho}$$

- where: σ = Simulated tissue conductivity
 ρ = Tissue density (1.25 g/cm³ for simulated tissue)

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5.7. DATA EXTRAPOLATION (CURVE FITTING)

The distance from the center of the sensor (diode) to the end of the protective tube is called the ‘probe offset’. To compensate we use an exponential curve fitting method to obtain the peak surface value from the voltages measured at the distance from the inner surface of the phantom. At the point where the highest voltage was recorded, the field is measured as close as possible to the phantom’s surface and every 1mm along the ‘Z’ axis for a distance of 50 mm. The appropriate exponential curve is obtained from all the points measured and used to define an exponential decay of the energy density versus depth.

$$E(z) = E_0 \cdot e^{-z/\delta} \text{ (mV)}$$

5.8. INTERPOLATION AND GRAM AVERAGING

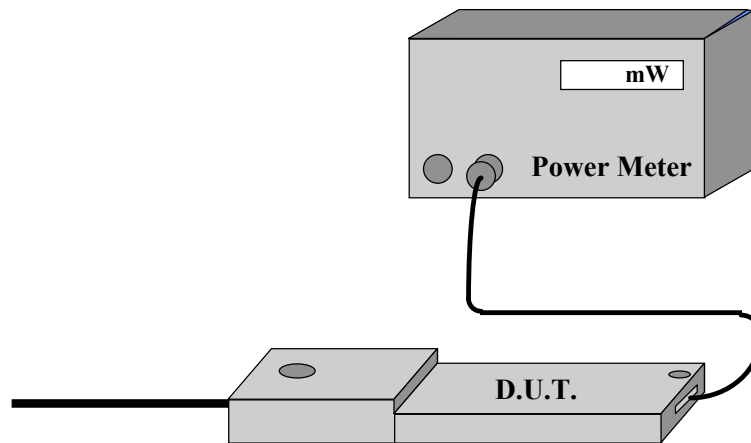
The voltage, (1 cm) above the phantoms surface (E_{tot} 1 cm), is needed to calculate the exposure over one gram of tissue. This SAR value that estimates the average over 1 gram of tissue, is obtained by taking the integral over 1 cm² surface of the measured field along the exponential decay curve of the energy density with depth.

$$SAR(mW/g) = \int_{v=1g} SAR(\bullet)dv = \int_{s=1cm^2} \int_0^{1cm} E(z) \cdot \frac{CF}{SensorFactor} dzds$$

5.9. POWER MEASUREMENT

Whenever possible, a conducted power measurement is performed. To accomplish this, we utilize a fully charged battery, a calibrated power meter and a cable adapter provided by the manufacturer. The data of the cable and related circuit losses are also provided by the manufacturer. The power measurement is then performed across the operational band and the channel with the highest output power is recorded.

Power measurement is performed before and after the SAR to verify if the battery was delivering full power at the time of testing. A difference in output power would determine a need for battery replacement and to repeat the SAR test.



Measured Power + Cable and Switching Mechanism Loss

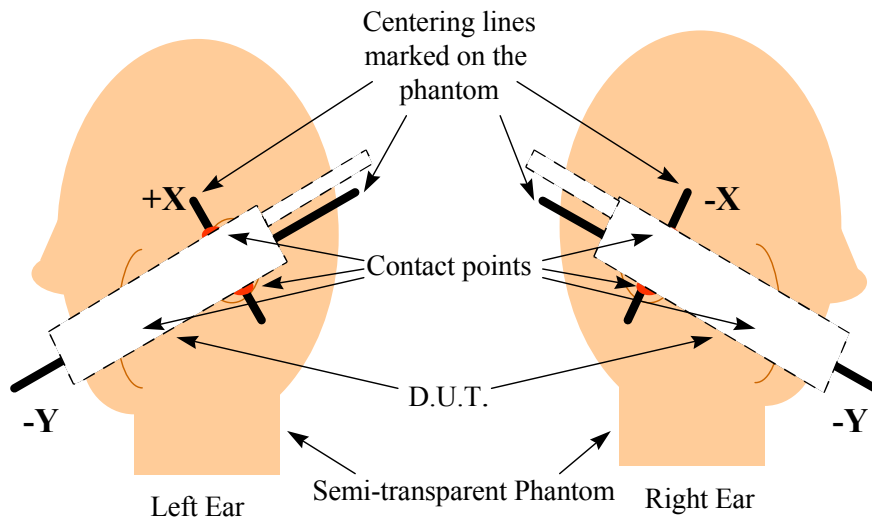
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5.10. POSITIONING OF D.U.T.

The clear fiberglass phantom shell have been previously marked with a highly visible line, so it can easily be seen through the liquid simulated tissue. In the case of testing a cellular phone, this line is connecting the ear channel with the corner of the lips. The D.U.T. is then placed by centering the speaker with the ear channel and the center of the radio width with the corner of the mouth. At the same time the surface of the D.U.T. is always in contact with the phantoms shell. Three points contact; two in the ear region and one on the chin in addition to the previously describe alignment will assure repeatability of the test.

For HAND HELD devices (push-to-talk), or any other type of wireless transmitters, the D.U.T. will be positioned as suggested by manufacturer operational manuals.

Positioning of the D.U.T.

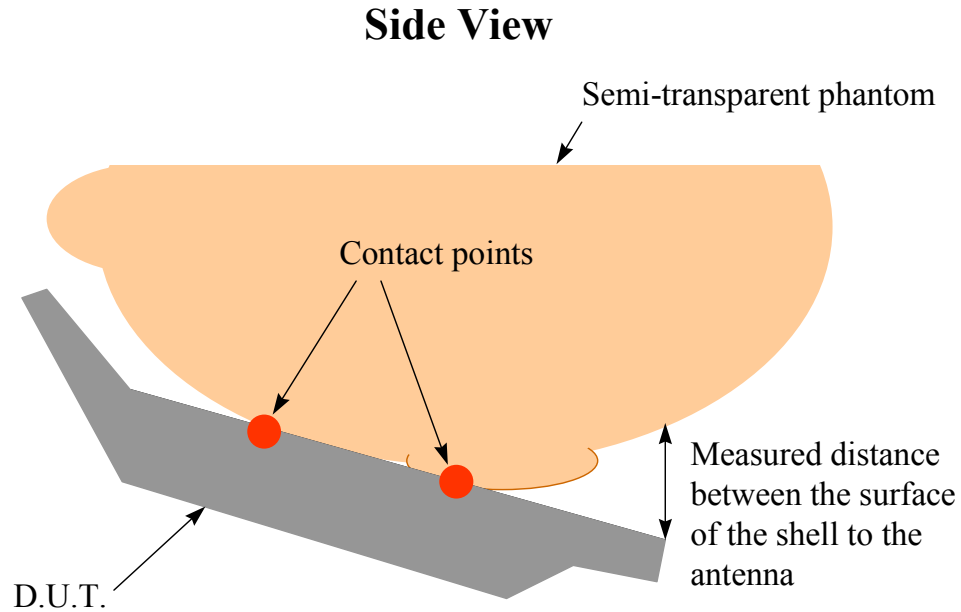


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5.11. SAR MEASUREMENT UNCERTAINTY

This uncertainty analysis covers the 3D-EMC Laboratory test procedure for Specific Absorption Rate (SAR) associated with wireless telephones and similar devices.

Standards Covered Are:

WGMTE 96/4 - Secretary SC211/B

FCC 96-326, ET Docket No. 93-62

Industry Canada RSS 102

ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)

The laboratory test procedure, and this uncertainty analysis, may be used to cover all standards above. It is based on test equipment and procedures specified by 3D-EMC Laboratories, Inc. located in Ft. Lauderdale, Florida.

Measurement Uncertainty:

Table I. Estimated SAR Measurement Uncertainty

Contribution	Error (±dB)	Probability Distribution	Type Evaluation	Standard Uncertainty (±dB)
A. Field Measurement Errors:		Rectangular	Type B	
Isotropy in Phantom BTS Liquid	0.8			0.46
Frequency Response	0.2			0.12
Linearity	0.2			0.12
Probe Calibration Error (rss)	0.7			0.40
Duty Factor Variability	0.2			0.12
B. Spatial Peak SAR Errors:		Normal	Type A	
Extrapolation & Interpolation, and Position	0.2			0.20
Integration & Search Routine	0.1			0.10
Cube Shape	0.2			0.20
C. Additional Errors:		Rectangular	Type B	
Solution Variability (Worst-Case SAR)	0.21			0.12
D. Combined Standard Uncertainty, u_c :		Normal	-	0.52
E. Expanded Uncertainty, U :		Normal (k=2)	-	1.04
		95% Confidence	-	27.14%

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EXHIBIT 6. BODY WORN CONFIGURATION INFORMATION

FCC OET 65 Supplement C Requirements

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. The EUT was placed against the phantom and tested in its appropriate holster as would normally be used by the end user. If the SAR measured at the middle channel for each test is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).

If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional

When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. **A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances.** Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components..

Equipment permutation investigated for each orientation

The manufacturer does not include a body-mounting device for this device and it is not intended to be used as a body worn device. An investigation for bystander SAR effects were carried out using the body worn requirements as a guideline. As such, a preliminary scan on all faces of the EUT were carried out to determine the potential hot spot locations. A more detailed investigation into the peak spatial SAR was carried out on two faces of the EUT that demonstrated the hottest spots and this was determined to be where the integrated PCB antenna was located. The separation distance to the phantom was varied to determine at what separation distance the device would safely meet the 1.6W/kg requirements for general population use for body worn devices.

All tests were carried out using 25% duty cycle which the worst case duty cycle as limited on the network the radio modem is designed to be used in.

Comments on non-tested configurations

Head positions were not investigated as this is considered abnormal use. No other configurations considered abnormal use, were investigated.

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Point of Sale Device, Model No.: NURIT 8000 CDPD**FCC ID: O2SNURIT8000CI****Recommended Caution Statements to be included in Users Manual**

In order for users to be aware of the body-worn operating requirements for meeting RF exposure compliance, operating instructions and caution statements should be included in the manual. The information should allow users to make informed decisions on the type of body-worn accessories and operating configurations that are appropriate for the device. The following are *examples* of typical statements that provide end-users with the necessary information about body-worn accessories:

1. For a product that has the potential to be used in a body worn configuration and has been tested and certified with a specific accessory device(s):

“For body worn operation, this device has been tested and meets the FCC RF exposure guidelines when used with the (*manufacturer name*) accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.”

2. For a product that has the potential to be used in a body worn configuration and has not been certified with a specific accessory device(s):

“For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with an accessory that contains no metal and that positions the device a minimum of 2.5cm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.”

3. For a product that has the potential to be used in a body worn configuration with future manufacturer designed accessories:

“For body worn operation, this device has been tested and meets the FCC RF exposure guidelines when used with a (*manufacturer name*) accessory designated for this product or when used with an accessory that contains no metal and that positions the handset a minimum of (specified distance) from the body.”

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**File #: LIP9-SAR
October 23, 2001**

- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia), VCCI (Japan)
- Accredited by Industry Canada (Canada) under ACC-LAB (Europe/Canada MRA and APEC/Canada MRA)
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EXHIBIT 7. PRESCAN TO DETERMINED WORST CASE SAR MEASUREMENT

The EUT were pre-scanned to determined location of the hot spot locations where the highest SAR would be located. The pre-scans were conducted on the waist of a full body open back phantom and the EUT was operating at 836.5 MHz. Pre-scans were performed in the following configurations:

1. Back of EUT in contact and parallel to phantom
2. Top of EUT in contact and parallel to phantom
3. Front of EUT in contact and parallel to phantom
4. Left side of EUT in contact and parallel to phantom
5. Right side of EUT in contact and parallel to phantom

The previous scans made on the 5 faces indicated that the hot spot is located near the antenna PCB assembly at the top of the EUT. The Base of the EUT was therefore not scanned as all scans indicated very low emissions in this area.

The following pre-scans test data results in their respective order indicates that test configuration #1 is the worst-case, complete test will be performed in those configurations.

Pre-scan test results at 836.5 MHz with EUT Face in contact with phantom surface

EUT Face Scanned	Maximum SAR Observed (W/Kg)	Location of Hot Spot
Back	4.638	Antenna Feed area
Top	0.903	Antenna Feed area
Front	0.461	Antenna Feed area
Left	0.682	Antenna Feed area
Right	0.551	Antenna Feed area

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Test Information

Date : 17/10/2001
Time : 4:01:14 PM

<u>Product</u>	: Point Of Sale Device	<u>Test</u>	: SAR
<u>Manufacturer</u>	: Lipman USA, Inc	<u>Frequency (MHz)</u>	: 836.5
<u>Model Number</u>	: NURIT 8000 CDPD	<u>Nominal Output Power (W)</u>	: 0.600
<u>Serial Number</u>	: Test Sample	<u>Antenna Type</u>	: Patch
<u>FCC ID Number</u>	: O2SNURIT8000CI	<u>Signal</u>	: CW

<u>Phantom</u>	: Waist	<u>Dielectric Constant</u>	: 54.9
<u>Simulated Tissue</u>	: Muscle	<u>Conductivity</u>	: 1.260

<u>Probe</u>	: UT-ETR-0200-1	<u>Antenna Position</u>	: Back Face
<u>Probe Offset (mm)</u>	: 2.250	<u>Measured Power (W)</u>	: 0.490
<u>Sensor Factor (mV)</u>	: 10.8	(conducted)	
<u>Conversion Factor</u>	: 0.880	<u>Cable Insertion Loss (dB)</u>	: 0
<u>Calibrated Date</u>	: 14/06/2001	<u>Compensated Power (W)</u>	: 0.490

Amplifier Setting :

Channel 1 : 0.0060	Channel 2 : 0.0056	Channel 3 : 0.0073
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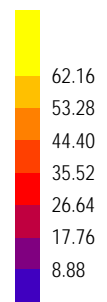
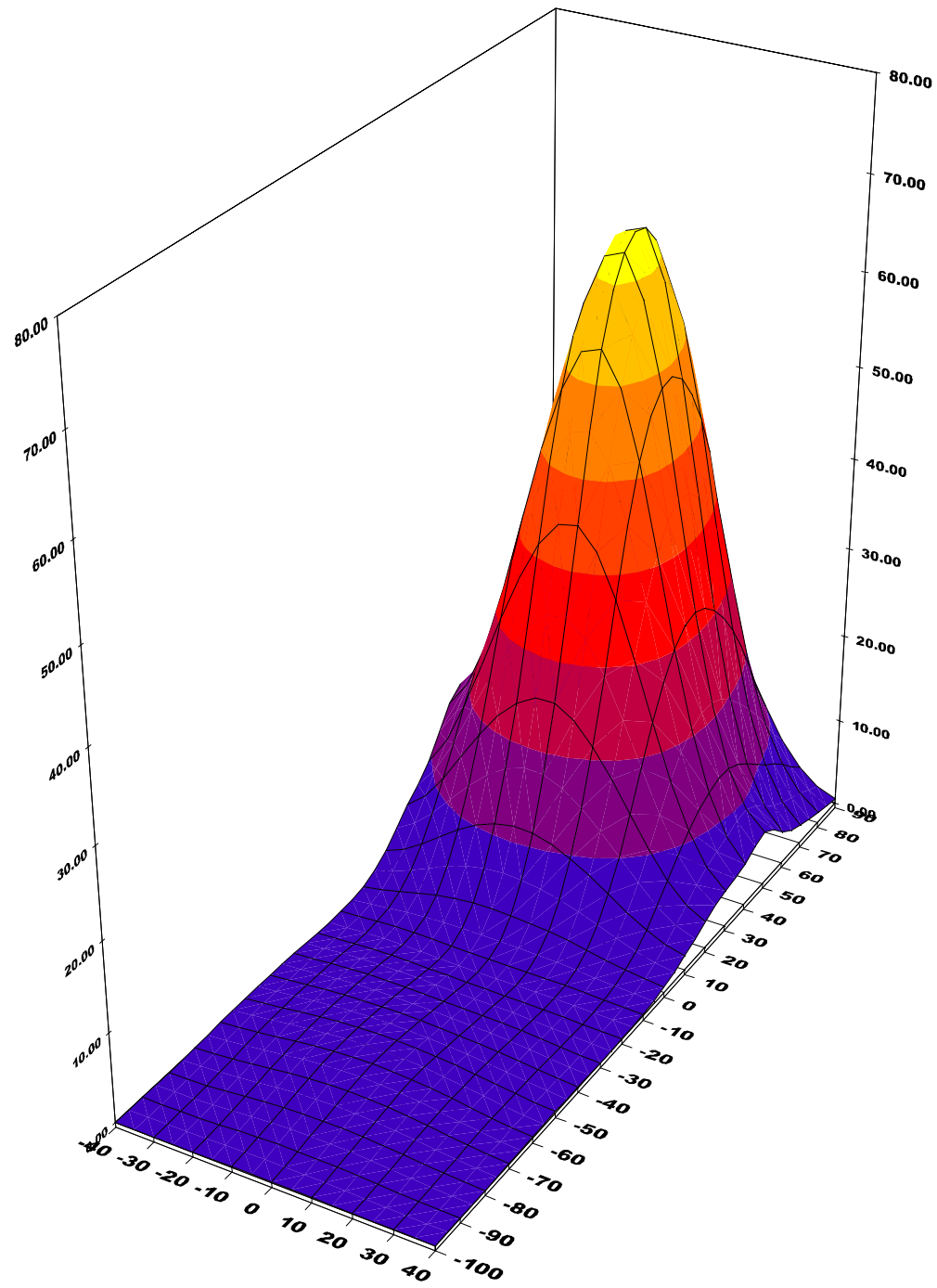
Location of Maximum Field :

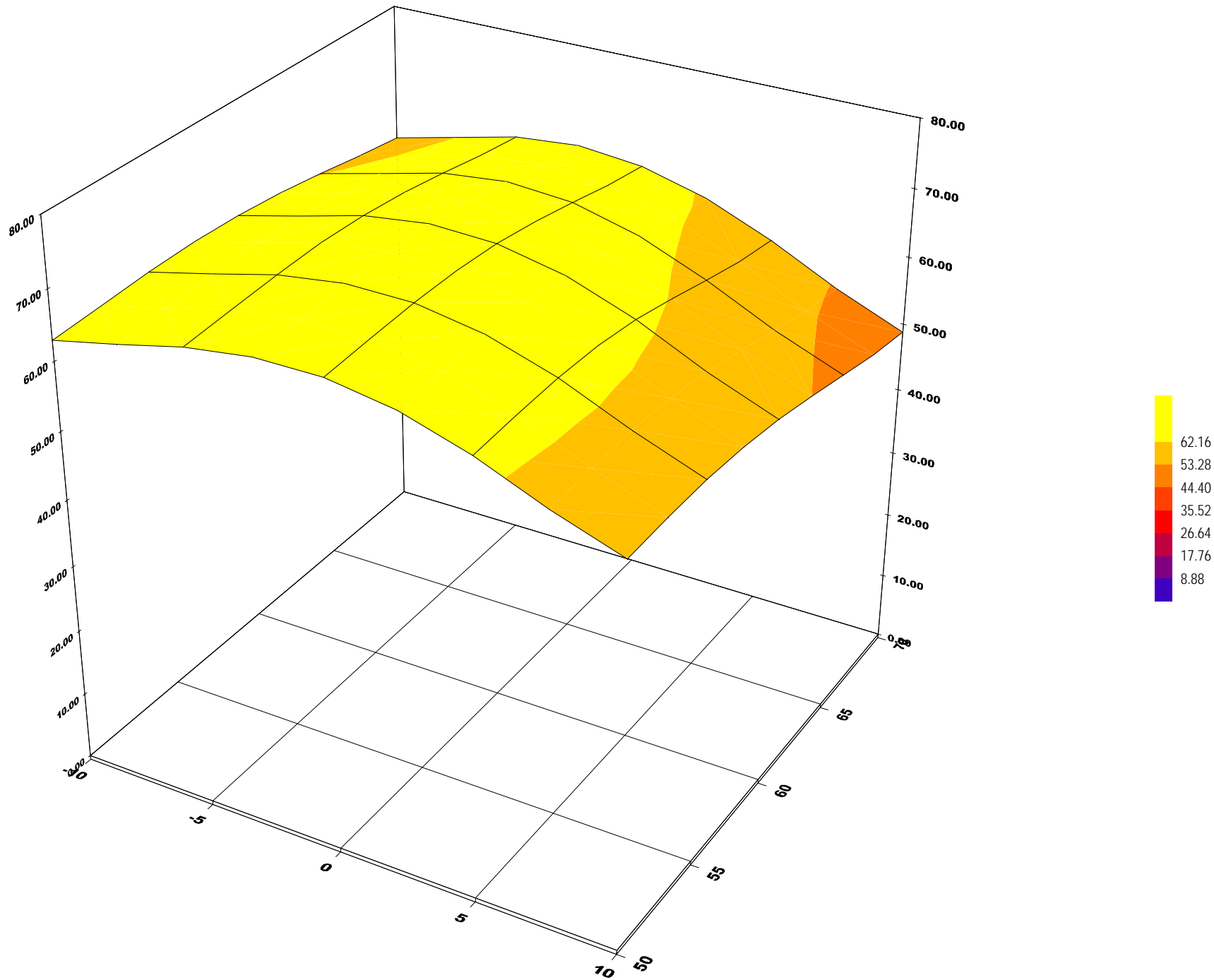
X = 0 Y = 55

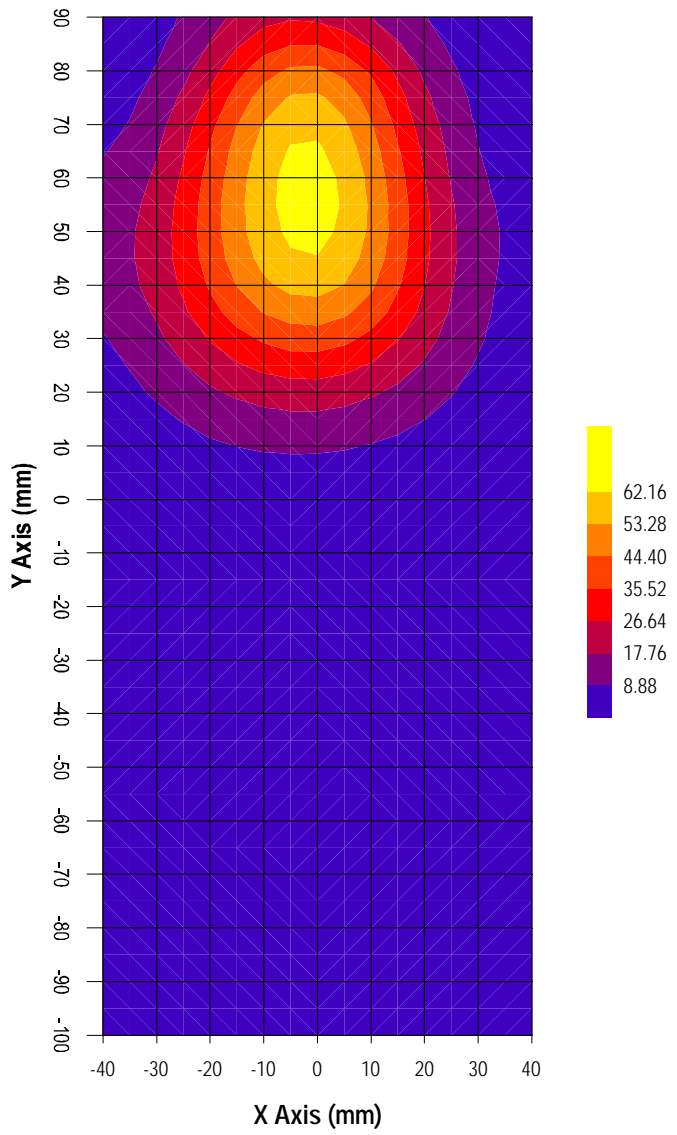
Measured Values (mV) :

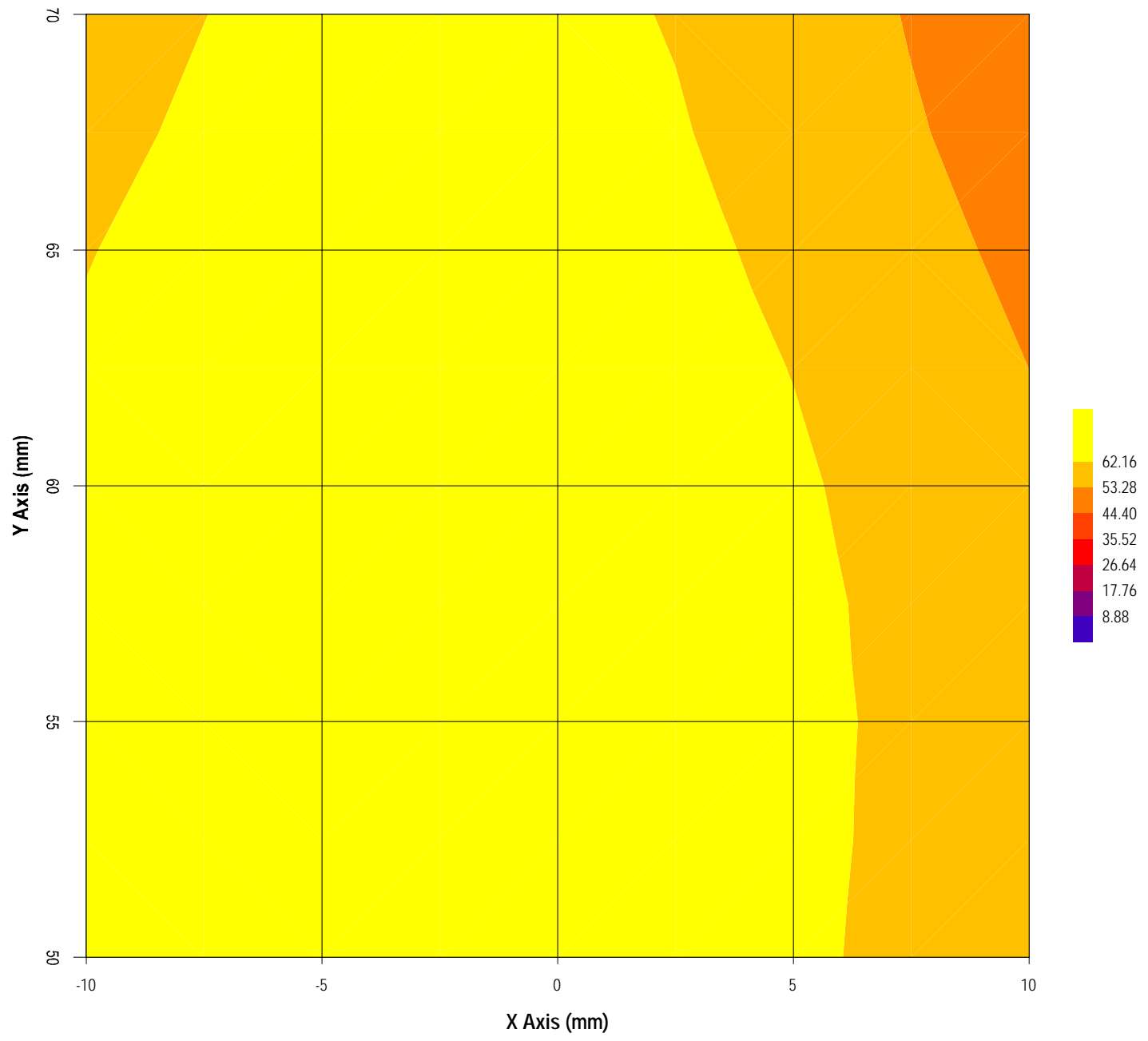
70.833	66.356	61.033	55.159	51.293	47.167
43.924	40.639	38.306	34.955	32.447	

<u>Peak Voltage (mV)</u>	: 84.768	<u>1 Cm Voltage (mV)</u>	: 38.674	<u>SAR (W/Kg)</u>	: 4.638
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Test Information

Date : 17/10/2001

Time : 3:23:04 PM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 836.5
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Top Face
Measured Power (W) : 0.490
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.490

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

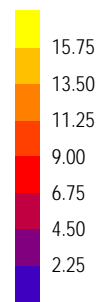
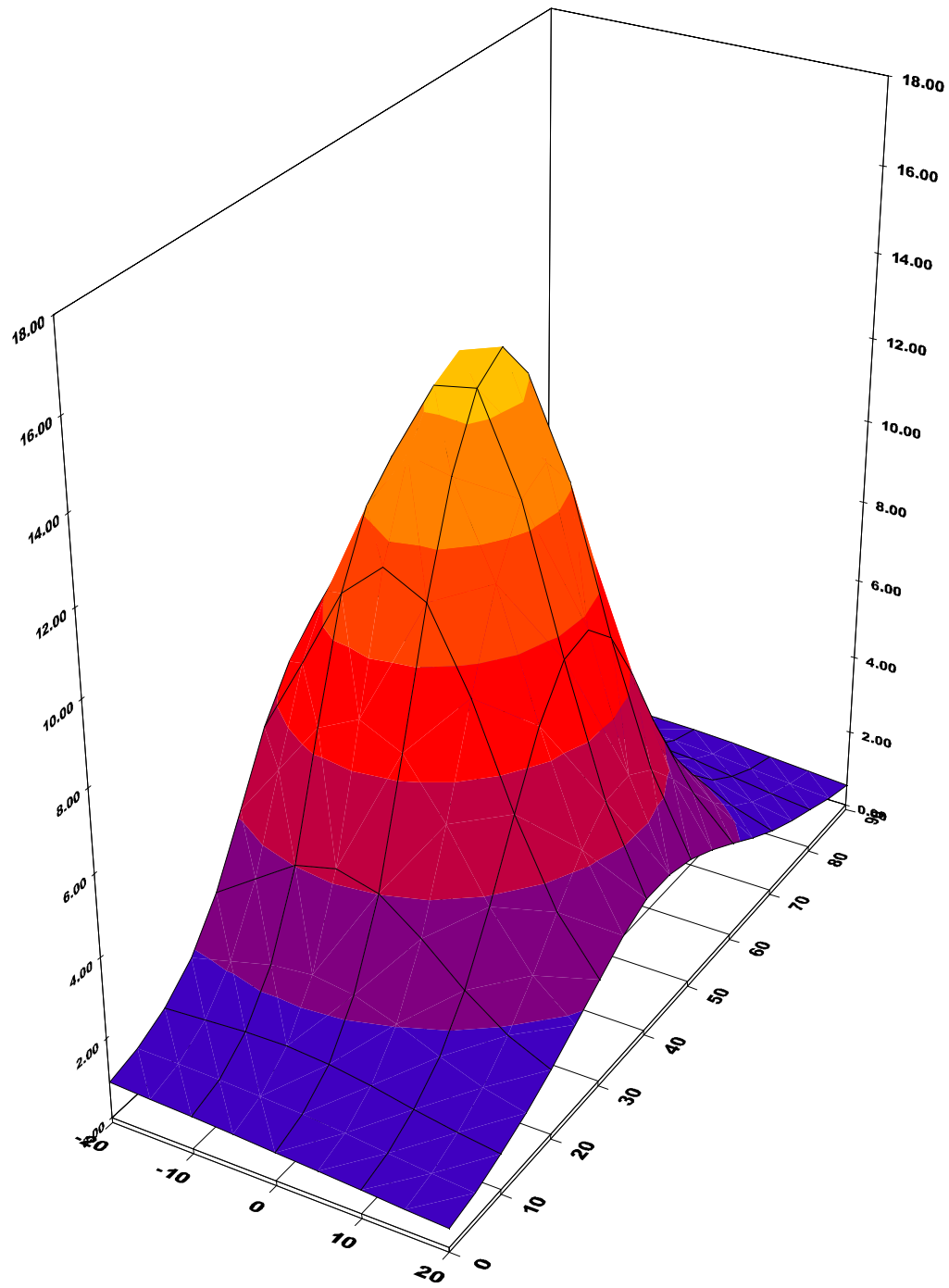
Location of Maximum Field :

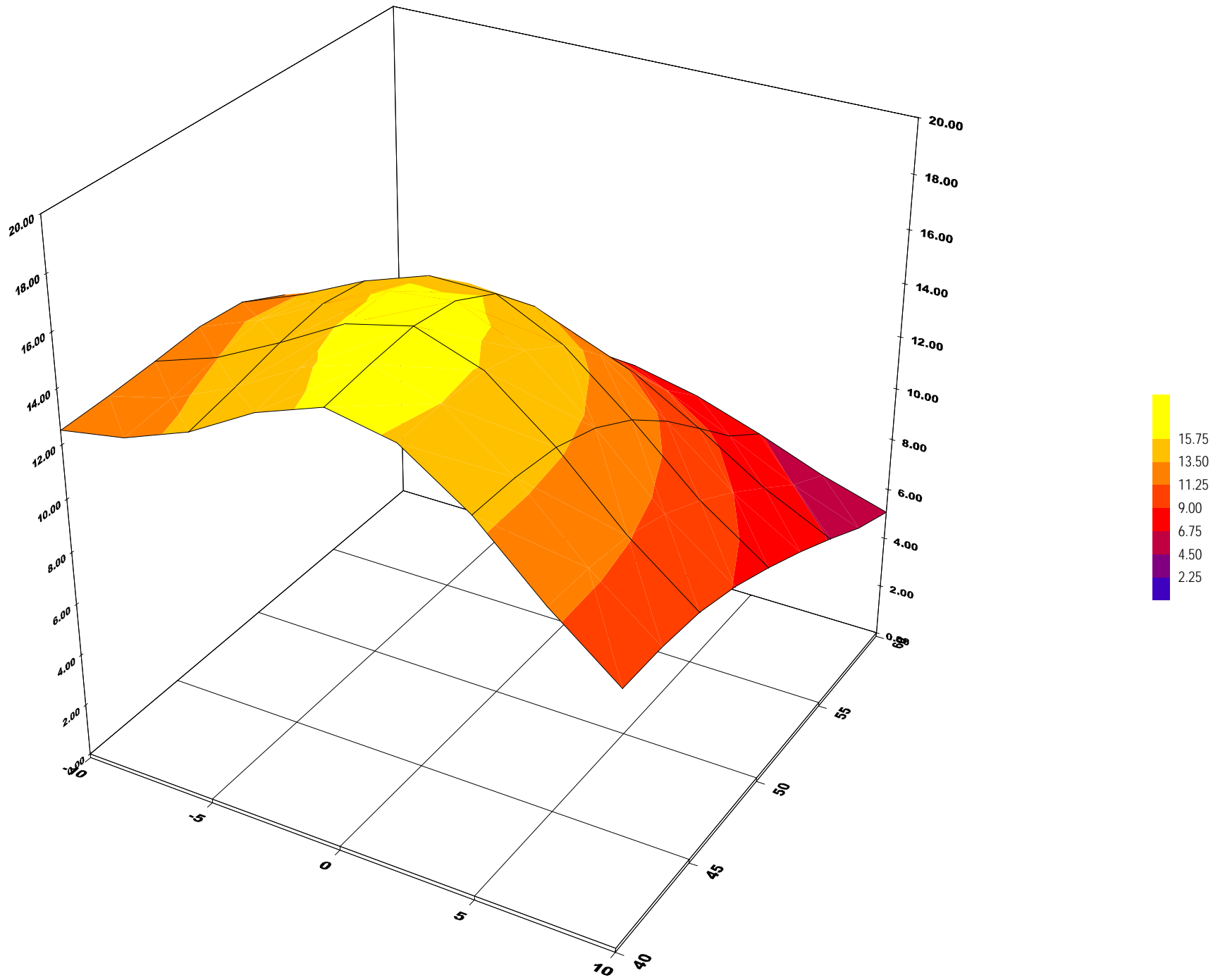
X = 0 Y = 45

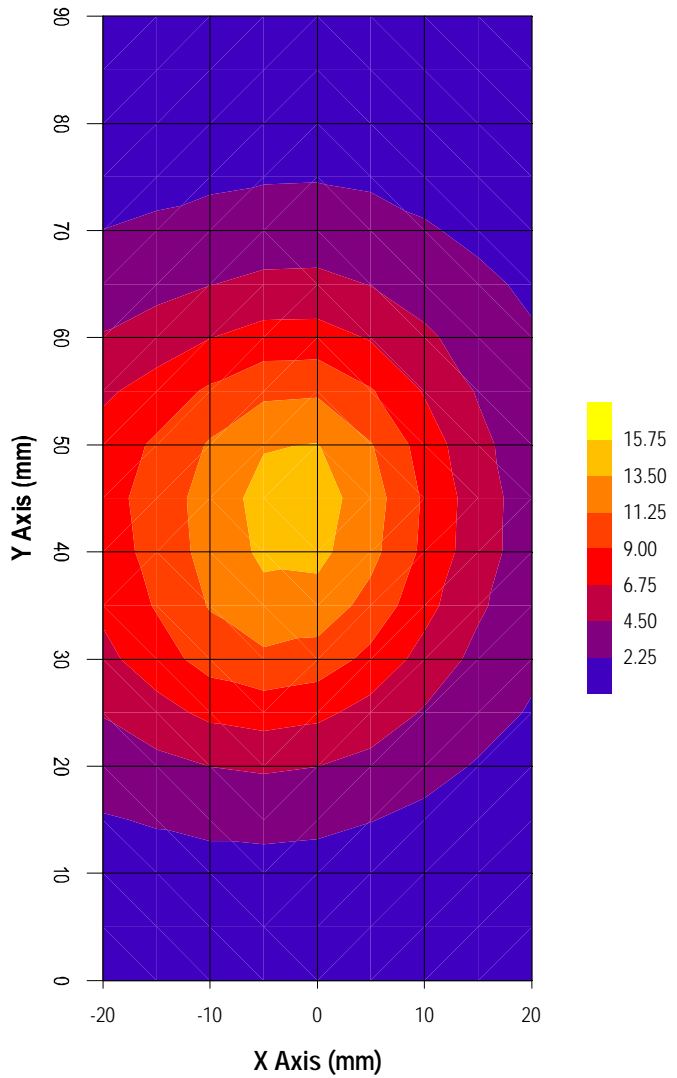
Measured Values (mV) :

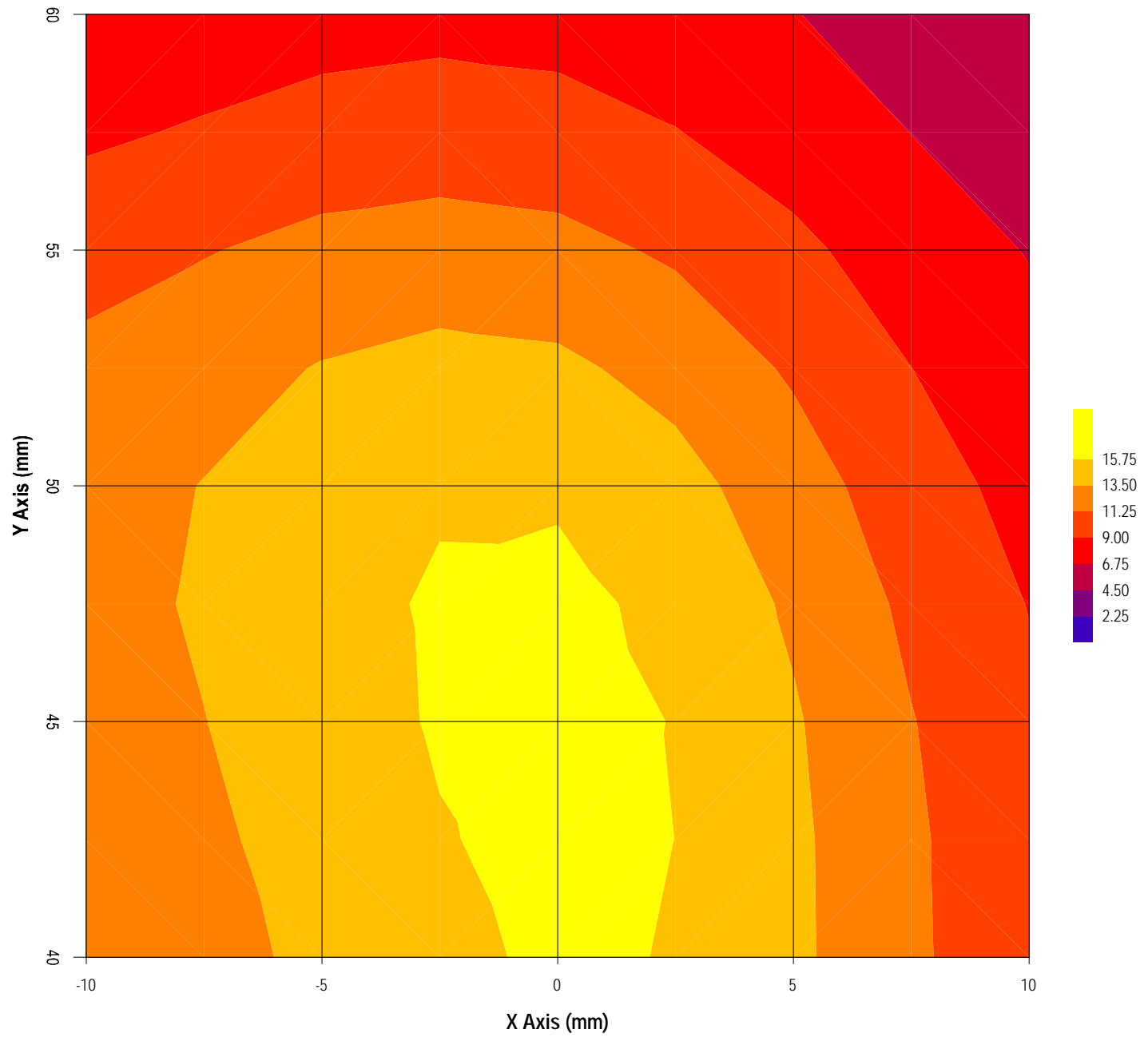
18.439 16.565 13.393 10.944 9.132 7.385
6.364 5.333 4.454 3.818 3.236

Peak Voltage (mV) : 28.402 1 Cm Voltage (mV) : 4.593 SAR (W/Kg) : 0.903









Test Information

Date : 17/10/2001

Time : 1:01:14 PM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 836.5
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Front Face
Measured Power (W) : 0.490
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.490

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

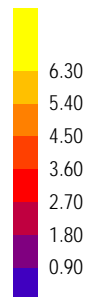
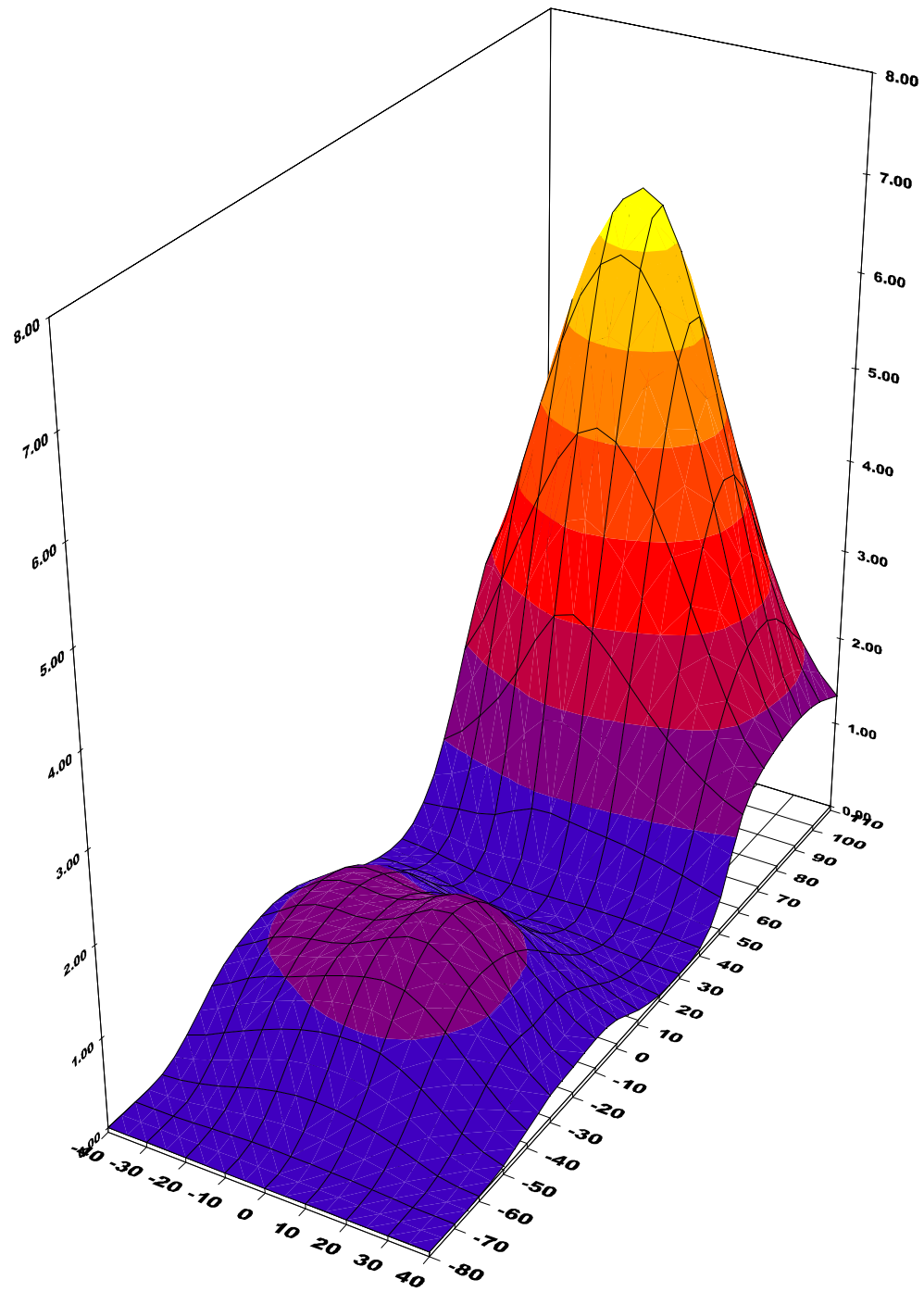
Location of Maximum Field :

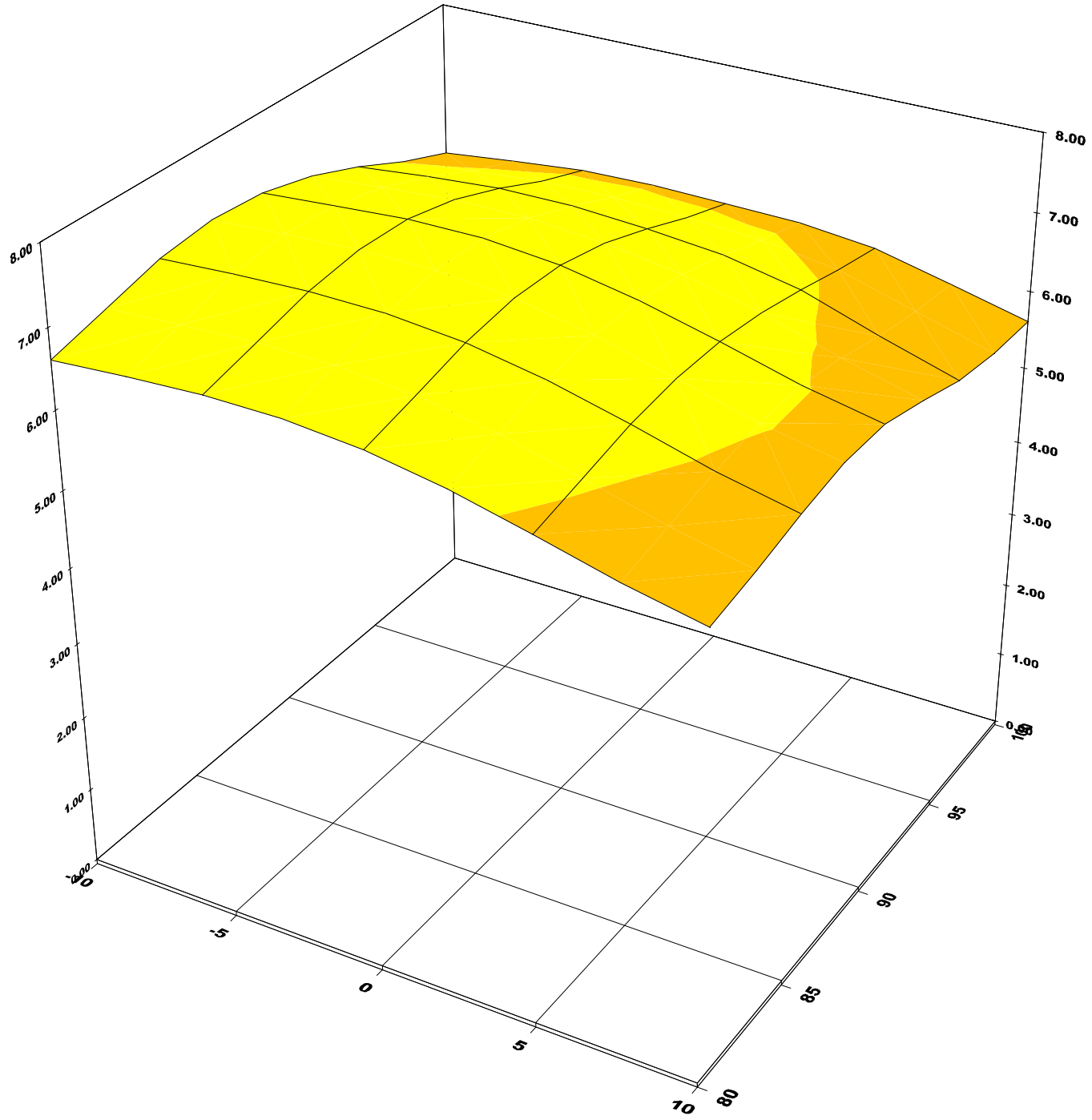
X = -5 Y = 90

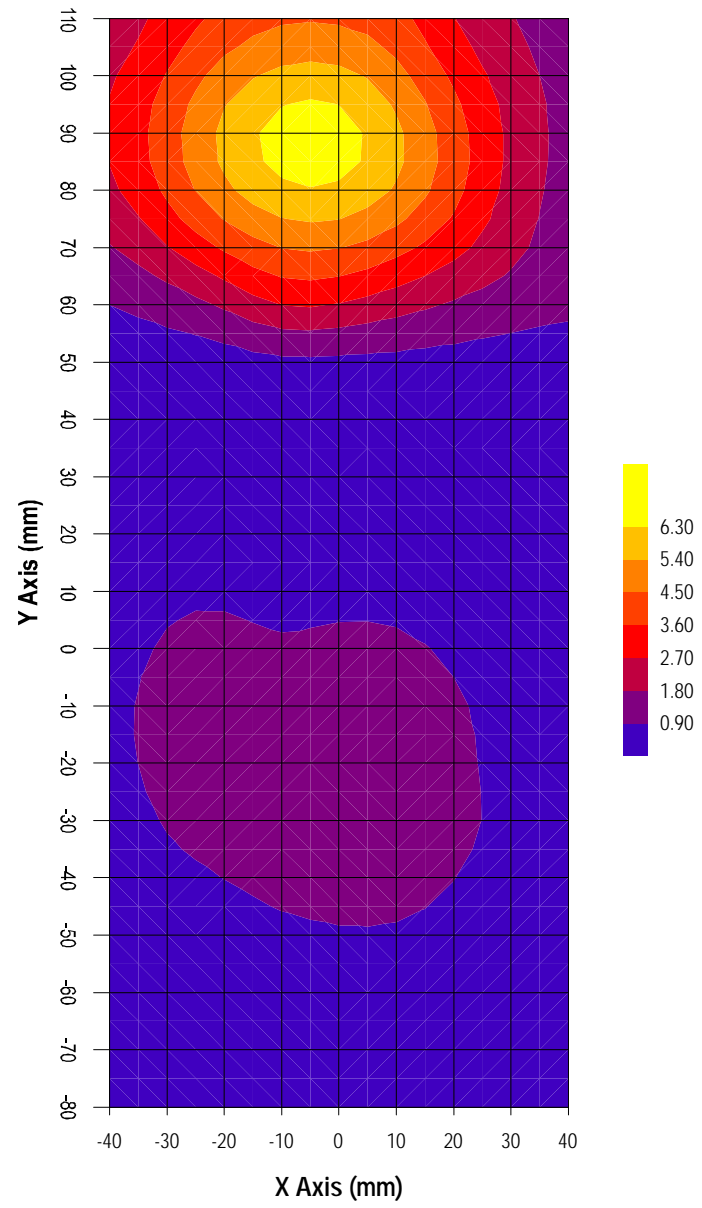
Measured Values (mV) :

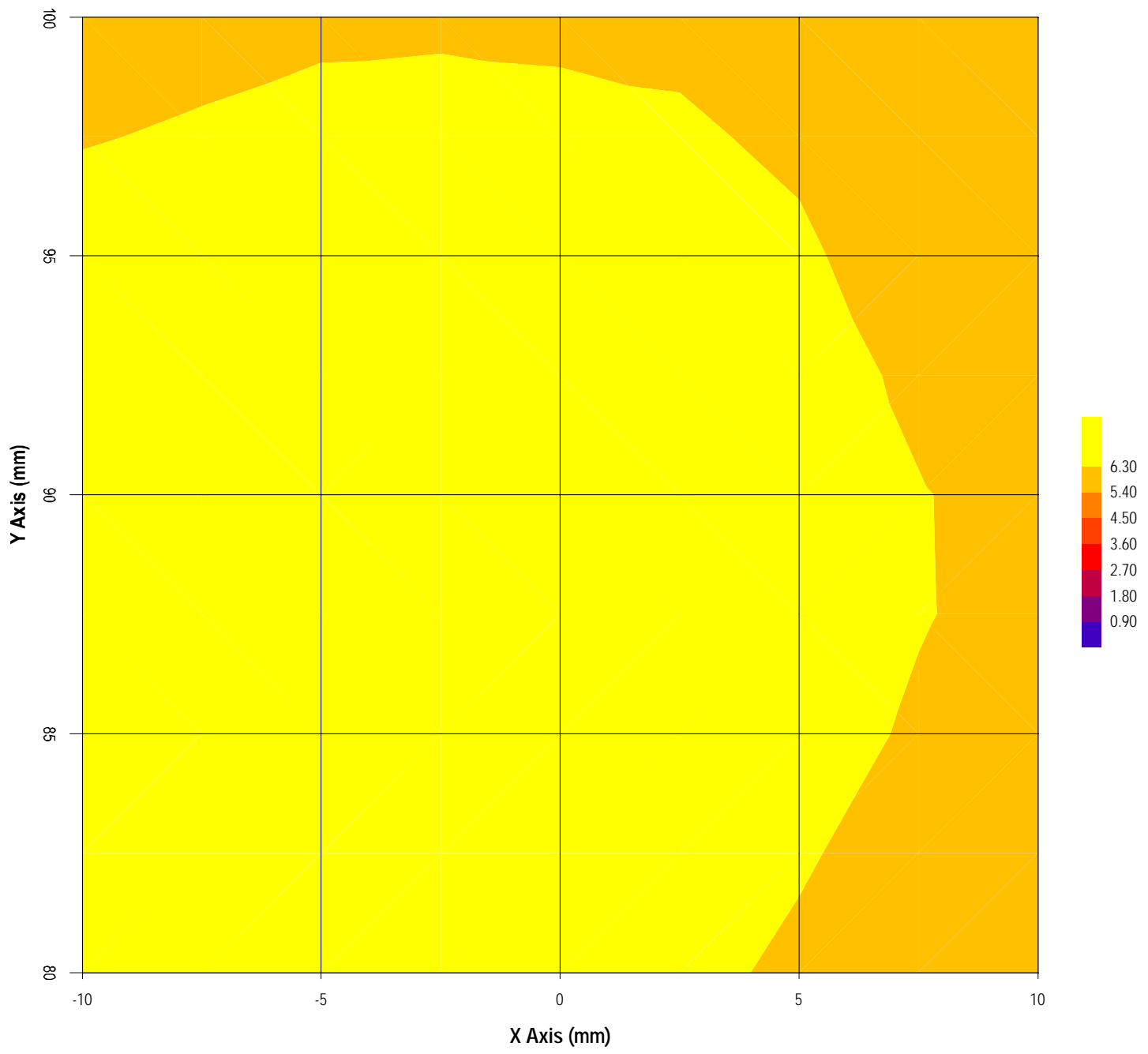
7.259 6.791 6.068 5.478 4.982 4.503
4.128 3.818 3.521 3.200 2.936

Peak Voltage (mV) : 9.062 1 Cm Voltage (mV) : 3.527 SAR (W/Kg) : 0.461









Test Information

Date : 17/10/2001

Time : 2:58:43 PM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 836.5
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Left Face
Measured Power (W) : 0.490
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.490

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

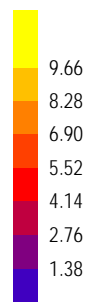
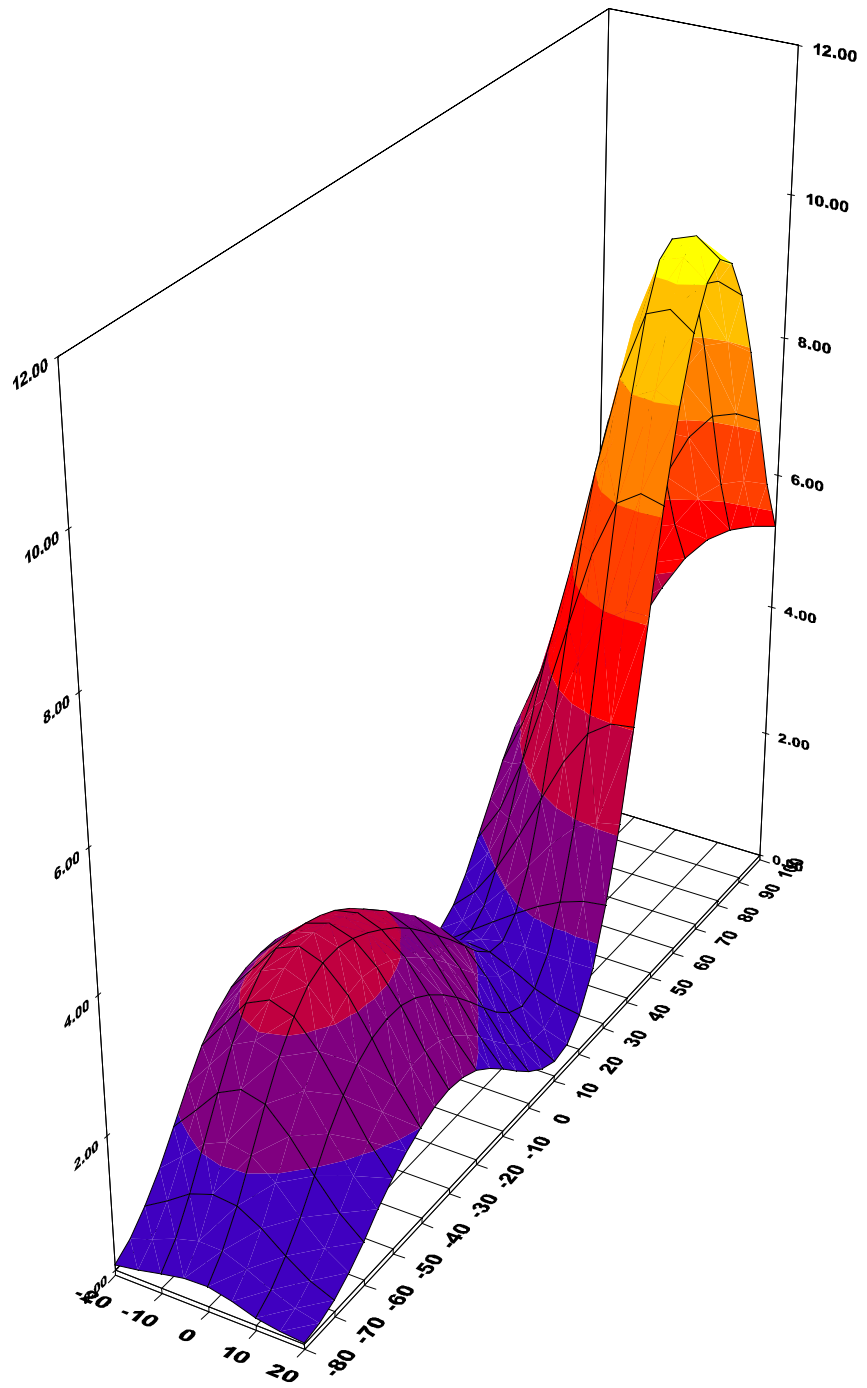
Location of Maximum Field :

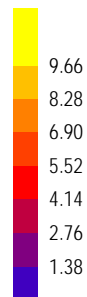
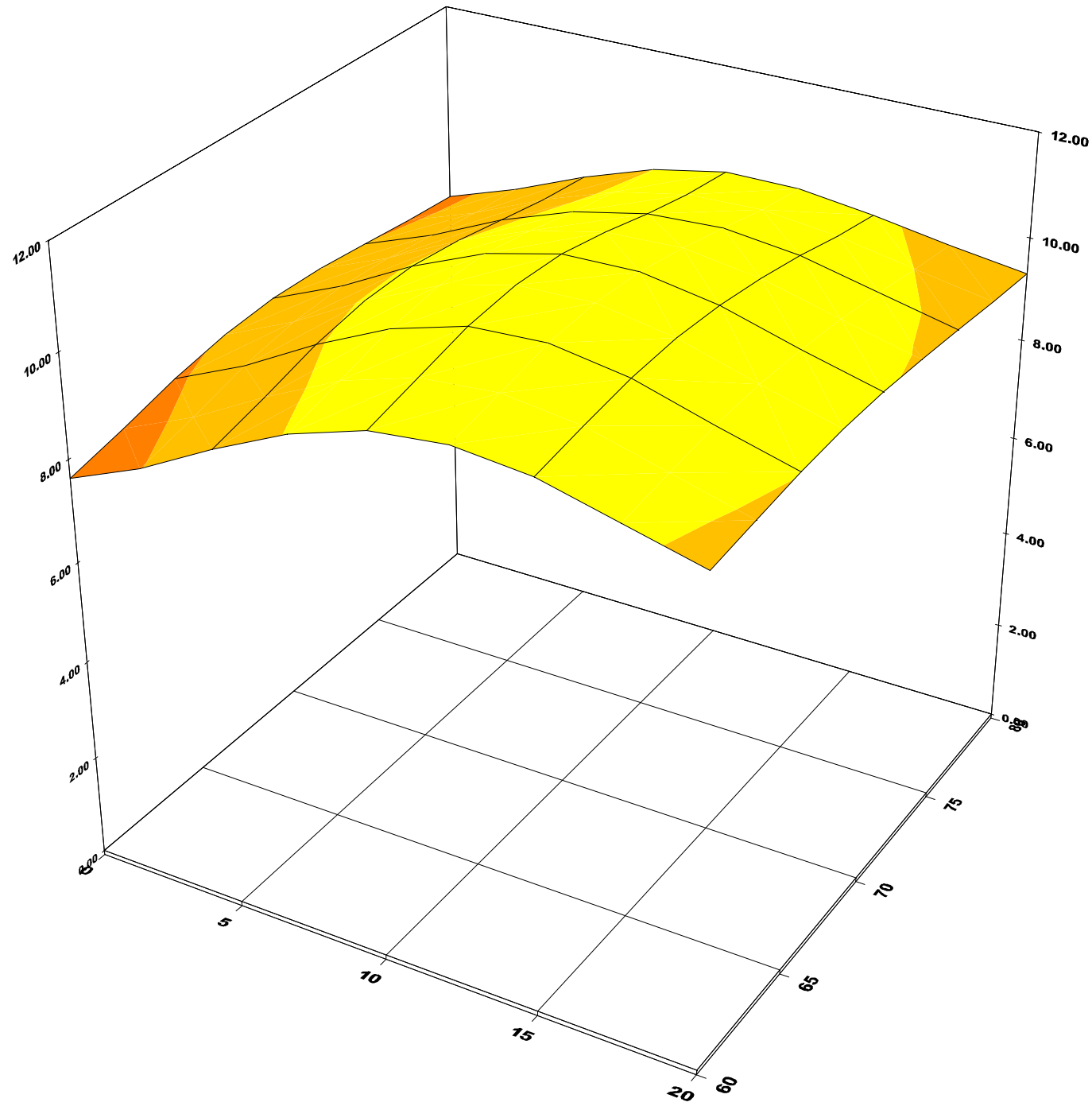
X = 10 Y = 70

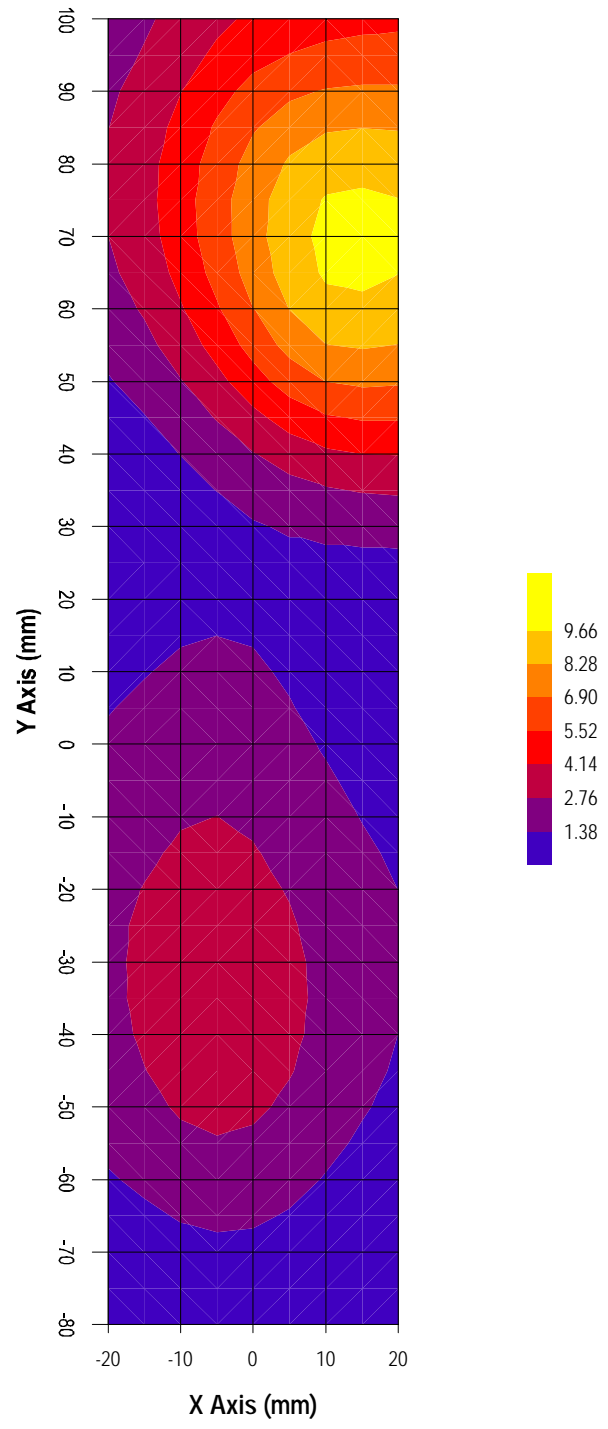
Measured Values (mV) :

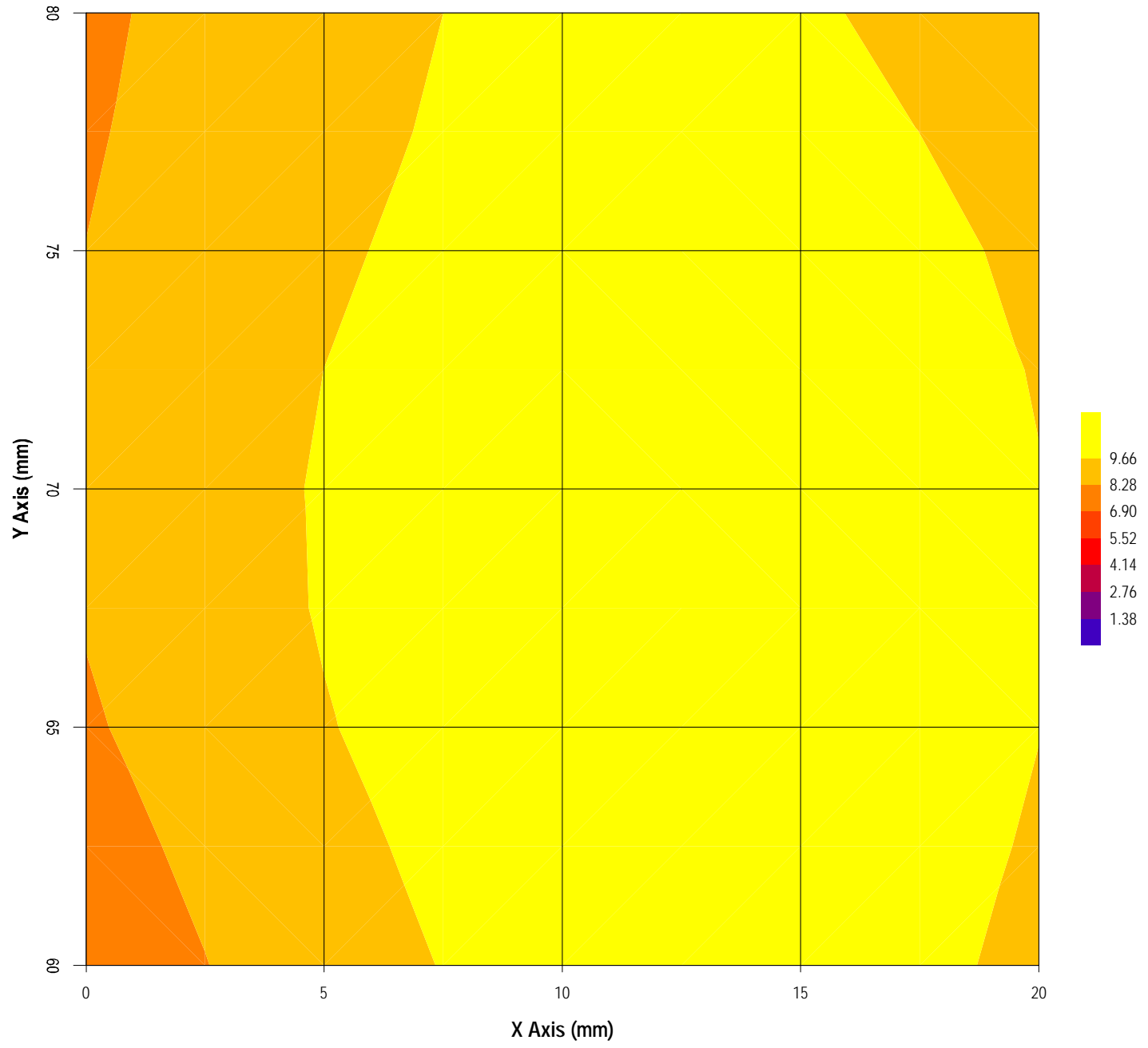
10.913 10.302 9.009 7.880 7.195 6.491
6.011 5.455 5.003 4.464 4.089

Peak Voltage (mV) : 13.788 1 Cm Voltage (mV) : 5.049 SAR (W/Kg) : 0.682









Test Information

Date : 17/10/2001

Time : 2:35:54 PM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 836.5
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Right Face
Measured Power (W) : 0.490
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.490

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

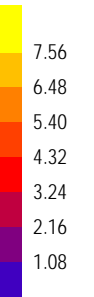
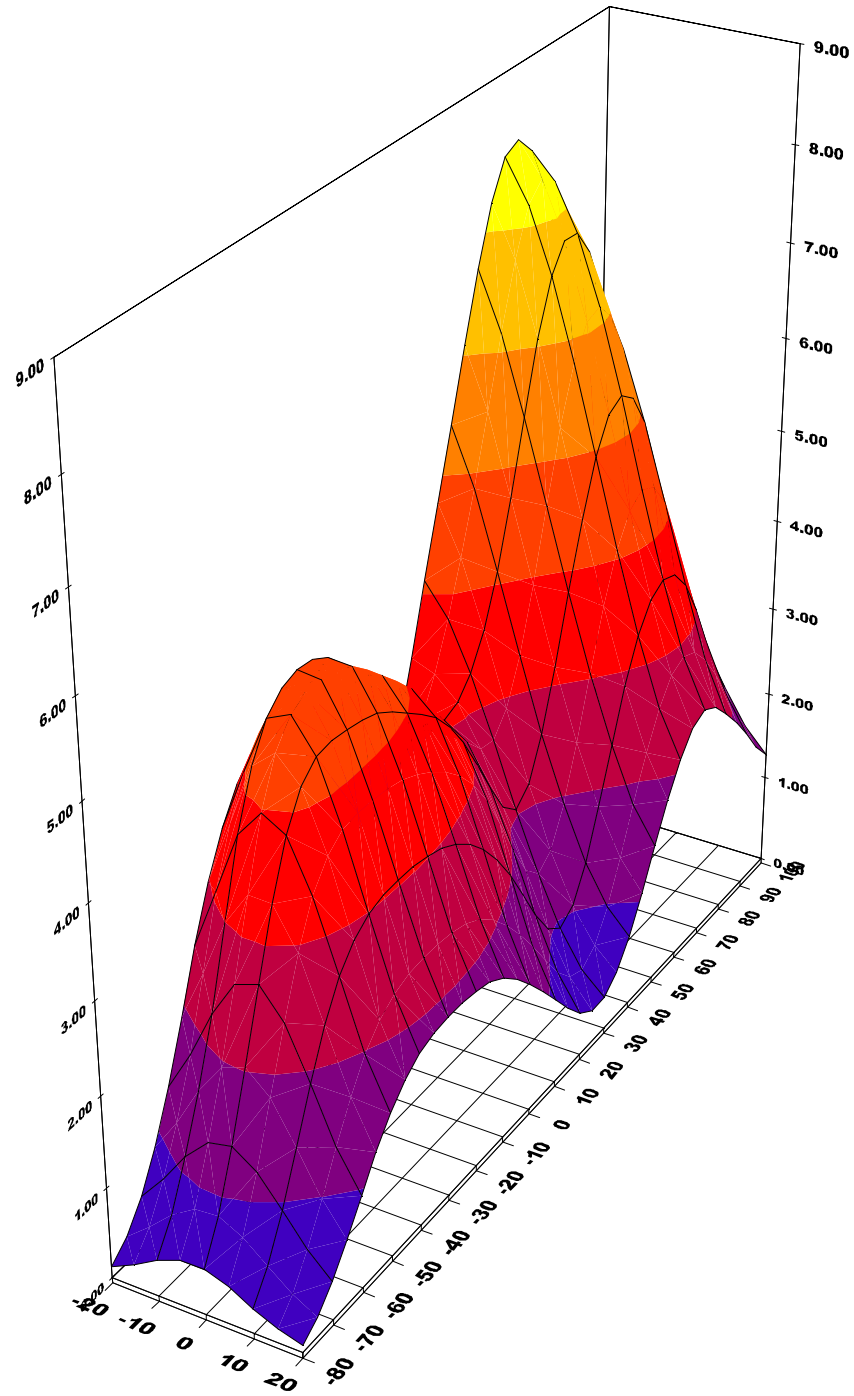
Location of Maximum Field :

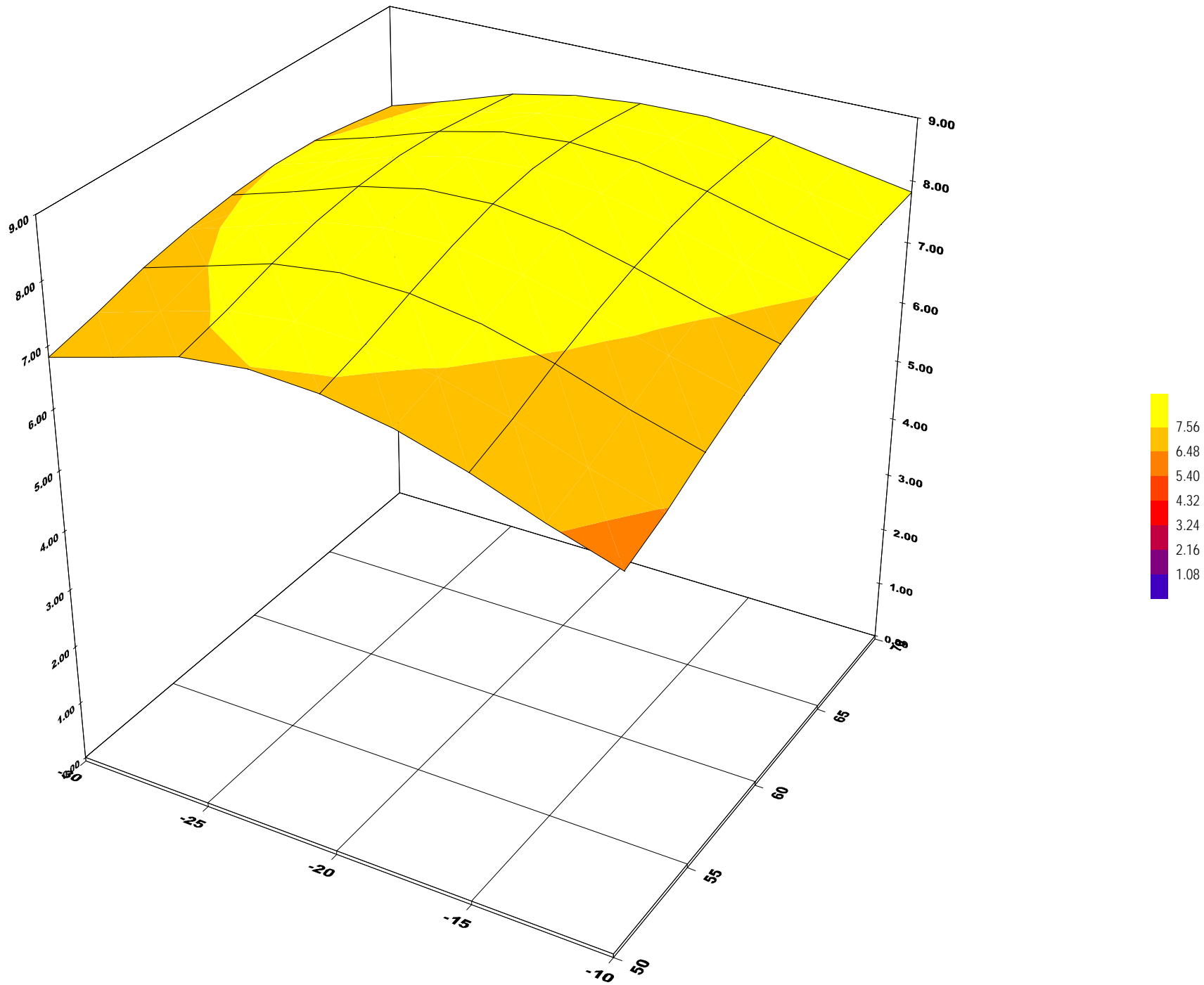
X = -20 Y = 65

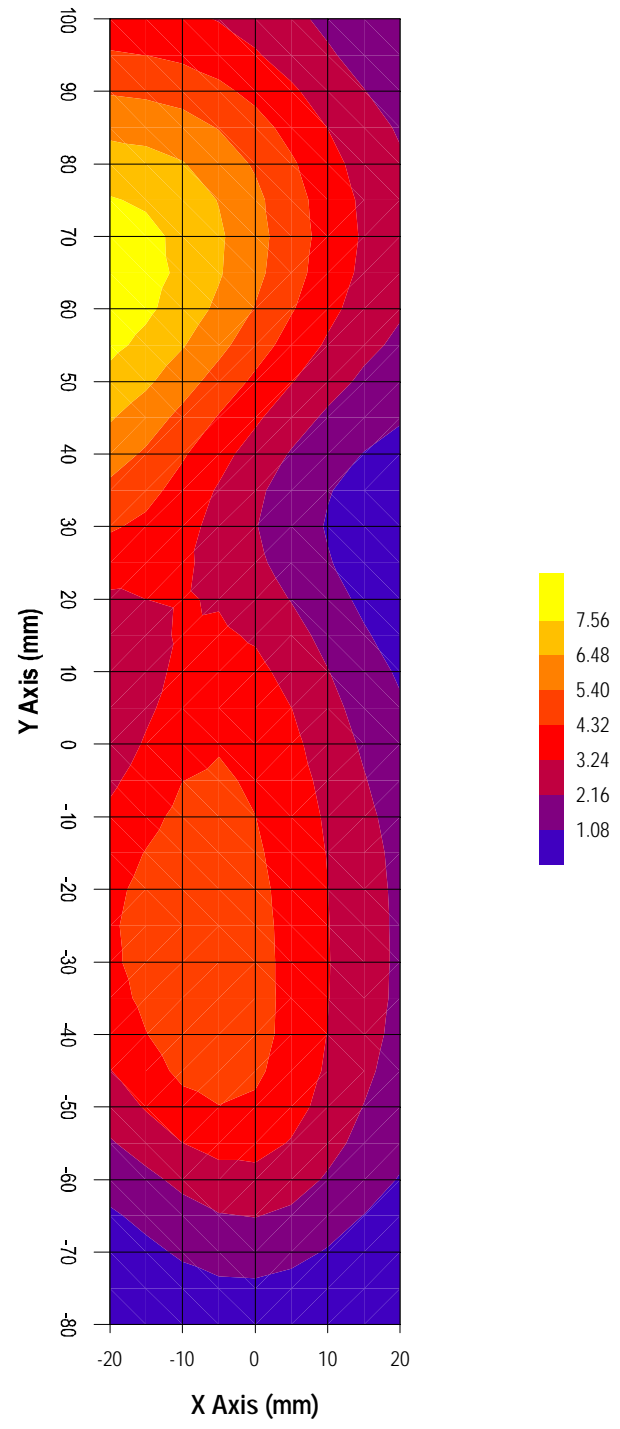
Measured Values (mV) :

8.620 8.082 7.193 6.470 5.992 5.435
5.042 4.661 4.246 3.861 3.571

Peak Voltage (mV) : 10.665 1 Cm Voltage (mV) : 4.269 SAR (W/Kg) : 0.551







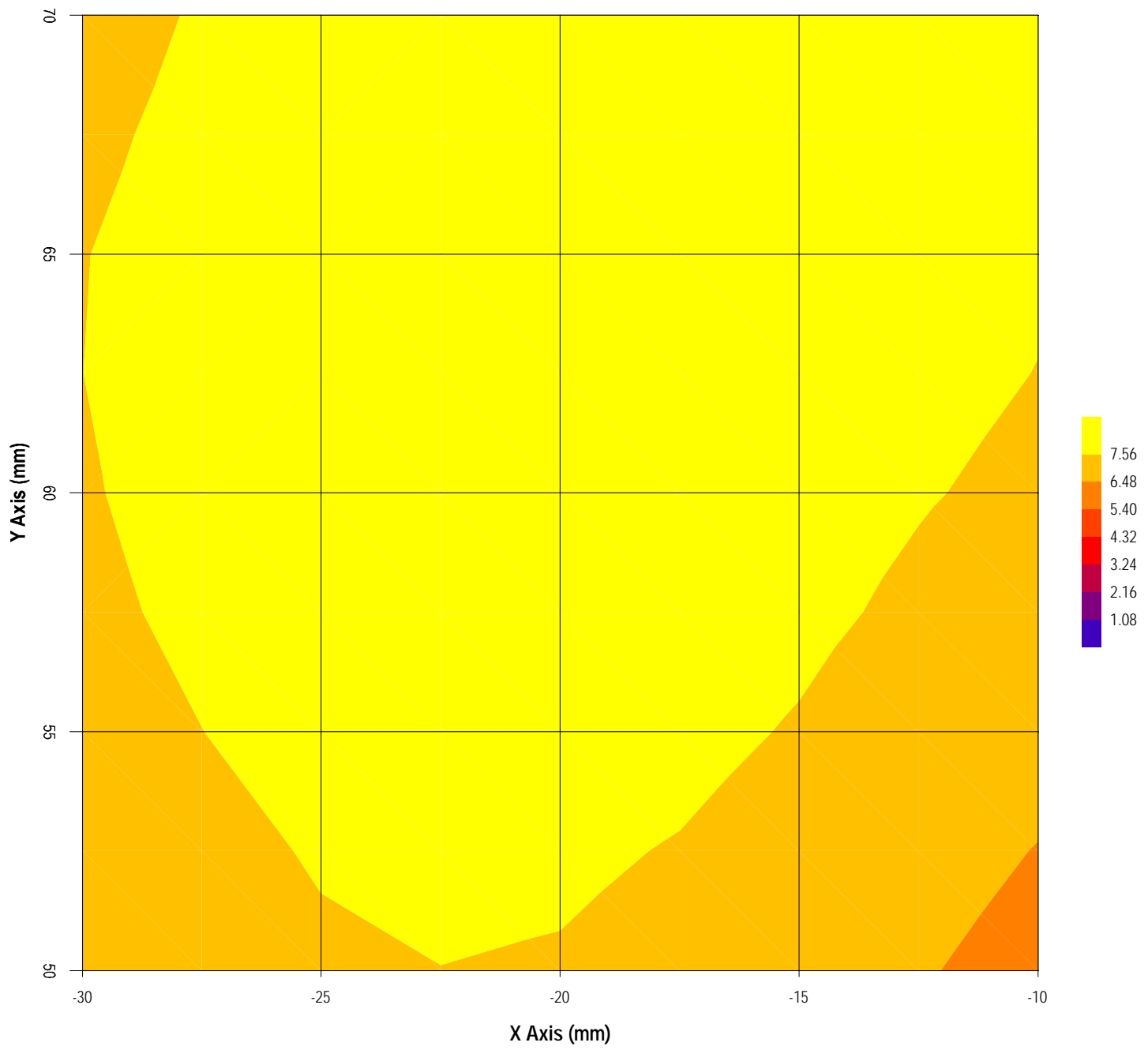


EXHIBIT 8. 824 MHz SAR MEASUREMENT

Test data for 824 MHz SAR measurements are presented in following order:

Back surface of EUT parallel to phantom waist:

- ▶ 15 mm away from phantom
- ▶ 25 mm away from phantom

Detailed SAR results with EUT relocated for maximum contact with phantom surface

EUT Configurations	EUT Separation Distance to Phantom (mm)	Antenna Position	SAR (W/kg)
			Device Test Frequency & Output 824 MHz, 489.8 mW (ERP)
Back surface of EUT parallel to phantom waist	15	Internal	1.184
	25	Internal	0.530

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Test Information

Date : 18/10/2001

Time : 9:58:42 AM

<u>Product</u>	: Point Of Sale Device	<u>Test</u>	: SAR
<u>Manufacturer</u>	: Lipman USA, Inc	<u>Frequency (MHz)</u>	: 824
<u>Model Number</u>	: NURIT 8000 CDPD	<u>Nominal Output Power (W)</u>	: 0.600
<u>Serial Number</u>	: Test Sample	<u>Antenna Type</u>	: Patch
<u>FCC ID Number</u>	: O2SNURIT8000CI	<u>Signal</u>	: CW

<u>Phantom</u>	: Waist	<u>Dielectric Constant</u>	: 54.9
<u>Simulated Tissue</u>	: Muscle	<u>Conductivity</u>	: 1.260

<u>Probe</u>	: UT-ETR-0200-1	<u>Antenna Position</u>	: Back Face
<u>Probe Offset (mm)</u>	: 2.250	<u>Measured Power (W)</u>	: 0.530
<u>Sensor Factor (mV)</u>	: 10.8	(conducted)	
<u>Conversion Factor</u>	: 0.880	<u>Cable Insertion Loss (dB)</u>	: 0
<u>Calibrated Date</u>	: 14/06/2001	<u>Compensated Power (W)</u>	: 0.530

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

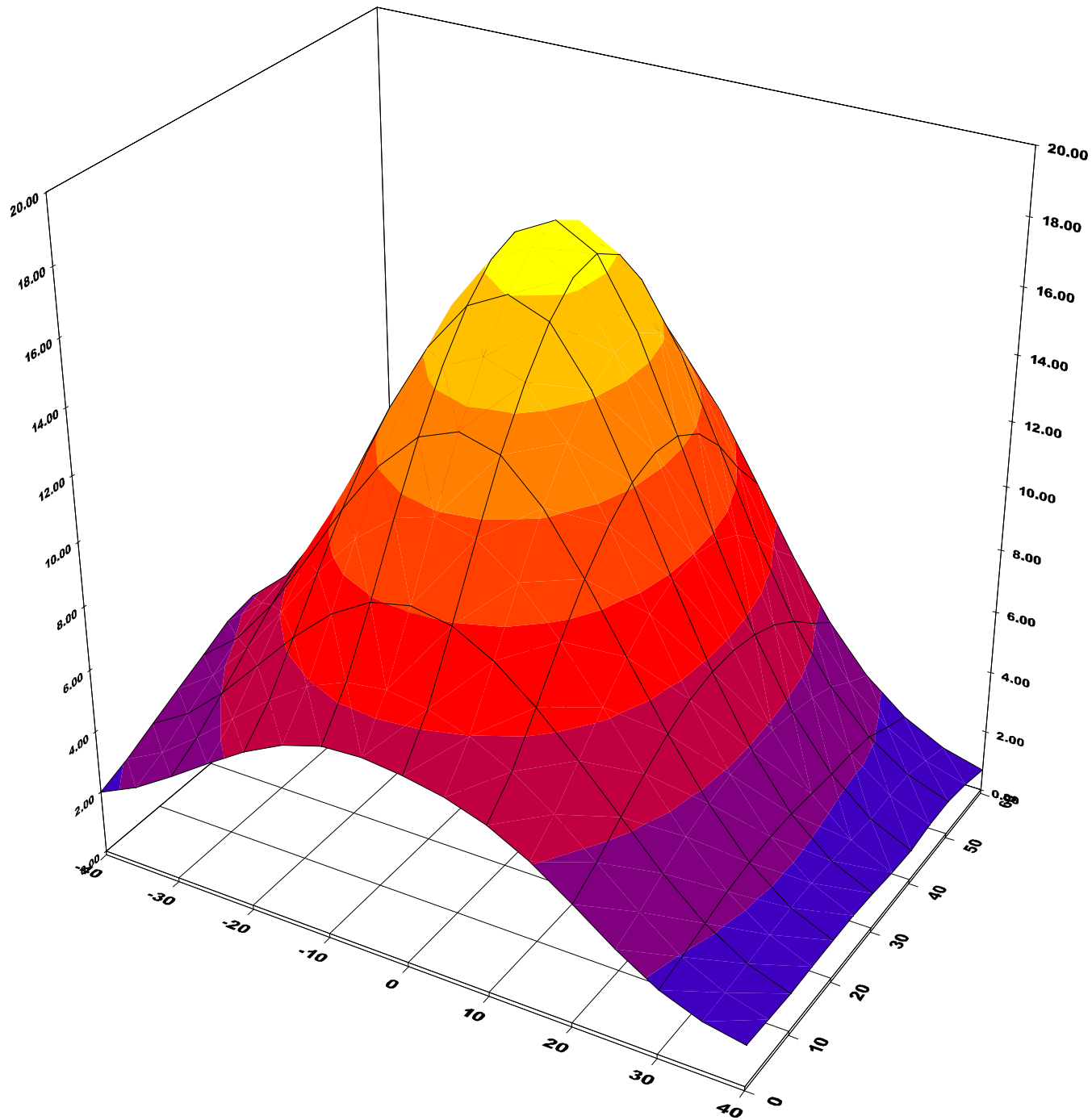
Location of Maximum Field :

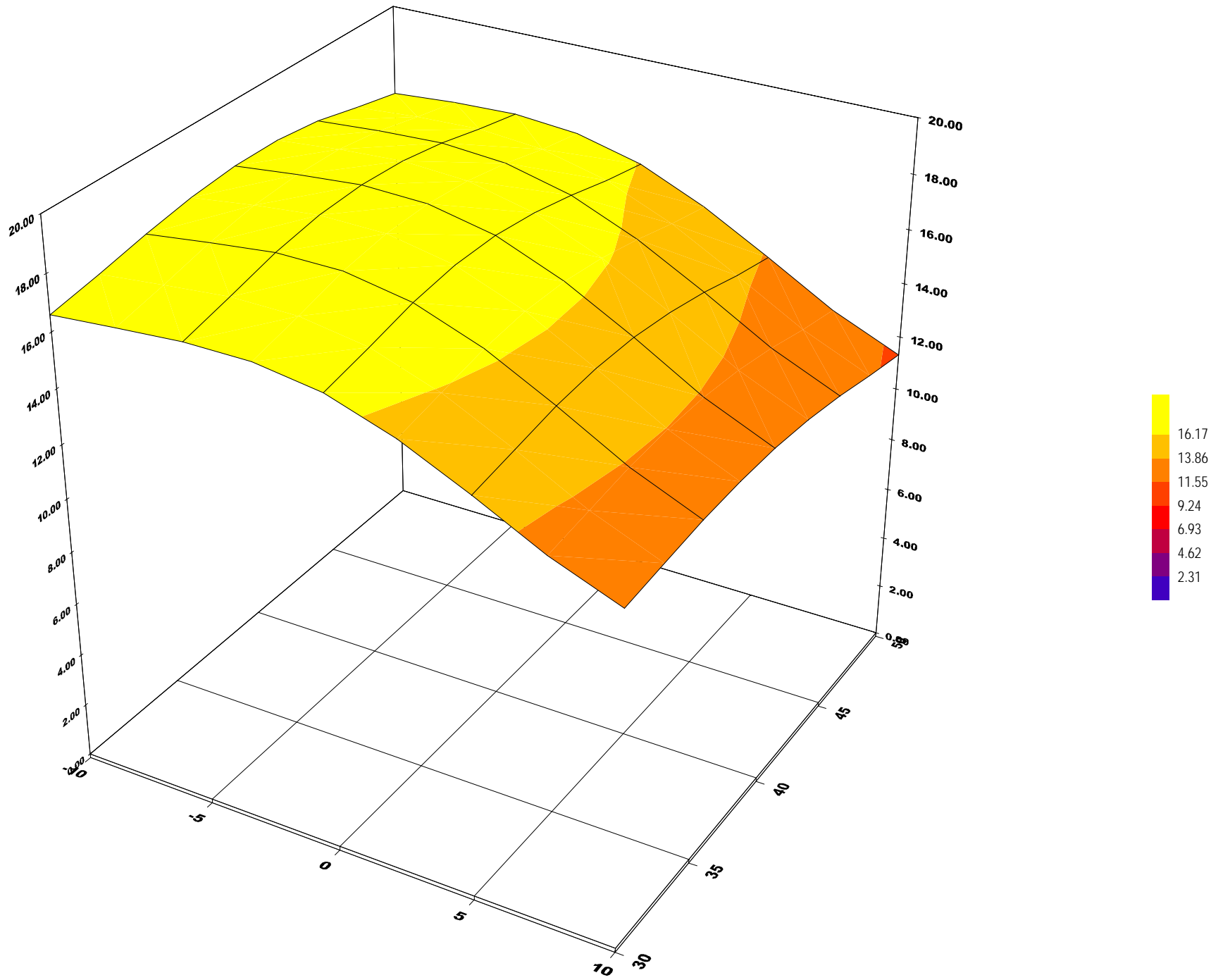
X = -5 Y = 40

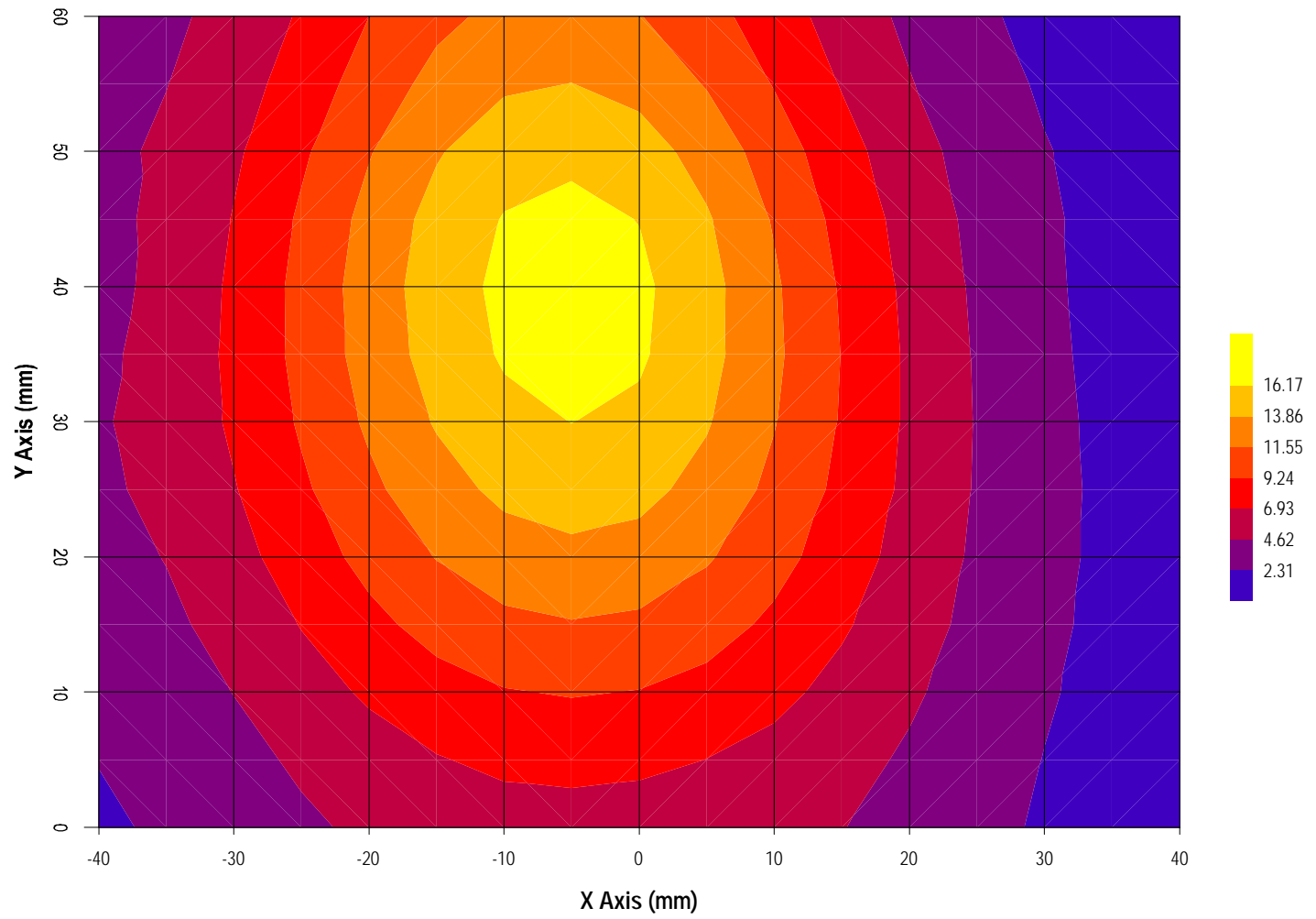
Measured Values (mV) :

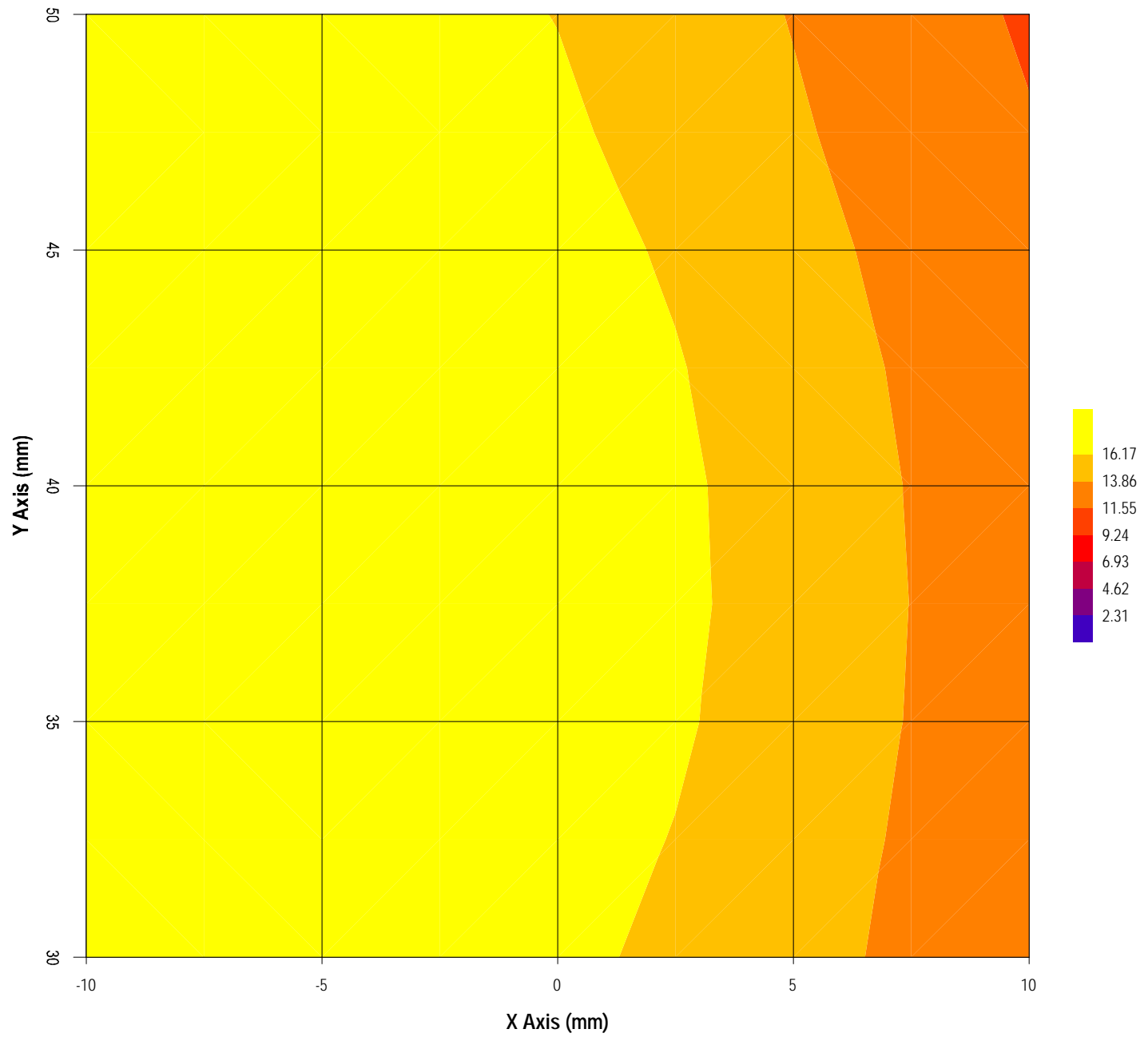
18.464	17.308	15.203	13.738	12.644	11.582
10.678	9.865	9.042	8.336	7.680	

<u>Peak Voltage (mV)</u>	: 22.757	<u>1 Cm Voltage (mV)</u>	: 9.230	<u>SAR (W/Kg)</u>	: 1.184
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Test Information

Date : 18/10/2001
Time : 10:56:06 AM

<u>Product</u>	: Point Of Sale Device	<u>Test</u>	: SAR
<u>Manufacturer</u>	: Lipman USA, Inc	<u>Frequency (MHz)</u>	: 824
<u>Model Number</u>	: NURIT 8000 CDPD	<u>Nominal Output Power (W)</u>	: 0.600
<u>Serial Number</u>	: Test Sample	<u>Antenna Type</u>	: Patch
<u>FCC ID Number</u>	: O2SNURIT8000CI	<u>Signal</u>	: CW

<u>Phantom</u>	: Waist	<u>Dielectric Constant</u>	: 54.9
<u>Simulated Tissue</u>	: Muscle	<u>Conductivity</u>	: 1.260

<u>Probe</u>	: UT-ETR-0200-1	<u>Antenna Position</u>	: Back Face
<u>Probe Offset (mm)</u>	: 2.250	<u>Measured Power (W)</u>	: 0.530
<u>Sensor Factor (mV)</u>	: 10.8	(conducted)	
<u>Conversion Factor</u>	: 0.880	<u>Cable Insertion Loss (dB)</u>	: 0
<u>Calibrated Date</u>	: 14/06/2001	<u>Compensated Power (W)</u>	: 0.530

Amplifier Setting :
Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

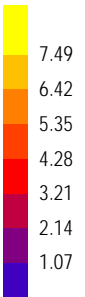
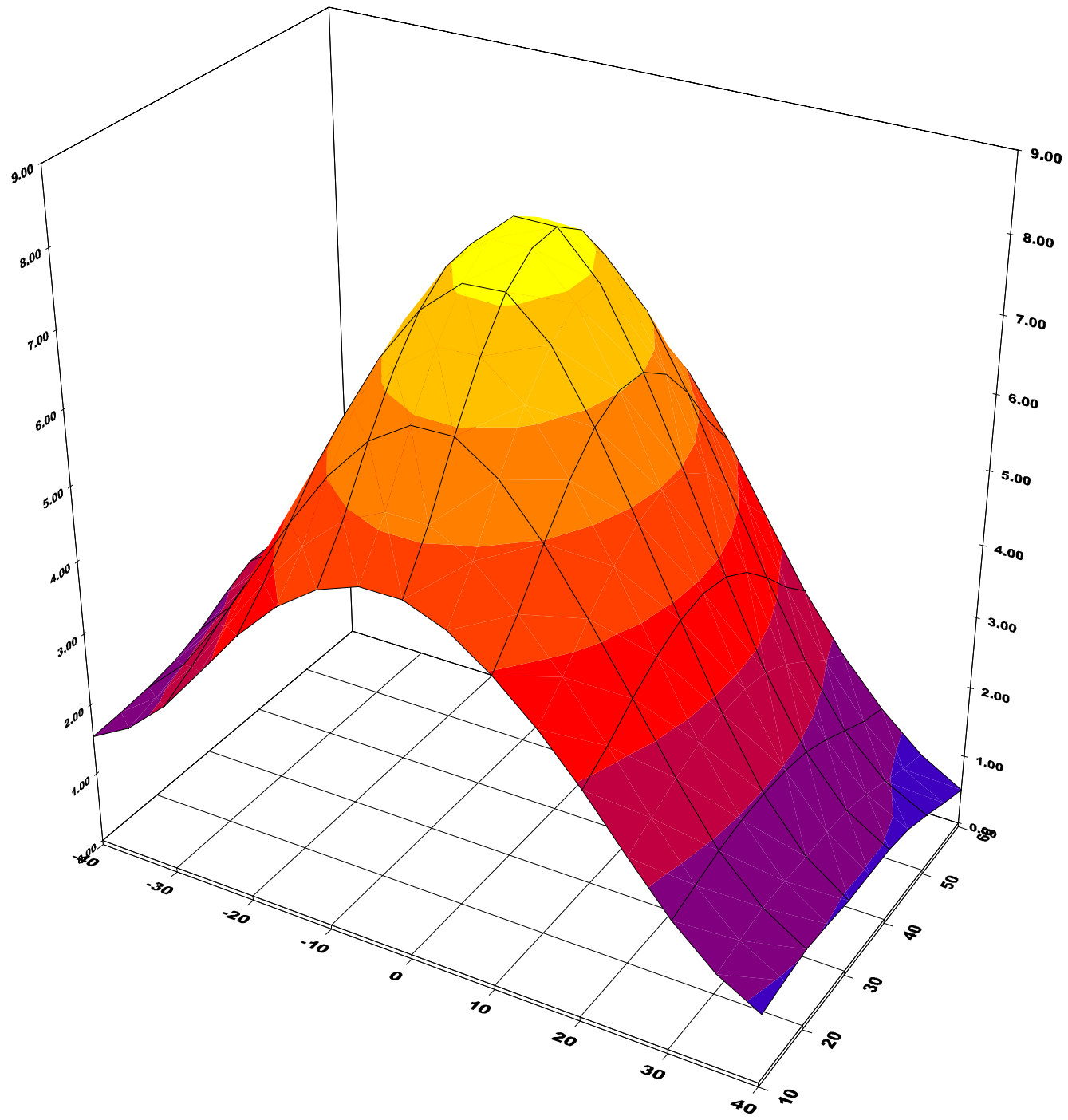
Location of Maximum Field :

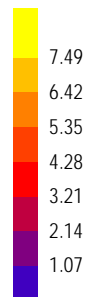
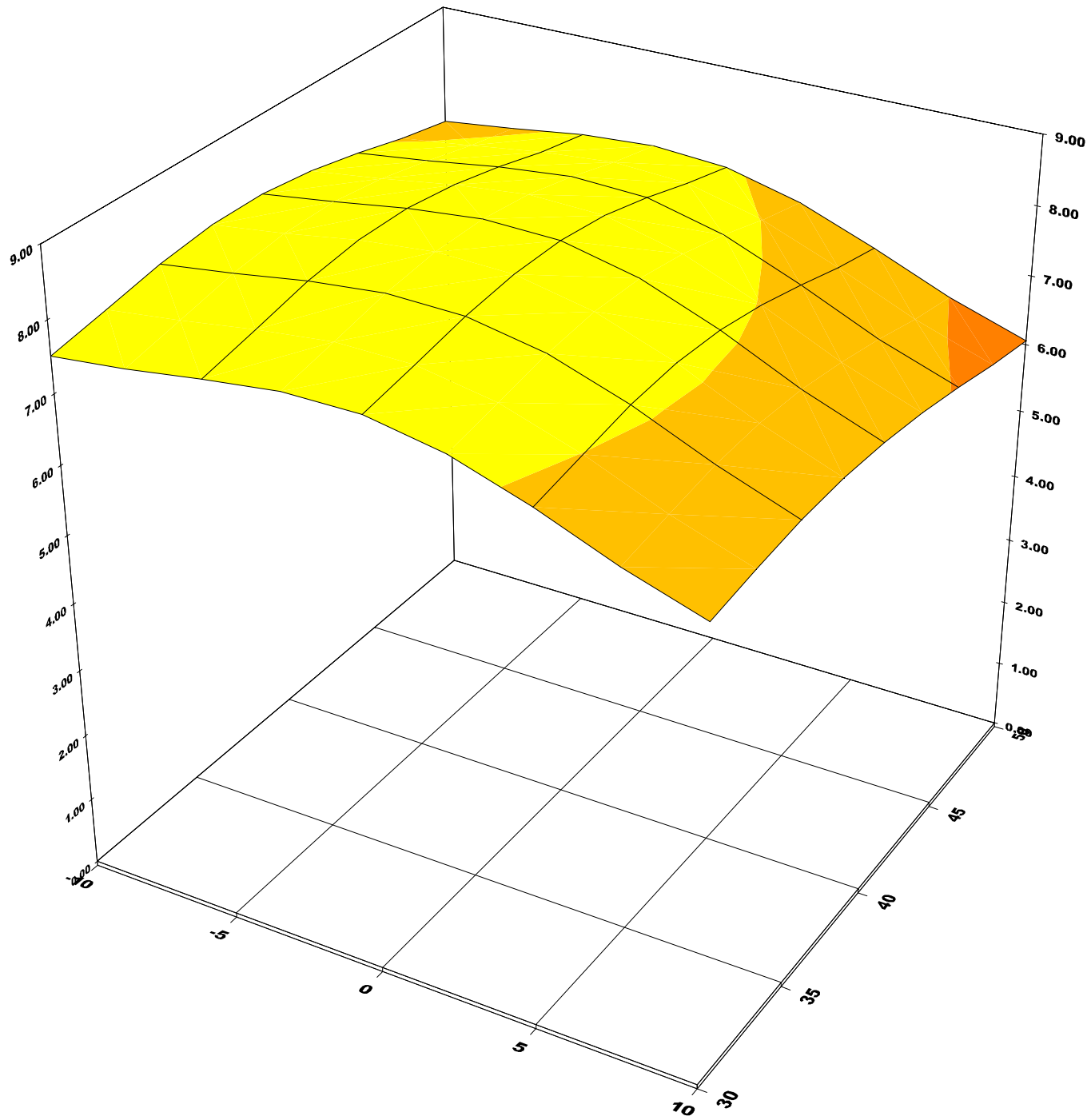
X = 0 Y = 40

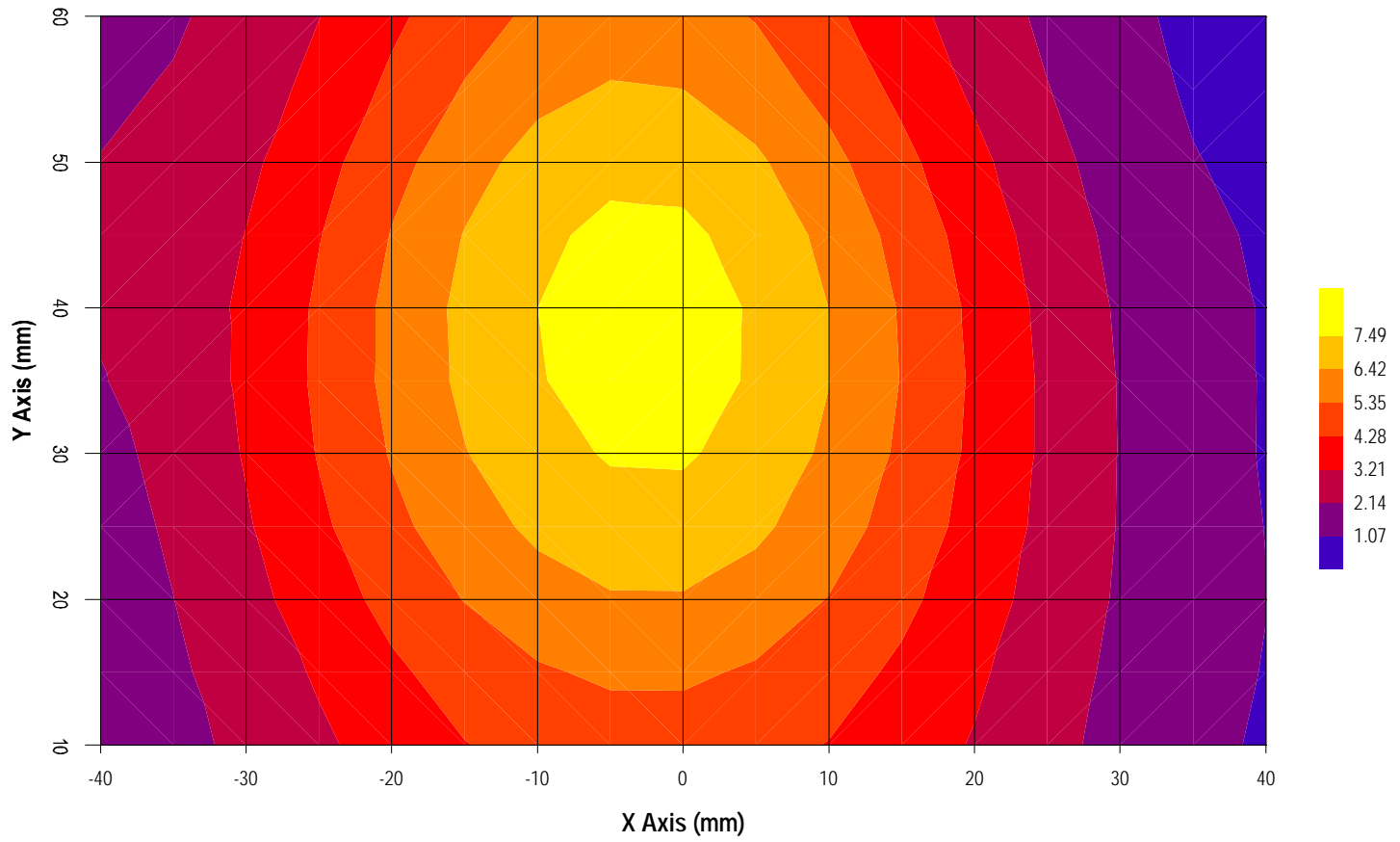
Measured Values (mV) :

8.436	7.977	6.925	6.079	5.584	5.066
4.649	4.242	3.894	3.478	3.184	

Peak Voltage (mV) : 10.570 1 Cm Voltage (mV) : 3.994 SAR (W/Kg) : 0.530







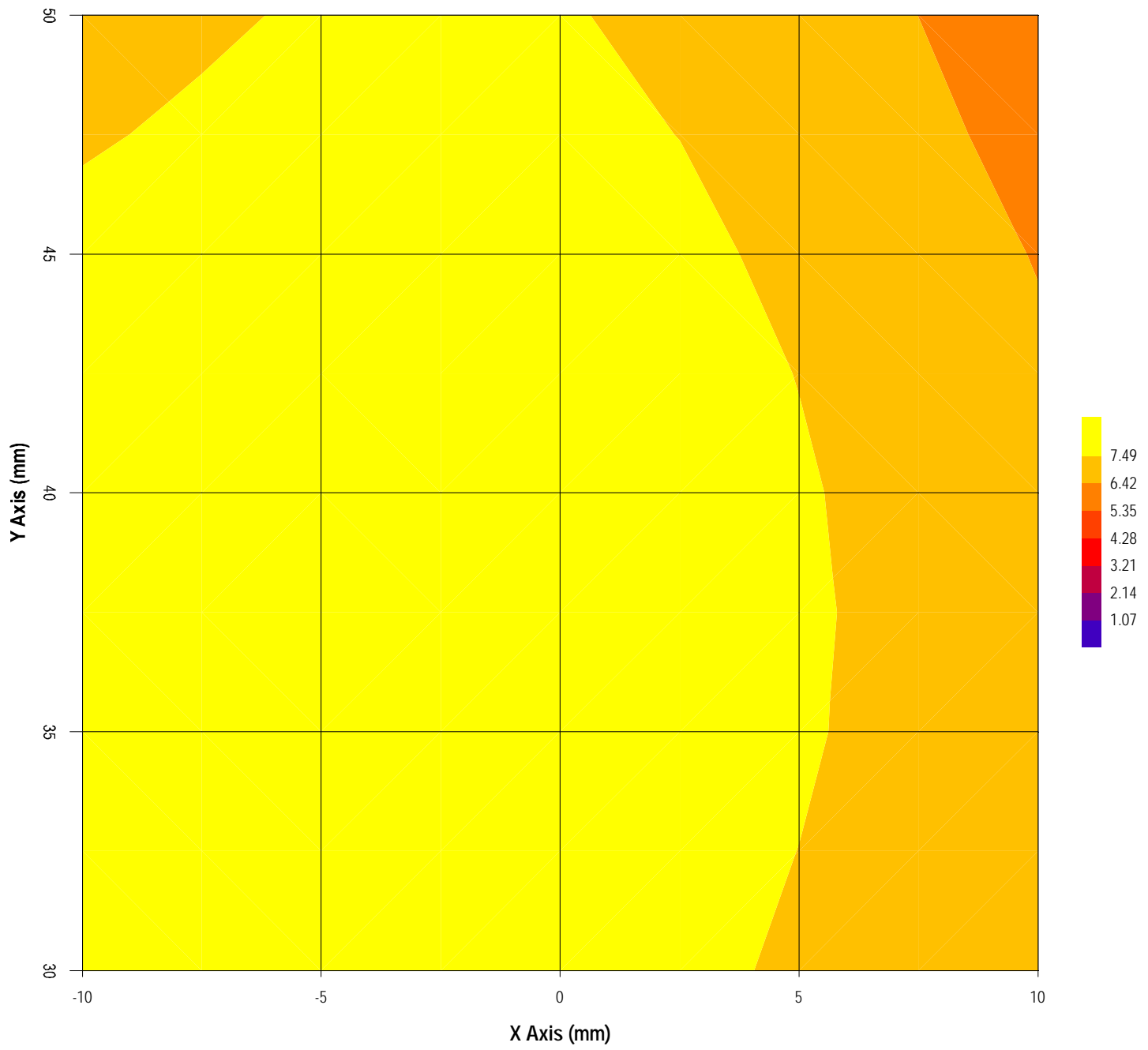


EXHIBIT 9. 836.5 MHz SAR MEASUREMENT

Test data for 836.5 MHz SAR measurements are presented in following order:

Back surface of EUT parallel to phantom waist:

- ▶ 15 mm away from phantom
- ▶ 25 mm away from phantom

Detailed SAR results with EUT relocated for maximum contact with phantom surface

EUT Configurations	EUT Separation Distance to Phantom (mm)	Antenna Position	SAR (W/kg)
			Device Test Frequency & Output 836.5 MHz, 457.1 mW (ERP)
Back surface of EUT parallel to phantom waist	15	Internal	1.584
	25	Internal	0.719

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- Recognized/Listed by FCC (USA)
- All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)

Test Information

Date : 17/10/2001

Time : 5:20:38 PM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 836.5
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Back Face
Measured Power (W) : 0.490
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.490

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

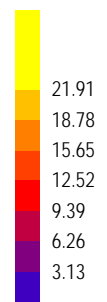
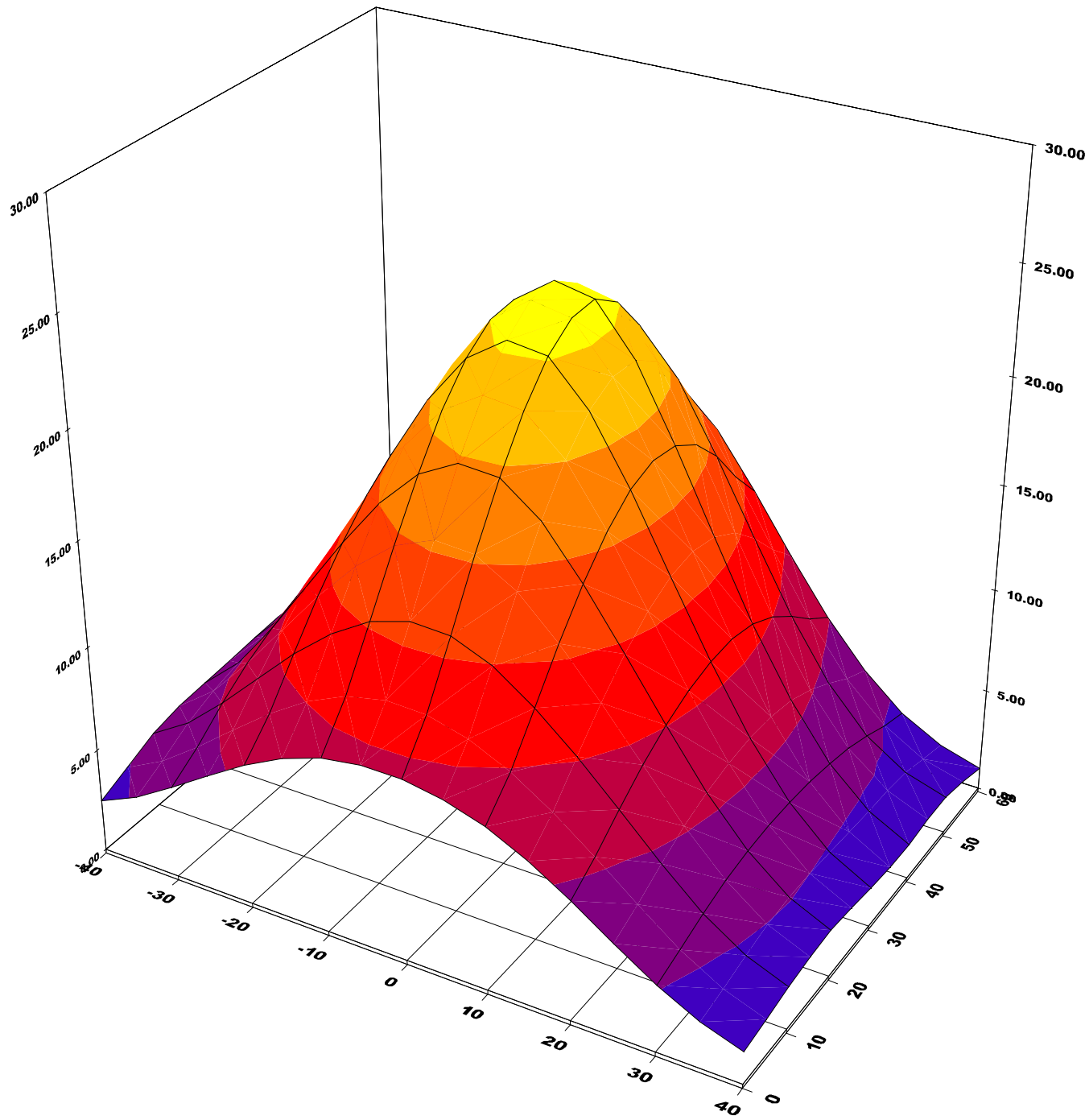
Location of Maximum Field :

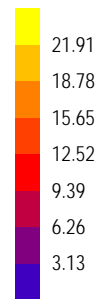
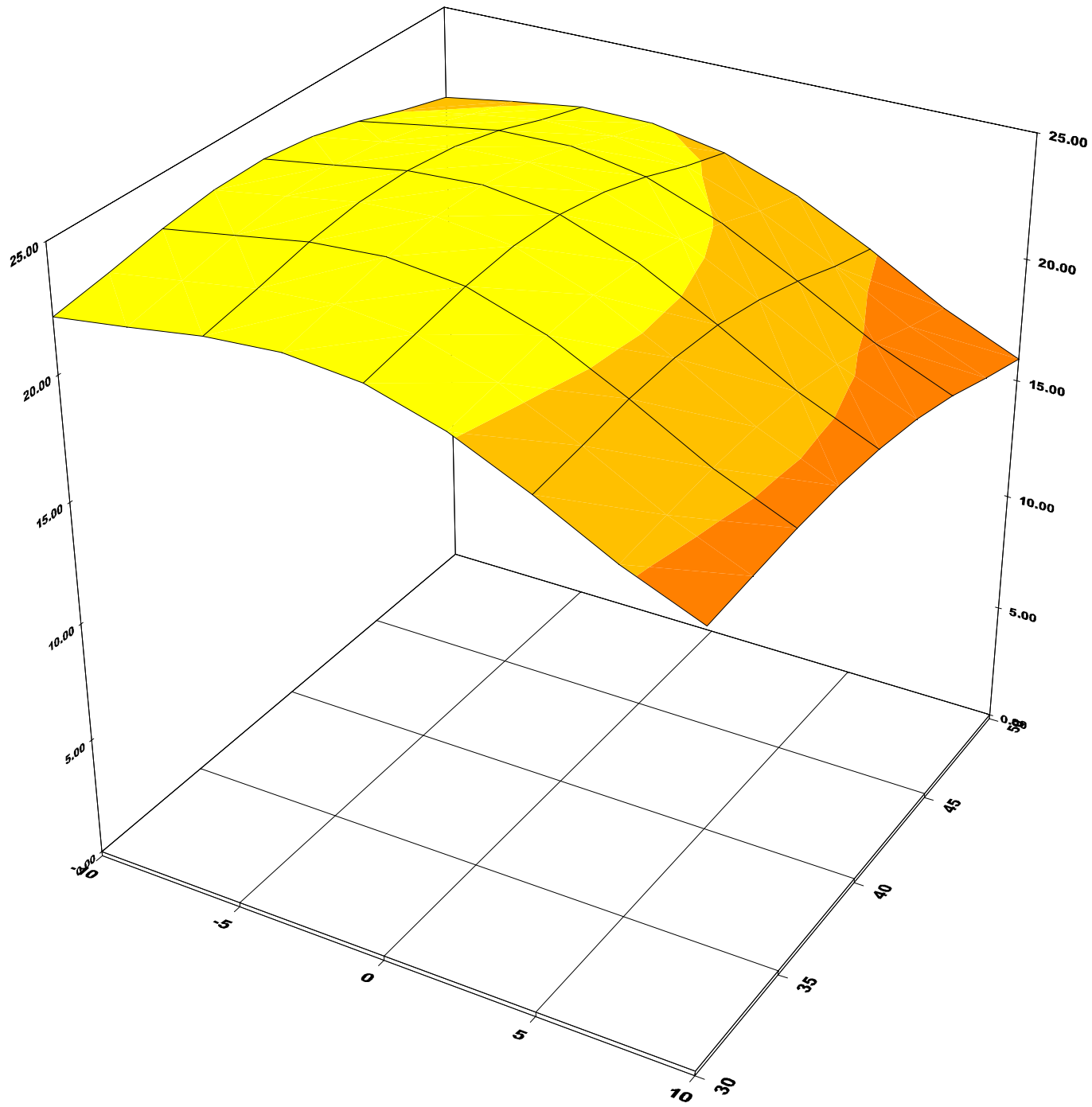
X = 0 Y = 40

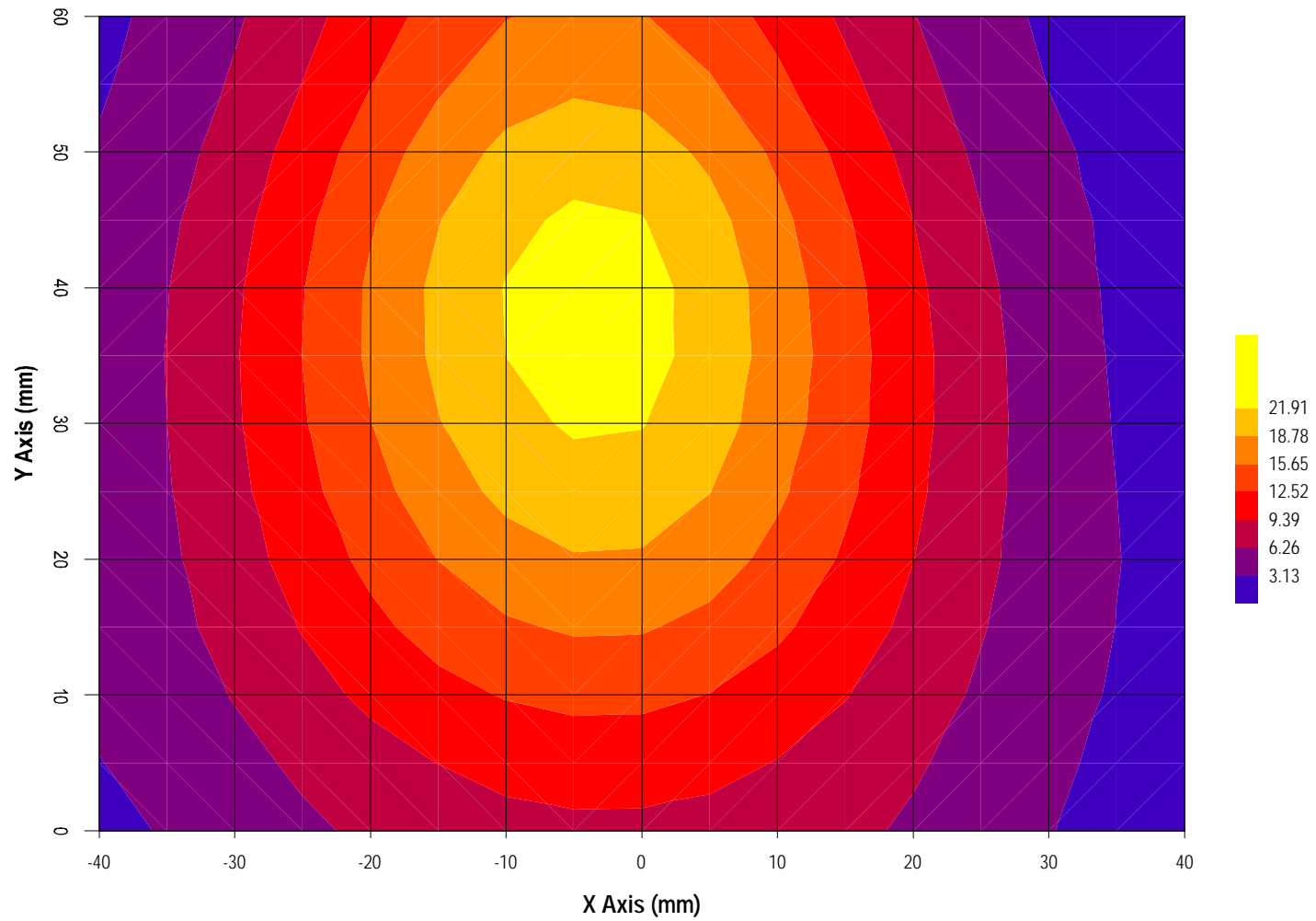
Measured Values (mV) :

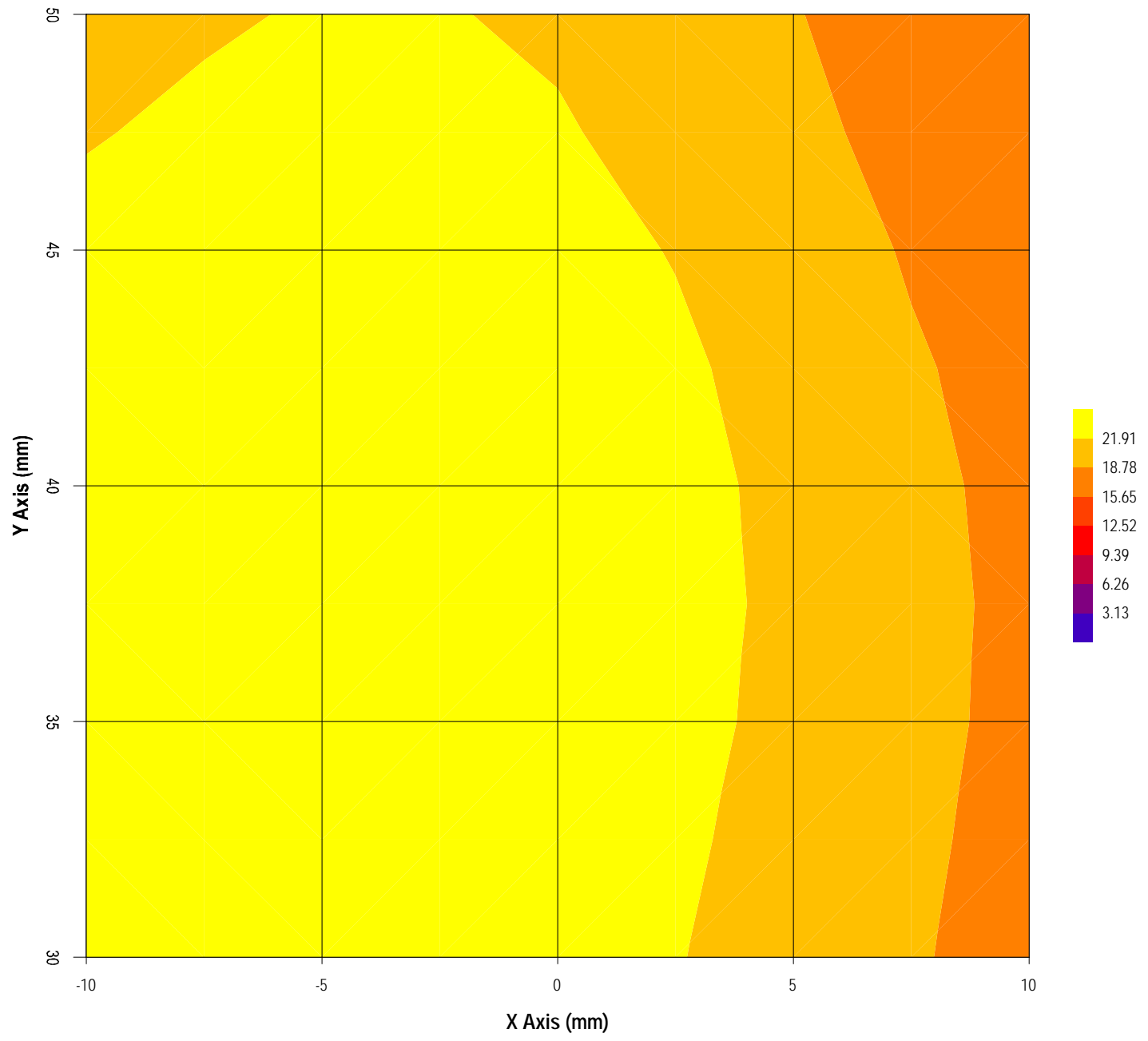
24.410 23.263 20.642 18.347 16.878 15.440
14.332 13.115 12.144 11.288 10.261

Peak Voltage (mV) : 29.976 1 Cm Voltage (mV) : 12.437 SAR (W/Kg) : 1.584









Test Information

Date : 18/10/2001
Time : 11:26:18 AM

<u>Product</u>	: Point Of Sale Device	<u>Test</u>	: SAR
<u>Manufacturer</u>	: Lipman USA, Inc	<u>Frequency (MHz)</u>	: 836.5
<u>Model Number</u>	: NURIT 8000 CDPD	<u>Nominal Output Power (W)</u>	: 0.600
<u>Serial Number</u>	: Test Sample	<u>Antenna Type</u>	: Patch
<u>FCC ID Number</u>	: O2SNURIT8000CI	<u>Signal</u>	: CW

<u>Phantom</u>	: Waist	<u>Dielectric Constant</u>	: 54.9
<u>Simulated Tissue</u>	: Muscle	<u>Conductivity</u>	: 1.260

<u>Probe</u>	: UT-ETR-0200-1	<u>Antenna Position</u>	: Back Face
<u>Probe Offset (mm)</u>	: 2.250	<u>Measured Power (W)</u>	: 0.490
<u>Sensor Factor (mV)</u>	: 10.8	(conducted)	
<u>Conversion Factor</u>	: 0.880	<u>Cable Insertion Loss (dB)</u>	: 0
<u>Calibrated Date</u>	: 14/06/2001	<u>Compensated Power (W)</u>	: 0.490

Amplifier Setting :

Channel 1 : 0.0060	Channel 2 : 0.0056	Channel 3 : 0.0073
--------------------	--------------------	--------------------

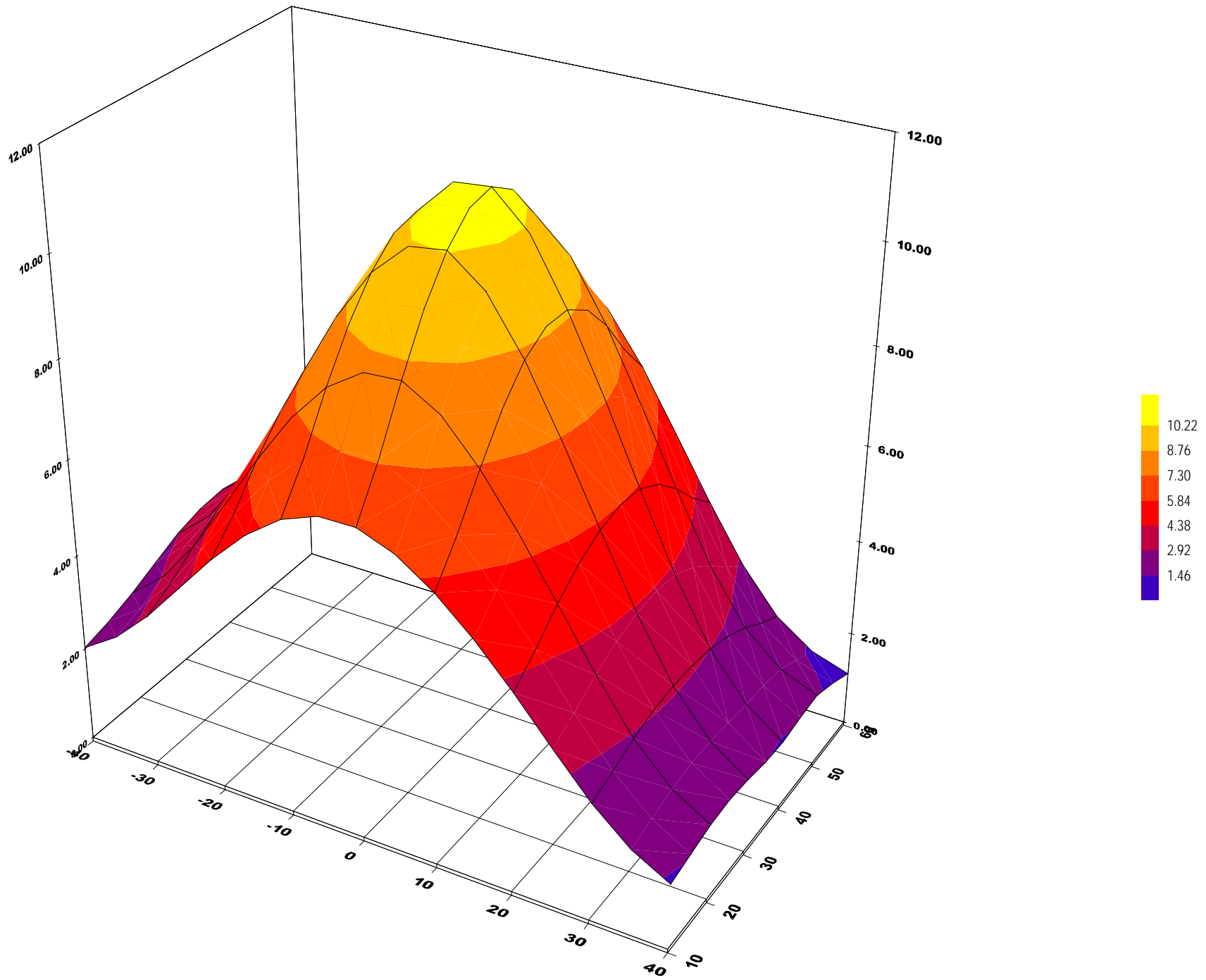
Location of Maximum Field :

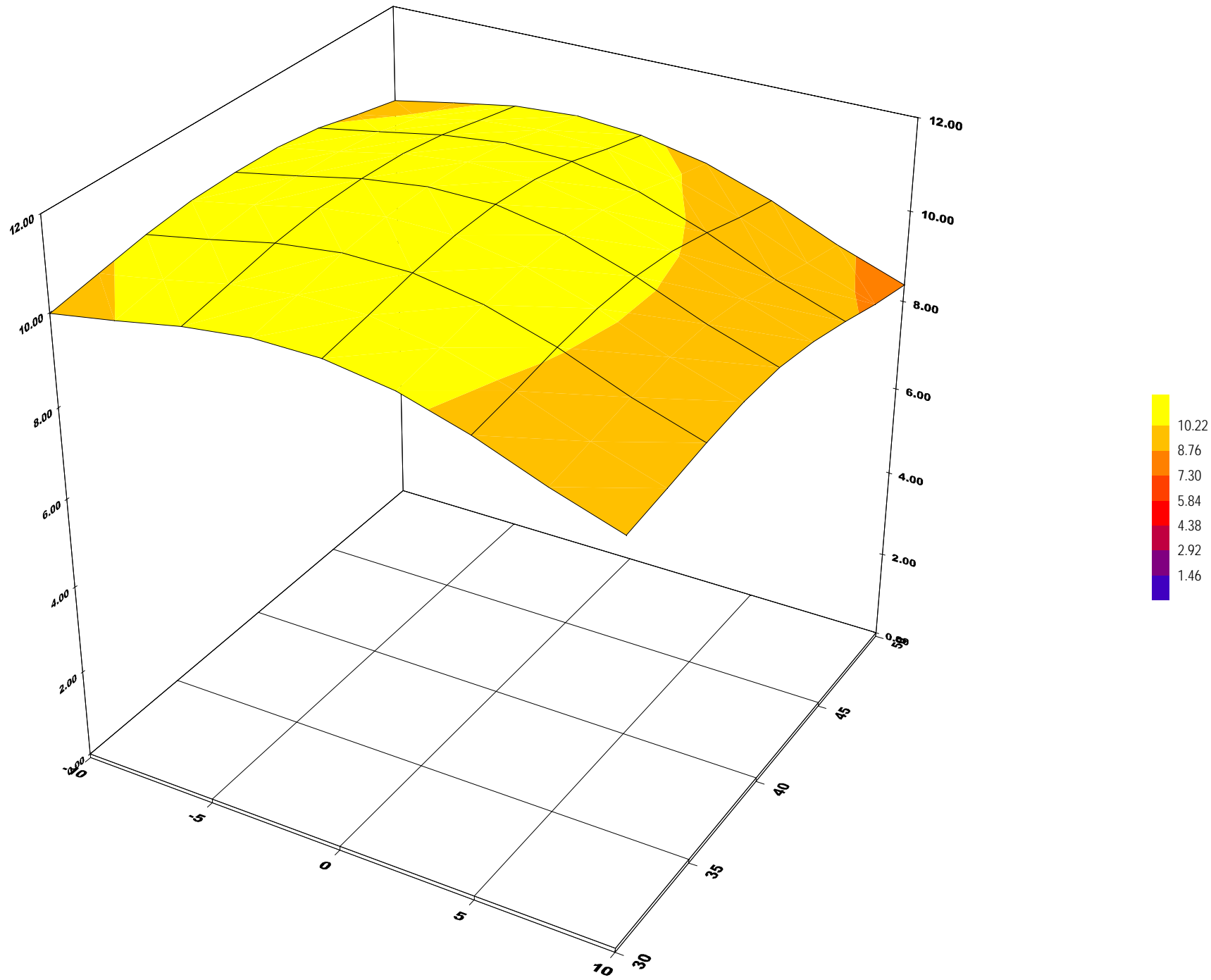
X = 0 Y = 40

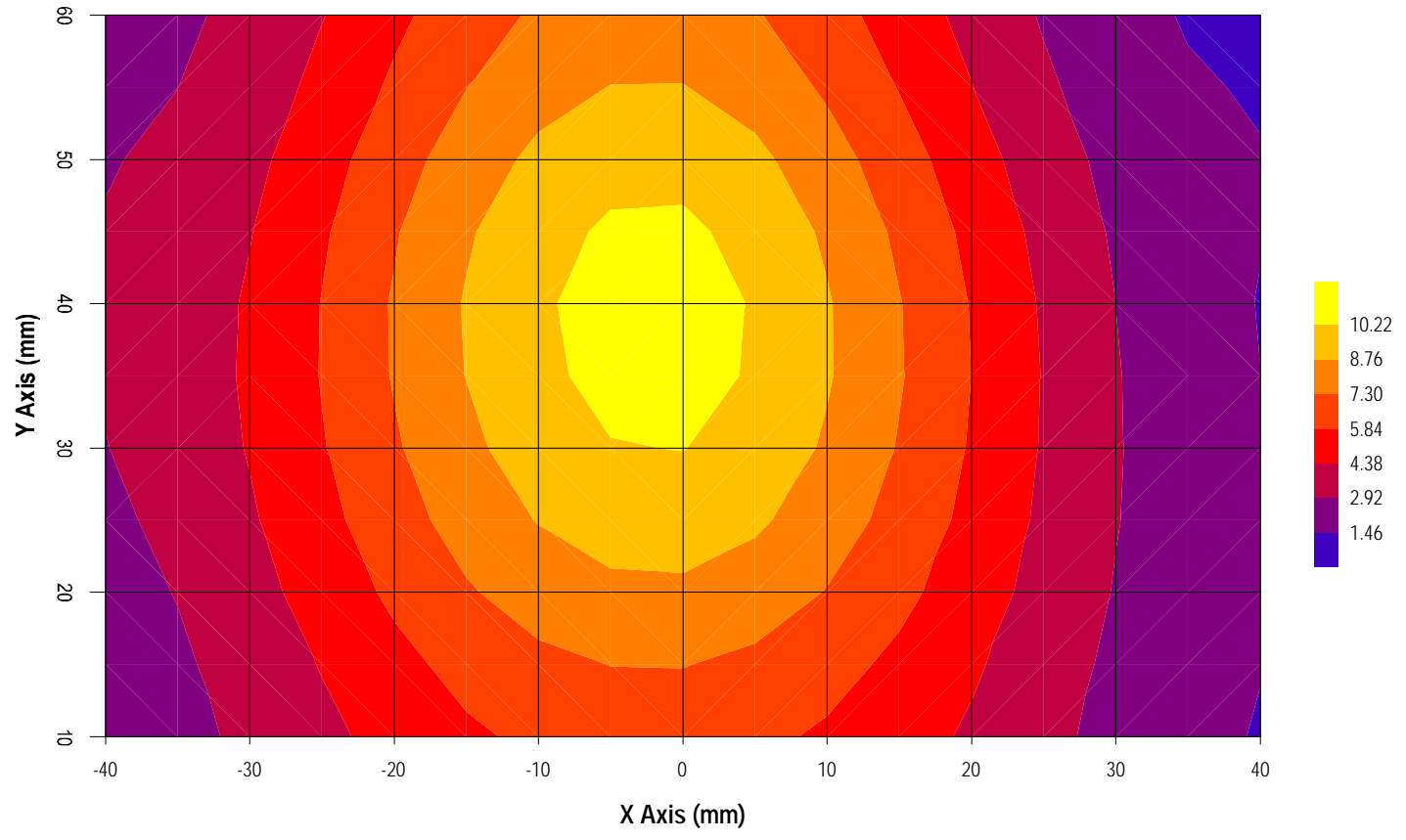
Measured Values (mV) :

11.489	10.889	9.308	8.261	7.640	7.043
6.412	5.867	5.358	4.944	4.539	

<u>Peak Voltage (mV)</u>	: 14.370	<u>1 Cm Voltage (mV)</u>	: 5.532	<u>SAR (W/Kg)</u>	: 0.719
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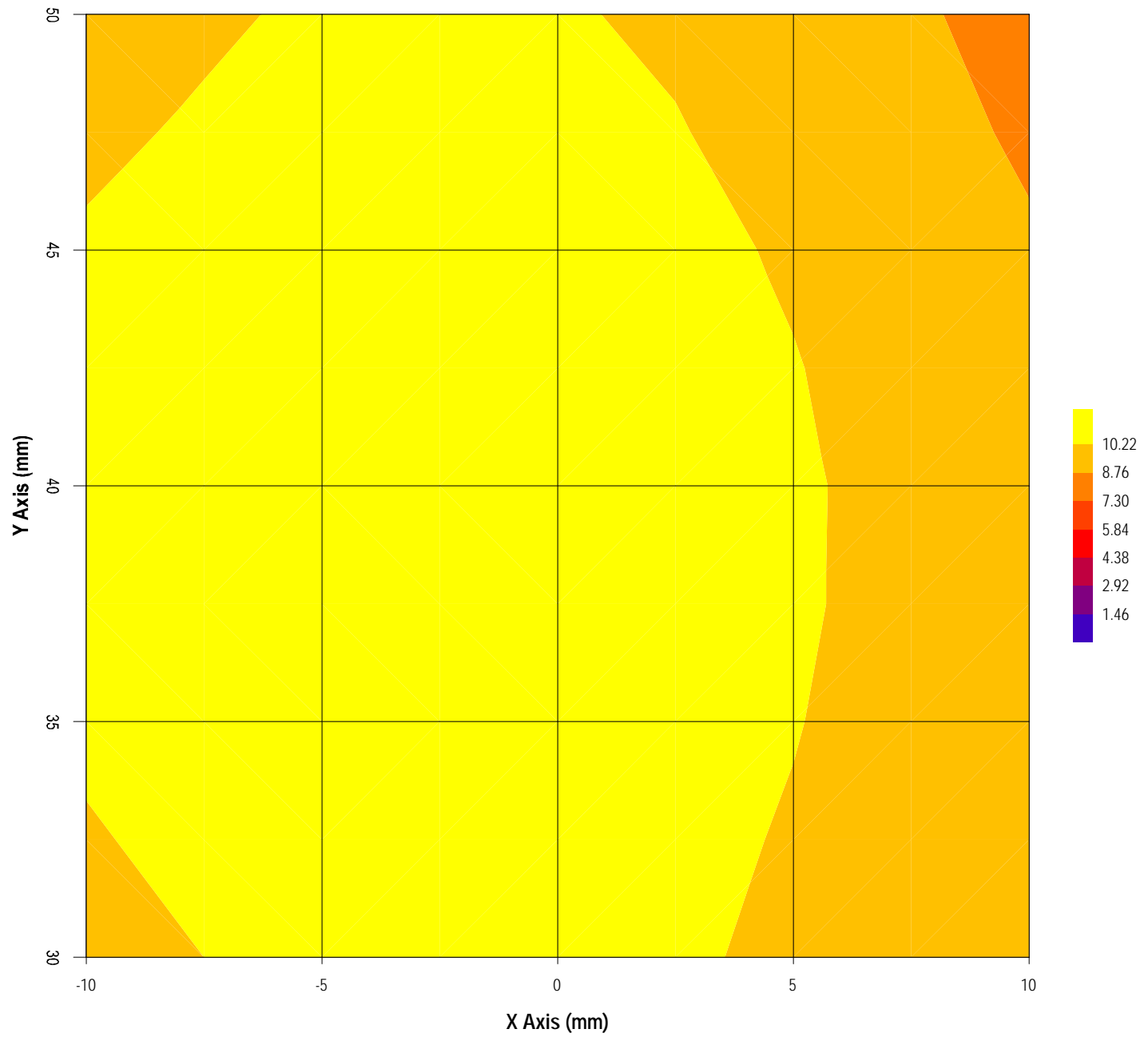


EXHIBIT 10. 848.9 MHz SAR MEASUREMENT

Test data for 848.9 MHz SAR measurements are presented in following order:

Back surface of EUT parallel to phantom waist:

- ▶ 15 mm away from phantom
- ▶ 25 mm away from phantom

Detailed SAR results with EUT relocated for maximum contact with phantom surface

EUT Configurations	EUT Separation Distance to Phantom (mm)	Antenna Position	SAR (W/kg)
			Device Test Frequency & Output 848.9 MHz, 302.0 mW (ERP)
Back surface of EUT parallel to phantom waist	15	Internal	1.587
	25	Internal	0.711

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Test Information

Date : 18/10/2001

Time : 9:36:12 AM

Product : Point Of Sale Device
Manufacturer : Lipman USA, Inc
Model Number : NURIT 8000 CDPD
Serial Number : Test Sample
FCC ID Number : O2SNURIT8000CI

Test : SAR
Frequency (MHz) : 848.9
Nominal Output Power (W) : 0.600
Antenna Type : Patch
Signal : CW

Phantom : Waist
Simulated Tissue : Muscle

Dielectric Constant : 54.9
Conductivity : 1.260

Probe : UT-ETR-0200-1
Probe Offset (mm) : 2.250
Sensor Factor (mV) : 10.8
Conversion Factor : 0.880
Calibrated Date : 14/06/2001

Antenna Position : Back Face
Measured Power (W) : 0.340
(conducted)
Cable Insertion Loss (dB) : 0
Compensated Power (W) : 0.340

Amplifier Setting :

Channel 1 : 0.0060 Channel 2 : 0.0056 Channel 3 : 0.0073

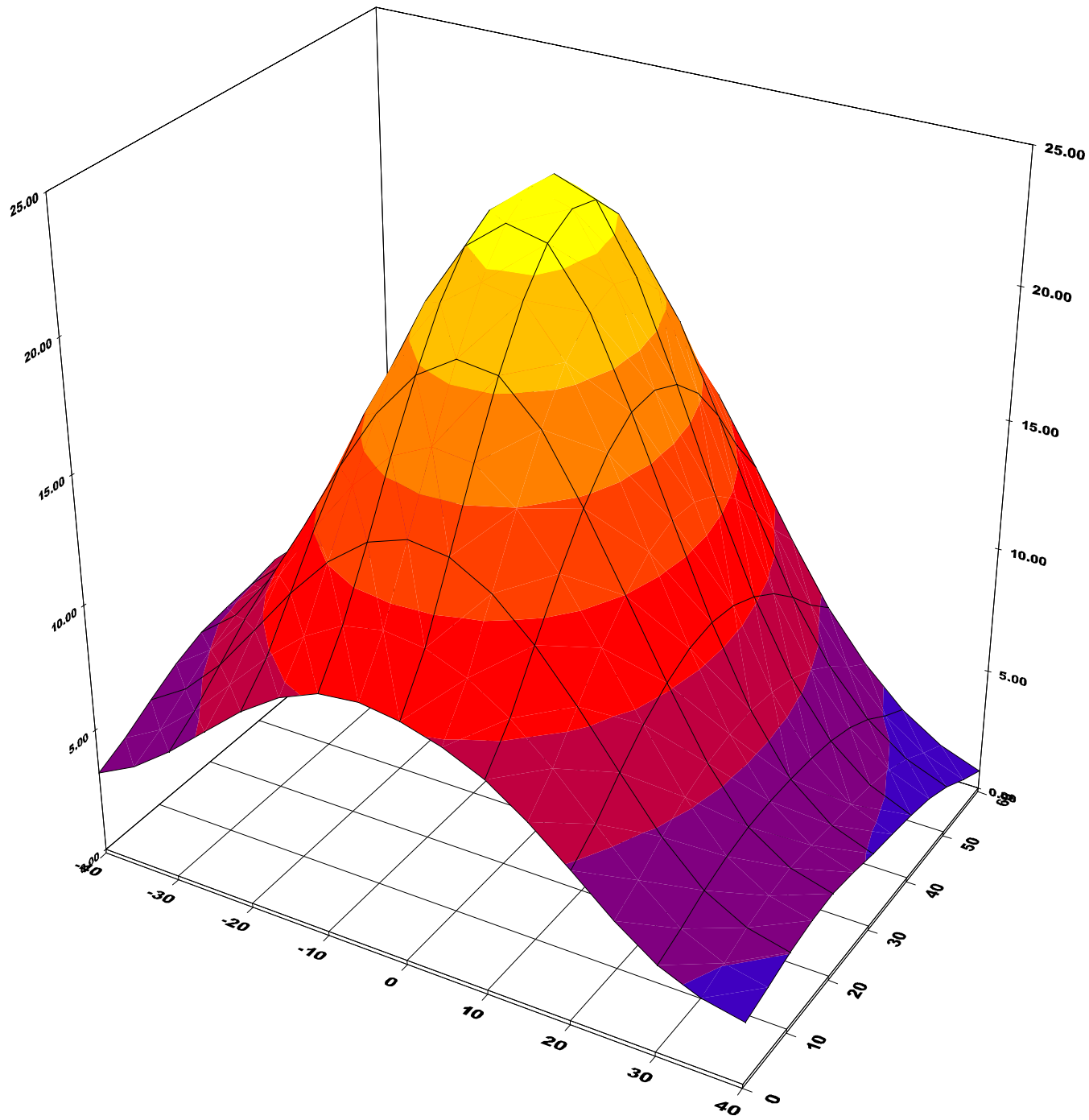
Location of Maximum Field :

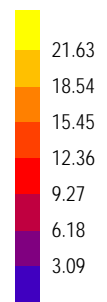
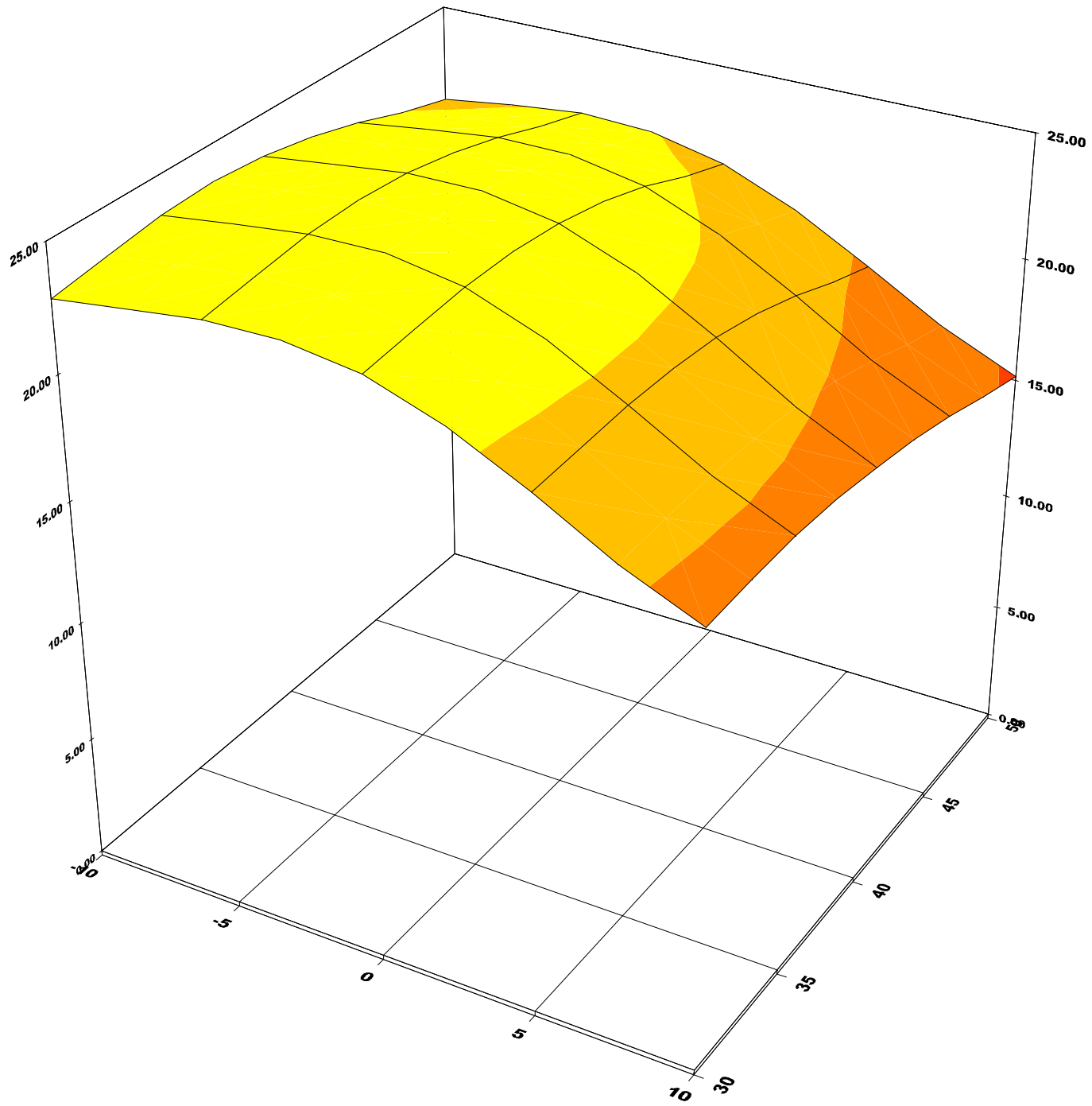
X = -5 Y = 35

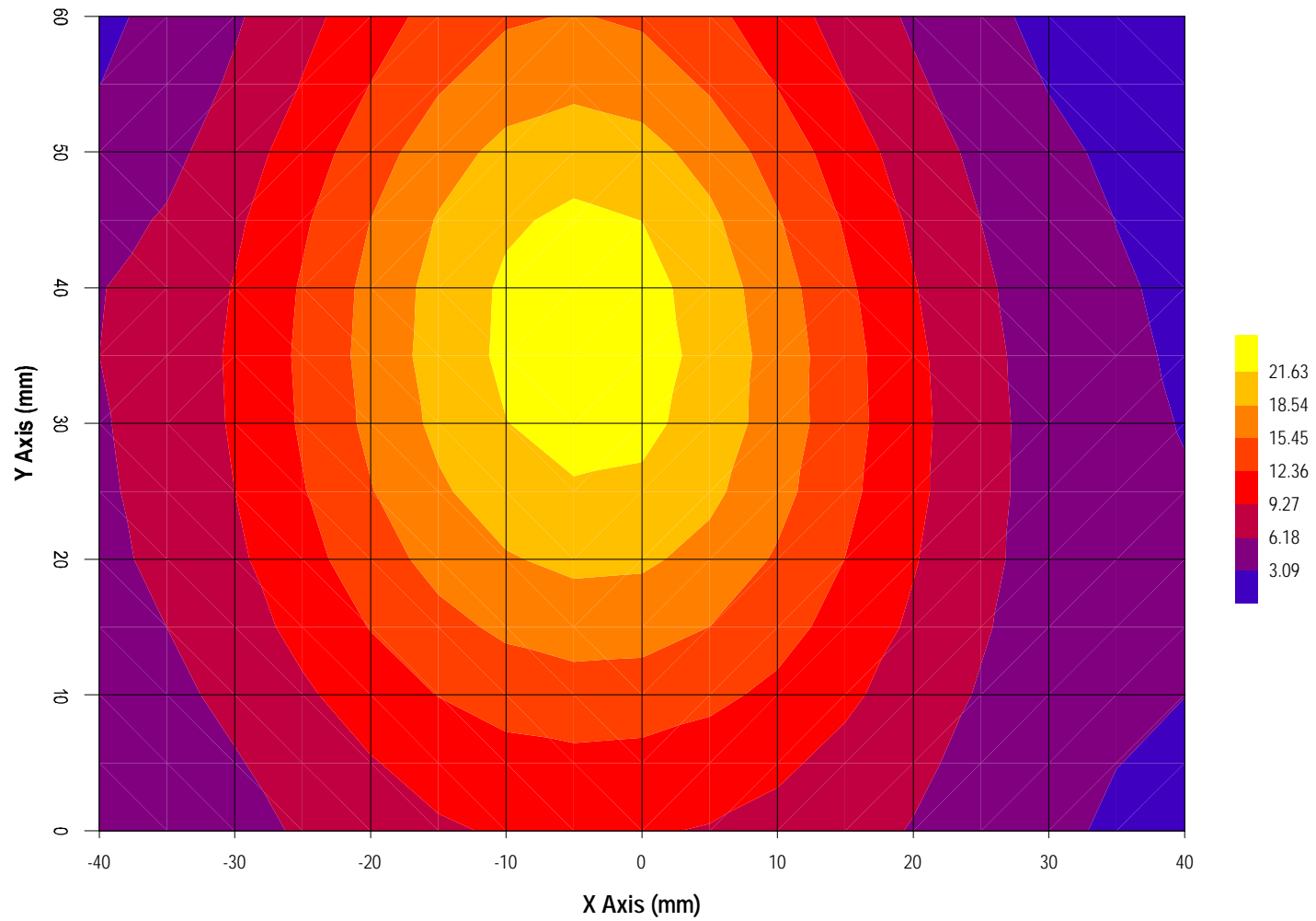
Measured Values (mV) :

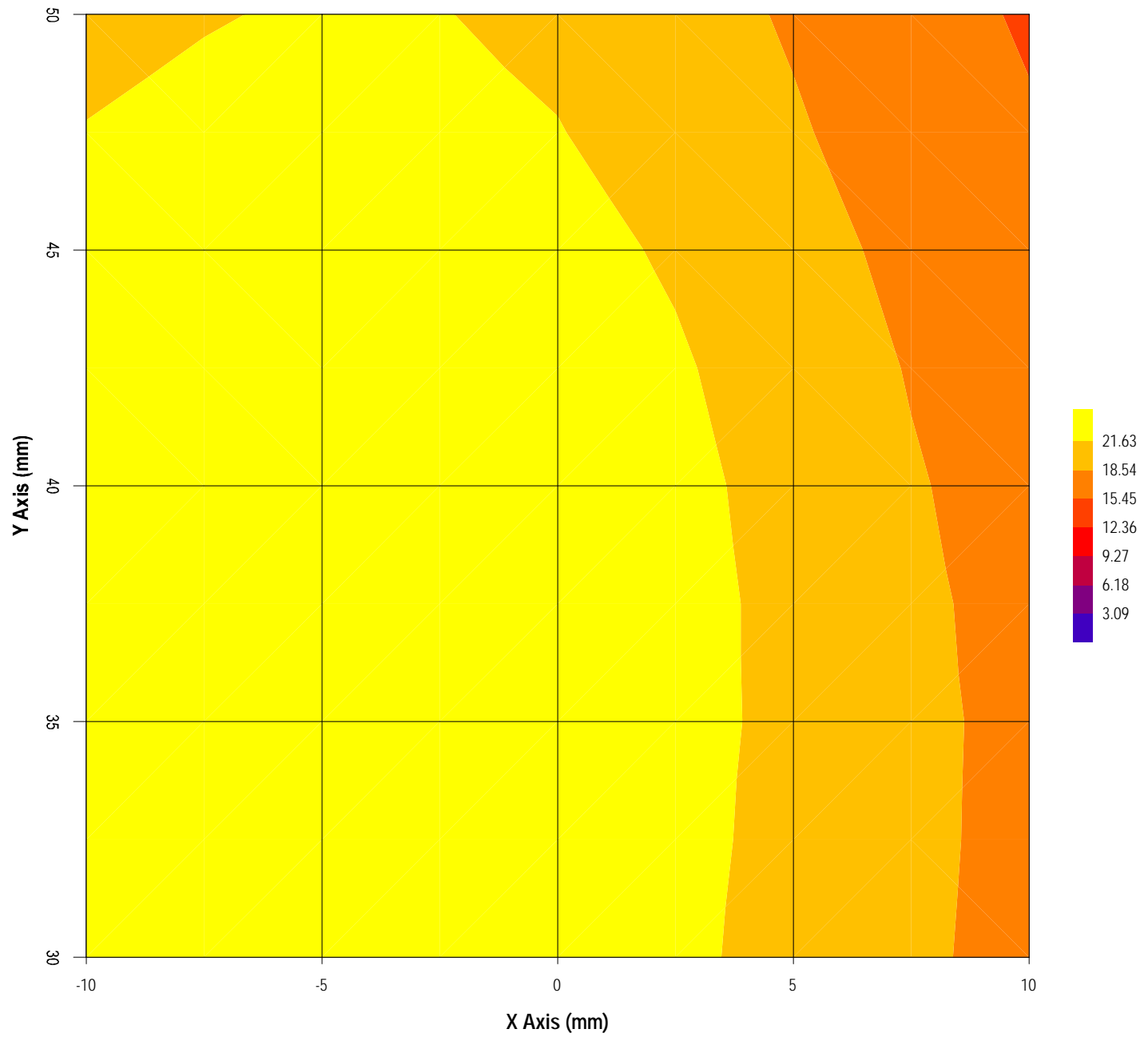
24.498 22.824 20.425 18.417 16.828 15.346
14.309 13.270 12.221 11.286 10.452

Peak Voltage (mV) : 30.068 1 Cm Voltage (mV) : 12.496 SAR (W/Kg) : 1.587









Test Information

Date : 18/10/2001
Time : 11:50:17 AM

<u>Product</u>	: Point Of Sale Device	<u>Test</u>	: SAR
<u>Manufacturer</u>	: Lipman USA, Inc	<u>Frequency (MHz)</u>	: 848.9
<u>Model Number</u>	: NURIT 8000 CDPD	<u>Nominal Output Power (W)</u>	: 0.600
<u>Serial Number</u>	: Test Sample	<u>Antenna Type</u>	: Patch
<u>FCC ID Number</u>	: O2SNURIT8000CI	<u>Signal</u>	: CW

<u>Phantom</u>	: Waist	<u>Dielectric Constant</u>	: 54.9
<u>Simulated Tissue</u>	: Muscle	<u>Conductivity</u>	: 1.260

<u>Probe</u>	: UT-ETR-0200-1	<u>Antenna Position</u>	: Back Face
<u>Probe Offset (mm)</u>	: 2.250	<u>Measured Power (W)</u>	: 0.340
<u>Sensor Factor (mV)</u>	: 10.8	(conducted)	
<u>Conversion Factor</u>	: 0.880	<u>Cable Insertion Loss (dB)</u>	: 0
<u>Calibrated Date</u>	: 14/06/2001	<u>Compensated Power (W)</u>	: 0.340

Amplifier Setting :

Channel 1 : 0.0060	Channel 2 : 0.0056	Channel 3 : 0.0073
--------------------	--------------------	--------------------

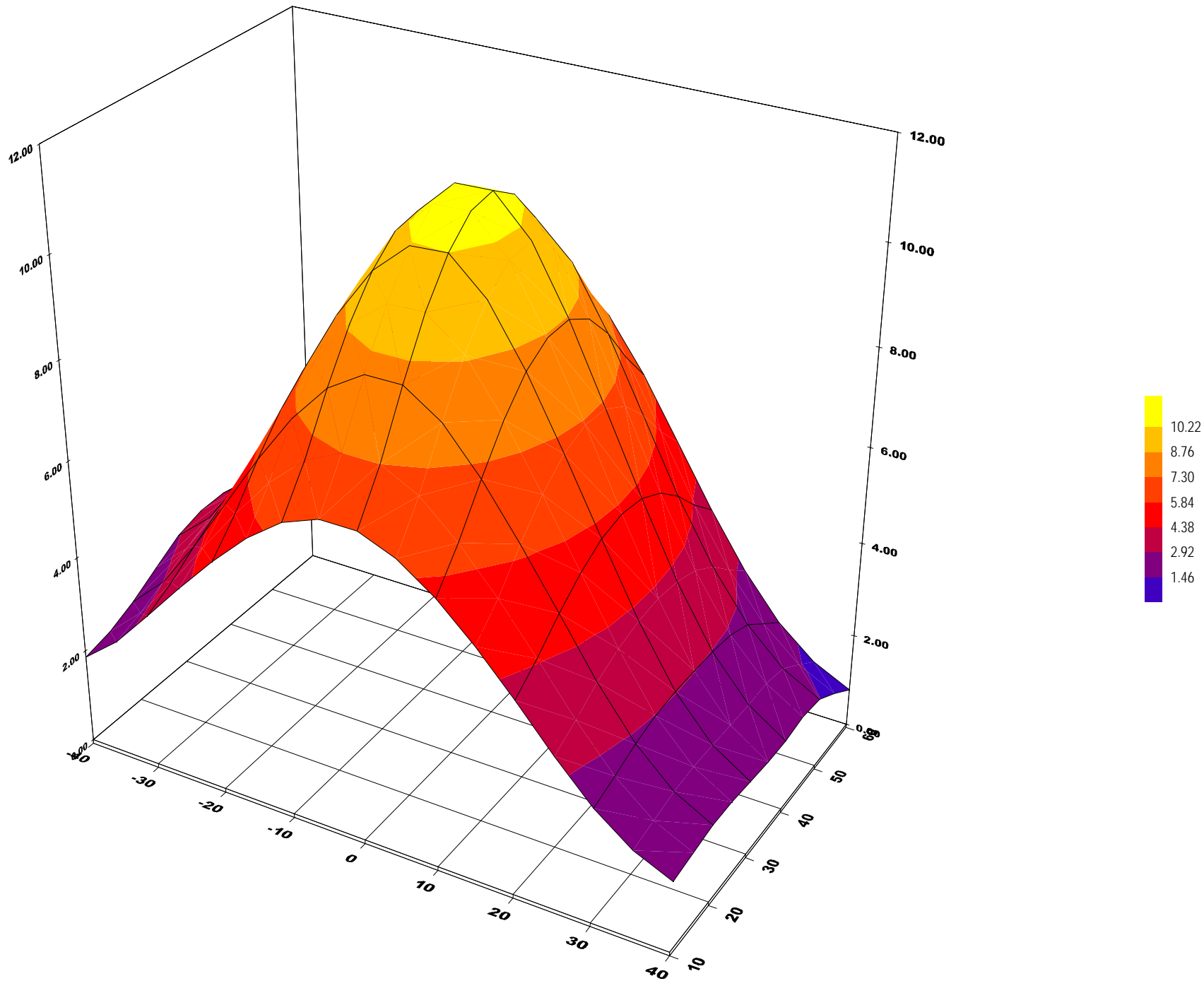
Location of Maximum Field :

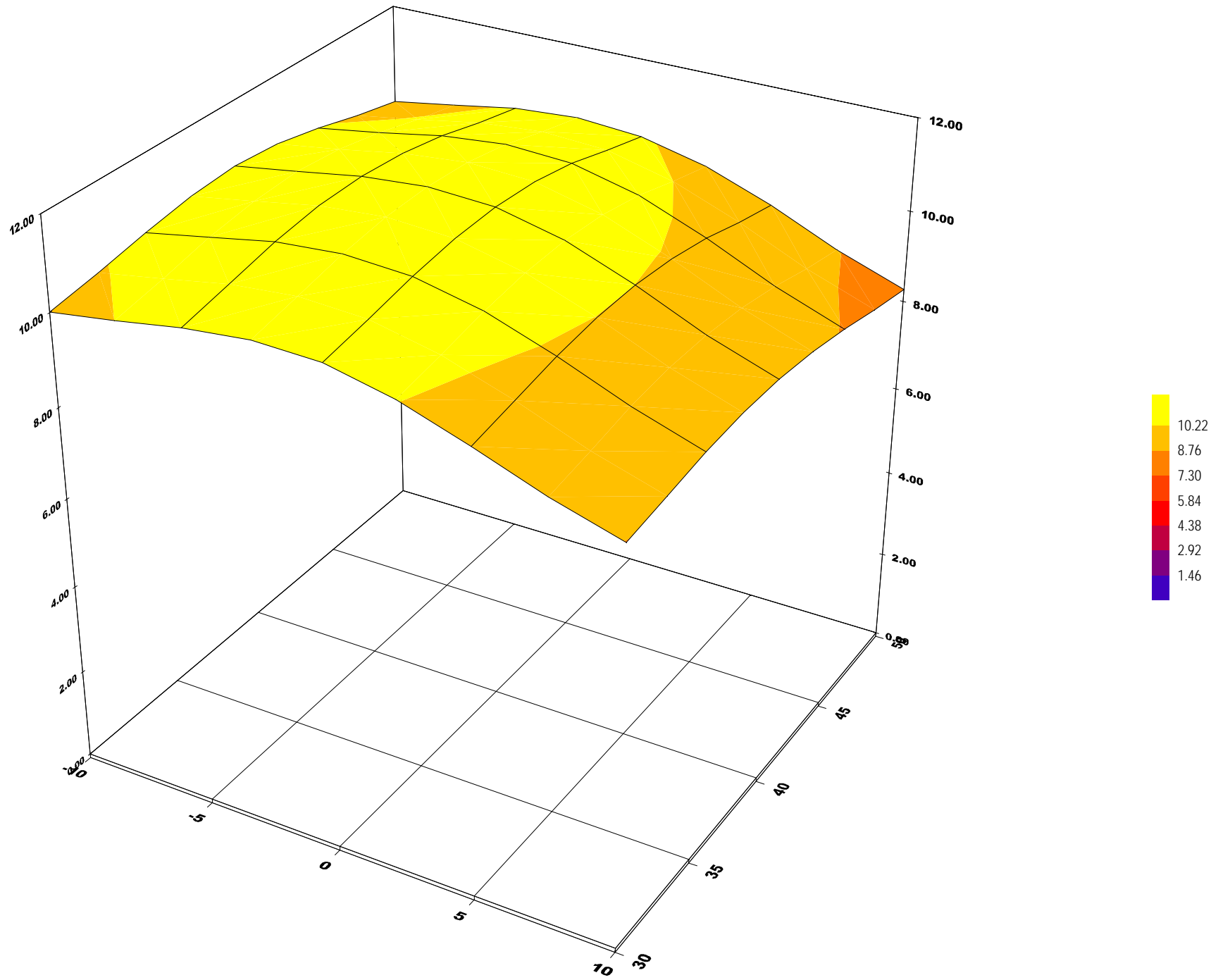
X = 0 Y = 40

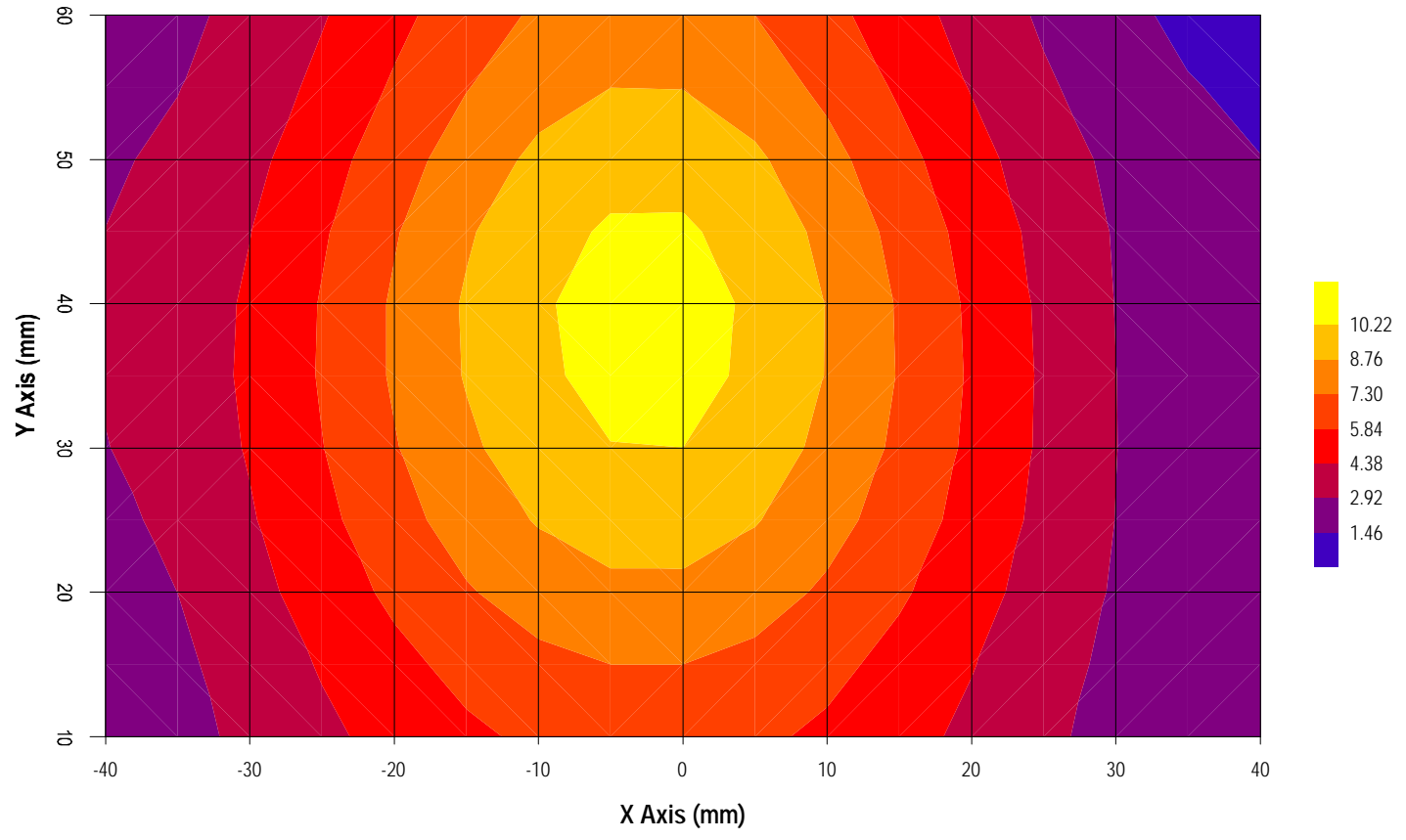
Measured Values (mV) :

11.484	10.619	9.125	8.334	7.415	6.884
6.175	5.733	5.248	4.839	4.339	

<u>Peak Voltage (mV)</u>	: 14.526	<u>1 Cm Voltage (mV)</u>	: 5.397	<u>SAR (W/Kg)</u>	: 0.711
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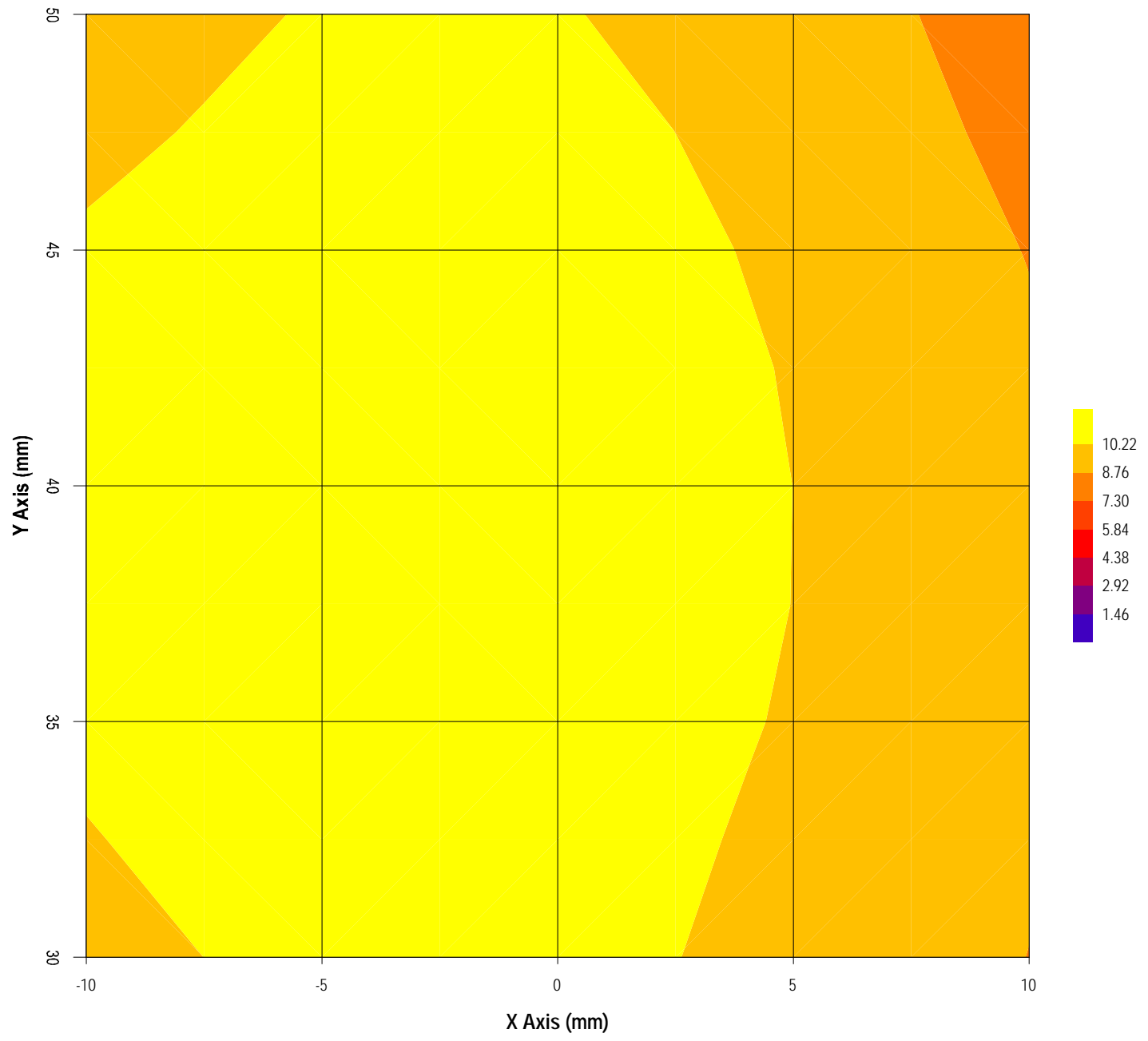


EXHIBIT 11. DUTY CYCLE INFORMATION

The duty cycle is 100%.

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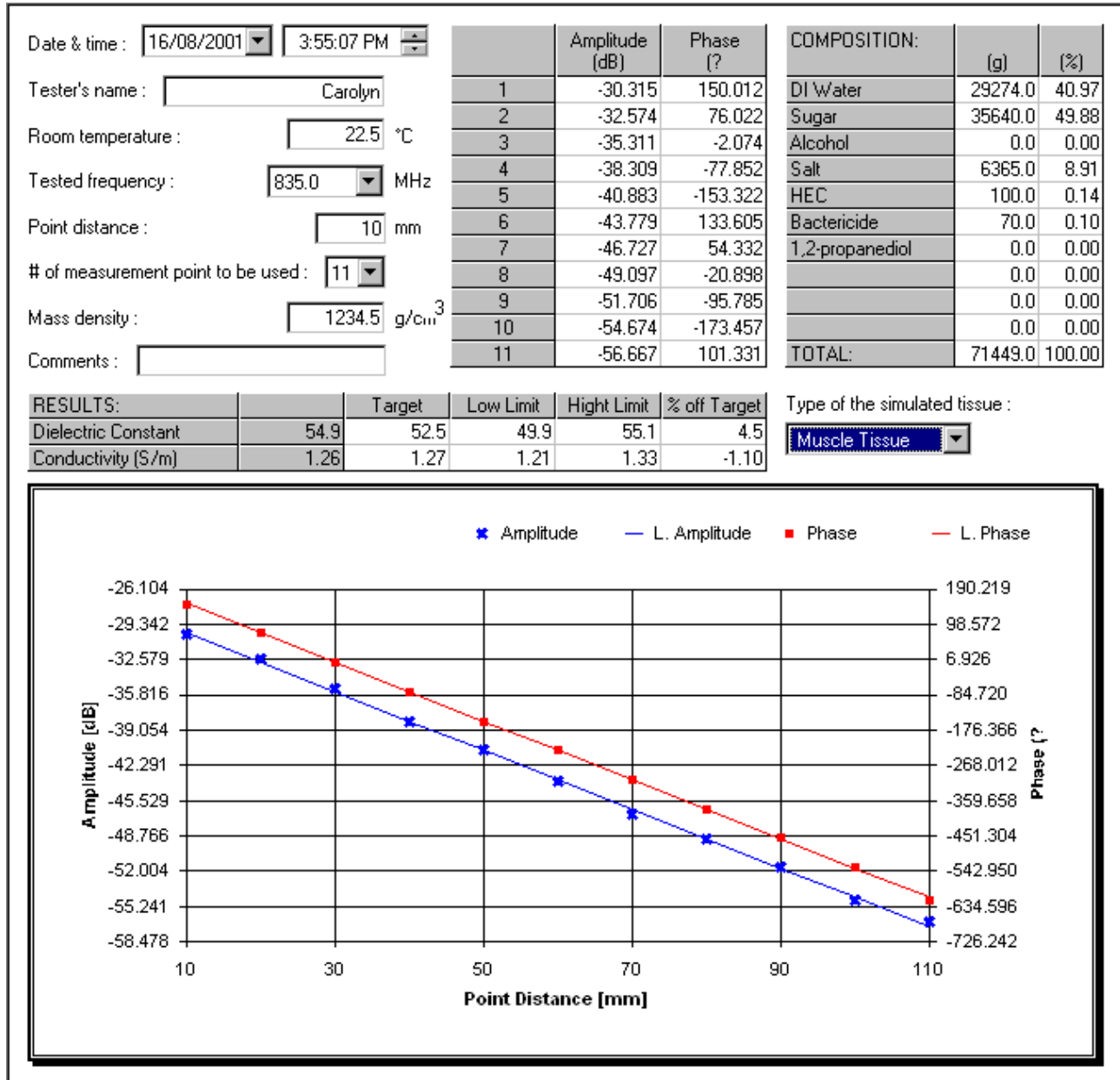
Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: yhk.ultratech@sympatico.ca, Website: <http://www.ultratech-labs.com>

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EXHIBIT 12. TISSUE CALIBRATION

The tissue conductivity was calibrated in accordance with IEEE Std 1528-200X, Draft 6.1 November 14, 2000, Sponsor IEEE SCC 34.



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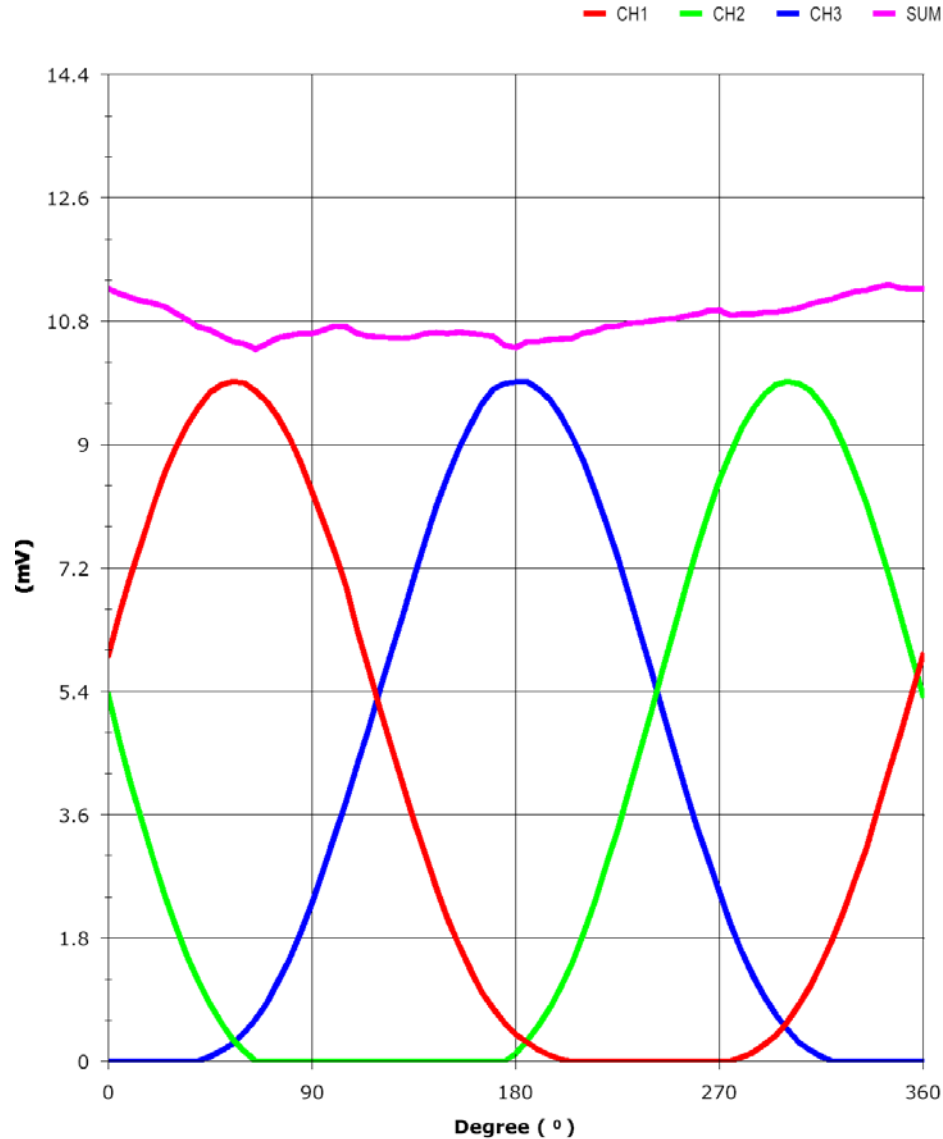
3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4
 Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: yhk.ultratech@sympatico.ca, Website: <http://www.ultratech-labs.com>

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EXHIBIT 13. PROBE CALIBRATION FREE SPACE

Probe Name : UT-ERT-0200-1
Type : E-field (Triangular beam), Offset(mm) : 2.25
Frequency(MHz) : 835
Amplifier Setting : 0.00602438, 0.00569584, 0.00730465
Calibrated Date : 17/10/2001 9:29:05 AM



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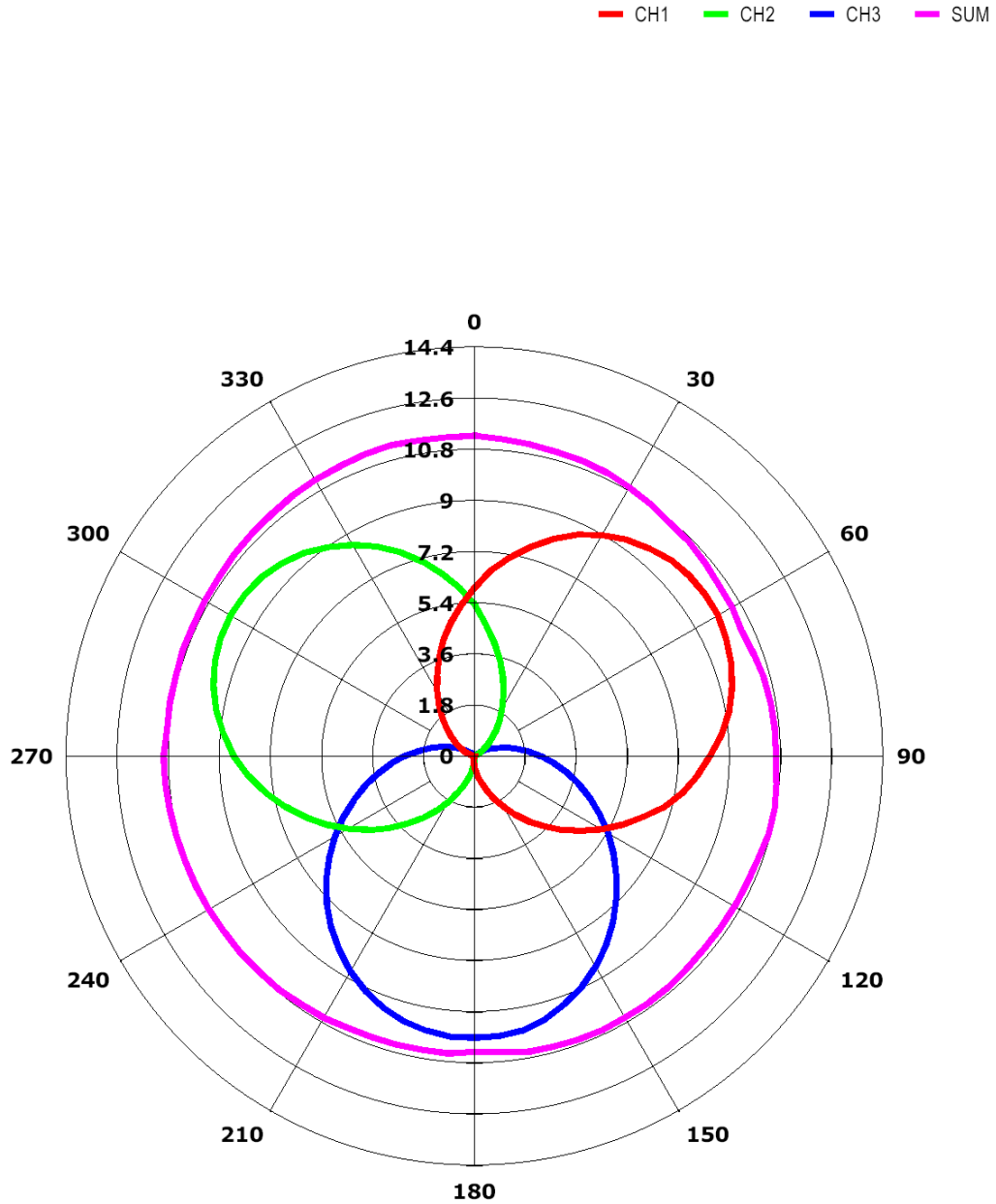
- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia), VCCI (Japan)
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SPECIFIC ABSORPTION RATIO (SAR)

IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C), Industry Canada RSS-102 (Issue 1) and ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)

Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI



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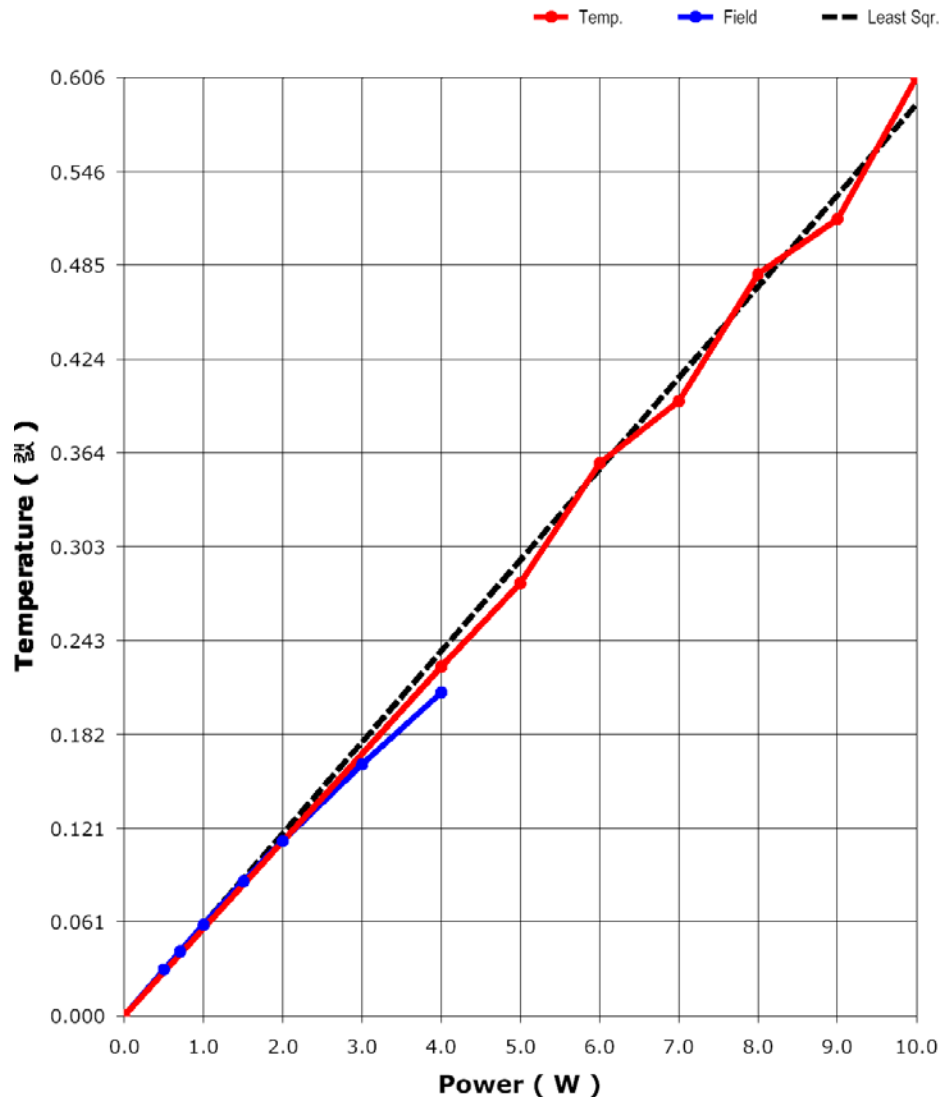
3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4
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EXHIBIT 14. PROBE TEMPERATURE TRANSFER CALIBRATION

Probe Name : UT-ETR-0200-1
Type : E-field (Triangular beam), Offset(mm) : 2.25
Frequency(MHz) : 835, Conversion Factor : 0.8801
Simulated Tissue Type : Muscle
Dielectrical Const. : 54.6, Conductivity : 1.33
Temperature of Simulated Tissue(℃) : 20.3, Room : 22.0
Calibrated Date : 14/06/2001 10:56:16 PM



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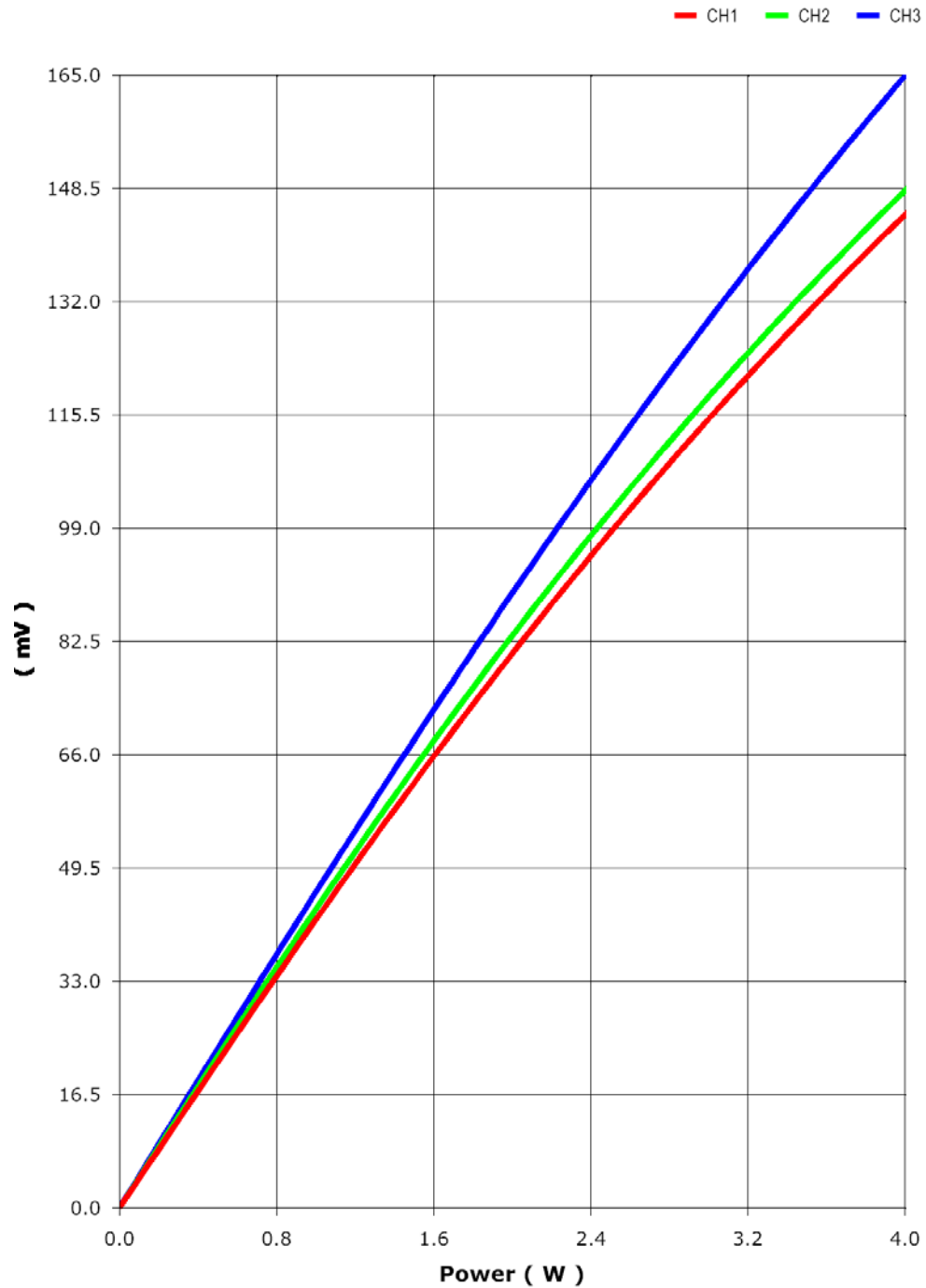
- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia), VCCI (Japan)
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SPECIFIC ABSORPTION RATIO (SAR)

IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C), Industry Canada RSS-102 (Issue 1) and ACA Radiocommunications (Electromagnetic Radiation – Human Exposure) Amendment Standard 2000 (No. 1)

Point of Sale Device, Model No.: NURIT 8000 CDPD

FCC ID: O2SNURIT8000CI



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EXHIBIT 15. ANTENNA SPECIFICATIONS



Technical Specification Sheet

800 MHz Cellular Antenna — P/N 100800



Features

- Small and lightweight
- No tuning components
- Available in tape and reel or tray packing for automatic mounting

Performa™ Series Antennas

This small embedded antenna provides the most reliable, easy-to-use, and adjustment-free antenna technology for handling during assembly and implementation by developers.

Electrical

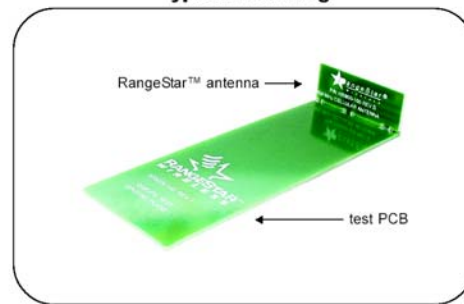
Frequency Range	824 – 894 MHz
Peak Gain ⁽¹⁾	0 dBi
VSWR ⁽¹⁾	less than 2.3:1
Polarization	linear
Azimuth Beamwidth	omnidirectional
Power Handling	10 Watt cw
Feed Point Impedance	50 Ohms unbalanced

Note (1) Figures dependent on ground plane size

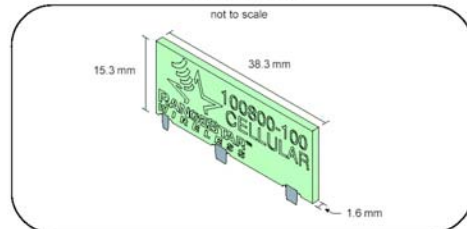
Mechanical

Size	38.3 x 15.3 x 1.6 mm
Weight	1 g
Mounting	tab mounted with plated through holes

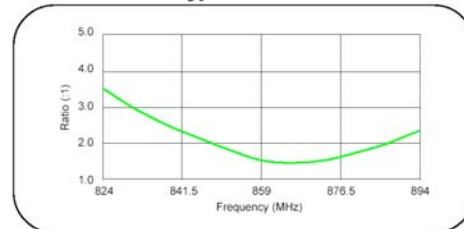
Typical Mounting



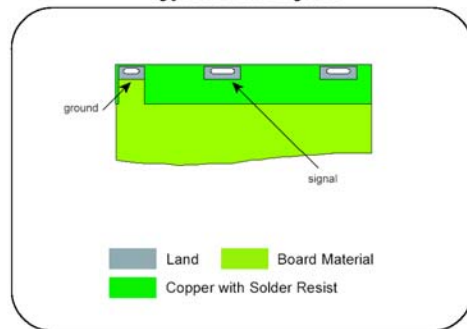
Dimensions



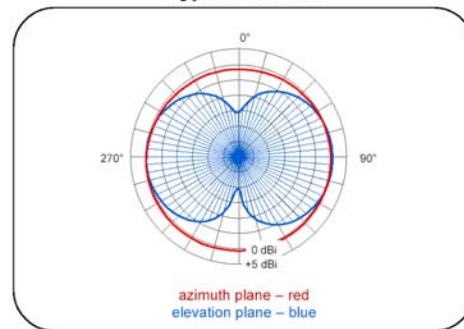
Typical VSWR



Typical Pad Layout



Typical Pattern



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