



# RF EXPOSURE LAB, LLC

2867 Progress Place, Suite 4D • Escondido, CA 92029 • U.S.A.

TEL (760) 737-3131 • FAX (760) 737-9131

<http://www.rfexposurelab.com>

## CERTIFICATE OF COMPLIANCE SAR EVALUATION

Motion Computing  
8601 Ranch Road 2222, Building 2  
Austin, TX 78730

Dates of Test: March 17-22, 2006  
May 22, 2006  
Test Report Number: SAR.20060305  
Revision B

FCC ID:	Q3QWMIA123AG
IC Certificate:	4587A-LS800
Model(s):	TS01
Test Sample:	Engineering Unit Same as Production Unit
Serial No.:	202191420
Equipment Type:	Tablet PC
Classification:	Portable Transmitter Next to Body
TX Frequency Range:	2412 - 2462 MHz, 5180 - 5240 MHz, 5260 - 5320 MHz, 5745 - 5825 MHz
Frequency Tolerance:	2.4 GHz - ± 25 ppm, 5 GHz - ± 20 ppm, BT - ± 75 kHz
Maximum RF Output:	2.4 GHz-18 dBm, 5.2 GHz-14 dBm, 5.8 GHz-14 dBm, Bluetooth-4 dBm Conducted
Signal Modulation:	DSSS/OFDM/Bluetooth
Antenna Type (Length):	(2) Internal, Part Number DC330018100
Battery:	Sanyo Model BATEAX00L
Application Type:	Certification
FCC Rule Parts:	Part 15E
IC Specification:	RSS-102

This wireless mobile and/or portable device has been shown to be compliant for localized specific absorption rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE Std. C95.1-1999 and had been tested in accordance with the measurement procedures specified in IEEE 1528-2003, OET Bulletin 65 Supp. C, RSS-102 and Safety Code 6 (See test report).

I attest to the accuracy of the data. All measurements were performed by myself or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RF Exposure Lab, LLC certifies that no party to this application has been denied FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

Jay M. Moulton  
Vice President



Certificate # 2387.01

## Table of Contents

1.	Introduction .....	3
	SAR Definition [5].....	3
2.	SAR Measurement Setup .....	4
	Robotic System.....	4
	System Hardware .....	4
	System Description .....	4
	E-Field Probe ALS-E-020 .....	5
3.	Robot Specifications .....	7
4.	Probe and Dipole Calibration .....	8
5.	Phantom & Simulating Tissue Specifications.....	9
	SAM Phantom.....	9
	Brain & Muscle Simulating Mixture Characterization .....	9
	Device Holder .....	9
6.	Definition of Reference Points.....	10
	Ear Reference Point.....	10
	Device Reference Points .....	10
7.	Test Configuration Positions .....	11
	Positioning for Cheek/Touch [5].....	11
	Positioning for Ear / 15° Tilt [5].....	12
	Body Worn Configurations .....	13
8.	ANSI/IEEE C95.1 – 1999 RF Exposure Limits [2].....	14
	Uncontrolled Environment.....	14
	Controlled Environment .....	14
9.	Measurement Uncertainty .....	15
10.	System Validation .....	16
	Tissue Verification.....	16
	Test System Verification .....	17
11.	SAR Test Data Summary .....	18
	Procedures Used To Establish Test Signal.....	18
	Device Test Condition.....	18
	SAR Data Summary – 2450 MHz Body – 11b .....	19
	SAR Data Summary – 2450 MHz Body – 11g .....	20
	SAR Data Summary – 5210 MHz Body – 11a .....	21
	SAR Data Summary – 5290 MHz Body – 11a .....	22
	SAR Data Summary – 5800 MHz Body – 11a .....	23
12.	Test Equipment List .....	24
13.	Conclusion .....	25
14.	References.....	26
	Appendix A – System Validation Plots and Data .....	27
	Appendix B – SAR Test Data Plots.....	45
	Appendix C – SAR Test Setup Photos .....	180
	Appendix D – Probe Calibration Data Sheets.....	190
	Appendix E – Dipole Calibration Data Sheets .....	221
	Appendix F – Phantom Calibration Data Sheets .....	243

## 1. Introduction

This measurement report shows compliance of the Motion Computing Model TS01 FCC ID: Q3QWMIA123AG with FCC Part 2, 1093, ET Docket 93-62 Rules for mobile and portable devices and IC Certificate: 4587A-LS800 with RSS102 & Safety Code 6. The FCC have adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on August 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC regulated portable devices. [1], [6]

The test procedures, as described in ANSI C95.1 – 1999 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [2], ANSI C95.3 – 2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields [3], FCC OET Bulletin 65 Supp. C – 2001 [4], IEEE Std.1528 – 2003 Recommended Practice [5], and Industry Canada Safety Code 6 Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz were employed.

### SAR Definition [5]

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy ( $dW$ ) absorbed by (dissipated in) an incremental mass ( $dm$ ) contained in a volume element ( $dV$ ) of a given density ( $\rho$ ).

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dV} \right)$$

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

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

where:

$\sigma$  = conductivity of the tissue (S/m)

$\rho$  = mass density of the tissue (kg/m<sup>3</sup>)

$E$  = rms electric field strength (V/m)

## 2. SAR Measurement Setup

### Robotic System

The measurements are conducted utilizing the ALSAS-10-U automated dosimetric assessment system. The ALSAS-10-U is designed and manufactured by Aprel Laboratories in Nepean, Ontario, Canada. The system utilizes a Robcomm 3 robot manufactured by ThermoCRS located in Michigan USA.

### System Hardware

The system consists of a six axis articulated arm, controller for precise probe positioning (0.05 mm repeatability), a power supply, a teach pendant for teaching area scans, near field probe, an IBM Pentium 4™ 2.66 GHz PC with Windows XP Pro™, and custom software developed to enable communications between the robot controller software and the host operating system.

An amplifier is located on the articulated arm, which is isolated from the custom designed end effector and robot arm. The end effector provides the mechanical touch detection functionality and probe connection interface. The amplifier is functionally validated within the manufacturer's site and calibrated at NCL Calibration Laboratories. A Data Acquisition Card (DAC) is used to collect the signal as detected by the isotropic e-field probe. The DAC manufacturer calibrates the DAC to NIST standards. A formal validation is executed using all mechanical and electronic components to prove conformity of the measurement platform as a whole.

### System Description

The ALSAS-10-U has been designed to measure devices within the compliance environment to meet all recognized standards. The system also conforms to standards, which are currently being developed by the scientific and manufacturing community.

The course scan resolution is defined by the operator and reflects the requirements of the standard to which the device is being tested. Precise measurements are made within the predefined course scan area and the values are logged.

The user predefines the sample rate for which the measurements are made so as to ensure that the full duty-cycle of a pulse modulation device is covered during the sample. The following algorithm is an example of the function used by the system for linearization of the output for the probe.

$$V_i = U_i + U_i^2 \bullet \frac{cf}{dcp_i}$$



The April E-Field probe is evaluated to establish the diode compression point.

A complex algorithm is then used to calculate the values within the measured points down to a resolution of 1mm. The data from this process is then used to provide the co-ordinates from which the cube scan is created for the determination of the 1 g and 10 g averages.

Cube scan averaging consists of a number of complex algorithms, which are used to calculate the one, and ten gram averages. The basis for the cube scan process is centered on the location where the maximum measured SAR value was found. When a secondary peak value is found which is within 60% of the initial peak value, the system will report this back to the operator who can then assess the need for further analysis of both the peak values prior to the one and ten-gram cube scan averaging process. The algorithm consists of 3D cubic Spline, and Lagrange extrapolation to the surface, which form the matrix for calculating the measurement output for the one and ten gram average values. The resolution for the physical scan integral is user defined with a final calculated resolution down to 1mm.

In-depth analysis for the differential of the physical scanning resolution for the cube scan analysis has been carried out, to identify the optimum setting for the probe positioning steps, and this has been determined at 8mm increments on the X, & Y planes. The reduction of the physical step increment increased the time taken for analysis but did not provide a better uncertainty or return on measured values.

The final output from the system provides data for the area scan measurements, physical and splined (1mm resolution) cube scan with physical and calculated values (1mm resolution).

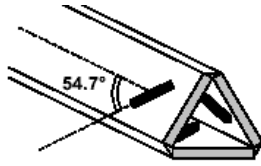
The overall uncertainty for the methodology and algorithms the ALSAS-10-U used during the SAR calculation was evaluated using the data from IEEE 1528 f3 algorithm:

$$f_3(x, y, z) = A \frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2} \left( e^{-\frac{2z}{a}} + \frac{a^2}{2(a + 2z)^2} \right)$$

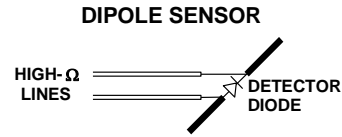
The probe used during the measurement process has been assessed to provide values for diode compression. These values are calculated during the probe calibration exercise and are used in the mathematical calculations for the assessment of SAR.

## E-Field Probe ALS-E-020

The E-field probe used by RF Exposure Lab, LLC, has been fully calibrated and assessed for isotropic, and boundary effect. The probe utilizes a triangular sensor arrangement as detailed in the diagram below right.



**Δ-BEAM**



The SAR is assessed with the probe which moves at a default height of 5mm from the center of the diode, which is mounted to the sensor, to the phantom surface (Z height). The diagram above right shows how the center of the sensor is defined with the location of the diode placed at the center of the dipole. The 5mm default in the Z axis is the optimum height for assessing SAR where the boundary effect is at its least, with the probe located closest to the phantom surface (boundary).

### 3. Robot Specifications

#### Specifications

Positioner: ThermoCRS, Robot Model: Robocomm 3  
Repeatability: 0.05 mm  
No. of axis: 6

#### Data Acquisition Card (DAC) System

##### Cell Controller

Processor: Pentium 4™  
Clock Speed: 2.66 GHz  
Operating System: Windows XP Pro™

##### Data Converter

Features: Signal Amplifier, End Effector, DAC  
Software: ALSAS 10-U Software

#### E-Field Probe

Model: ALS-E-020  
Serial Number: RFE-215  
Construction: Triangular Core Touch Detection System  
Frequency: 10MHz to 6GHz

#### Phantom

Phantom: Uniphantom, Right Phantom, Left Phantom



## 4. Probe and Dipole Calibration

See Appendix D and E.



## 5. Phantom & Simulating Tissue Specifications

### SAM Phantom



The Aprel system utilizes three separate phantoms. Each phantom for SAR assessment testing is a low loss dielectric shell, with shape and dimensions derived from the anthropomorphic data of the 90<sup>th</sup> percentile adult male head dimensions as tabulated by the US Army. The SAM phantom shell is bisected along the mid sagittal plane into right and left halves. The perimeter sidewalls of each phantom half is extended to allow filling with liquid to a depth of 15 cm that is sufficient to minimize reflections from the upper surface [5]. See photos in Appendix C.

### Brain & Muscle Simulating Mixture Characterization

The brain and muscle mixtures consist of a glycol based chemical and saline solution or a sugar and water based solution. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 have been incorporated in the following tables. Other head and body tissue parameters that have not been specified in P1528 are derived from the issue dielectric parameters computed from the 4-Cole-Cole equations.

**Table 5.1 Typical Composition of Ingredients for Tissue**

Ingredients		Simulating Tissue		
		2450 MHz Muscle	5250 MHz Muscle	5800 MHz Muscle
Mixing Percentage				
Water		73.20	58.85	59.00
DGBE		26.70	0.00	0.00
Sugar		0.00	41.00	40.6
Salt		0.04	0.00	0.00
Bacteriacide		0.00	0.05	0.10
HEC		0.00	0.10	0.30
Dielectric Constant	Target	52.70	48.96	48.20
Conductivity (S/m)	Target	1.95	5.35	6.00

### Device Holder

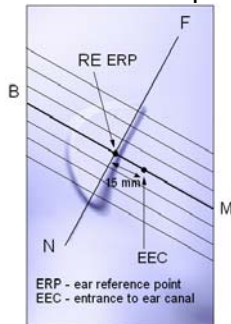


In combination with the SAM phantom, the mounting device enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation point is the ear opening. The devices can easily, accurately, and repeatably be positioned according to the FCC specifications. The device holder can be locked at different phantom locations (left head, right head, and uni-phantom).

## 6. Definition of Reference Points

### Ear Reference Point

Figure 6.2 shows the front, back and side views of the SAM Phantom. The point “M” is the reference point for the center of the mouth, “LE” is the left ear reference point (ERP), and “RE” is the right ERP. The ERPs are 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 6.1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front) is perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 6.1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].



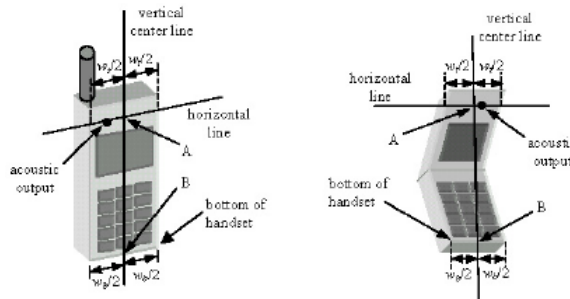
**Figure 6.1 Close-up side view of ERP's**



**Figure 6.2 Front, back and side view of SAM**

### Device Reference Points

Two imaginary lines on the device need to be established: the vertical centerline and the horizontal line. The test device is placed in a normal operating position with the “test device reference point” located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (See Fig. 6.3). The “test device reference point” is then located at the same level as the center of the ear reference point. The test device is positioned so that the “vertical centerline” is bisecting the front surface of the device at it’s top and bottom edges, positioning the “ear reference point” on the outer surface of both the left and right head phantoms on the ear reference point [5].

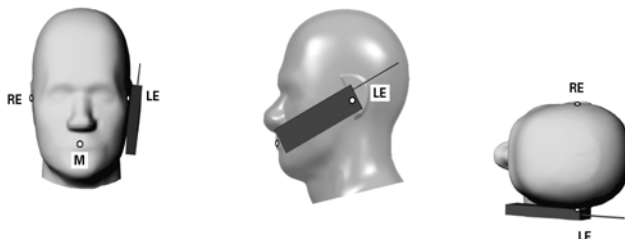


**Figure 6.3 Handset Vertical Center & Horizontal Line Reference Points**

## 7. Test Configuration Positions

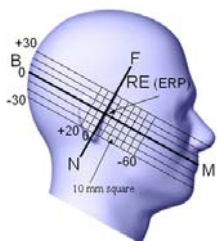
### Positioning for Cheek/Touch [5]

1. Position the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 7.1), such that the plane defined by the vertical center line and the horizontal line of the device is approximately parallel to the sagittal plane of the phantom.



**Figure 7.1 Front, Side and Top View of Cheek/Touch Position**

2. Translate the device towards the phantom along the line passing through RE and LE until the device touches the ear.
3. While maintaining the device in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to MB-NF including the line MB (called the reference plane).
4. Rotate the device around the vertical centerline until the device (horizontal line) is symmetrical with respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE and maintaining the device contact with the ear, rotate the device about the line NF until any point on the device is in contact with a phantom point below the ear (cheek). See Figure 7.2.



**Figure 7.2 Side view w/ relevant markings**

## Positioning for Ear / 15° Tilt [5]

With the test device aligned in the Cheek/Touch Position”:

1. While maintaining the orientation of the device, retracted the device parallel to the reference plane far enough to enable a rotation of the device by 15 degrees.
2. Rotate the device around the horizontal line by 15 degrees.
3. While maintaining the orientation of the device, move the device parallel to the reference plane until any part of the device touches the head. (In this position, point A is located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, the angle of the device shall be reduced. The tilted position is obtained when any part of the device is in contact with the ear as well as a second part of the device is in contact with the head (see Figure 7.3).



**Figure 7.3 Front, Side and Top View of Ear/15° Tilt Position**

## Body Worn Configurations

Body-worn operating configurations are tested with the accessories attached to the device and positioned against a flat phantom in a normal use configuration. A device with a headset output is tested with a headset connected to the device. Body dielectric parameters are used.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then, when multiple accessories that contain metallic components are supplied with the device, the device is tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (i.e. 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 is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration where a separation distance between the back of the device and the flat phantom is used. All test position spacings are documented.

Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessory(ies), including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

In all cases SAR measurements are performed to investigate the worst-case positioning. Worst-case positioning is then documented and used to perform Body SAR testing.

In order for users to be aware of the body-worn operating requirements for meeting RF exposure compliance, operating instructions and cautions statements are included in the user's manual.

## 8. ANSI/IEEE C95.1 – 1999 RF Exposure Limits [2]

### Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

### Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Table 8.1 Human Exposure Limits**

	UNCONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)	CONTROLLED ENVIROMENT Professional Population (W/kg) or (mW/g)
SPATIAL PEAK SAR <sup>1</sup> Brain	1.60	8.00
SPATIAL AVERAGE SAR <sup>2</sup> Whole Body	0.08	0.40
SPATIAL PEAK SAR <sup>3</sup> Hands, Feet, Ankles, Wrists	4.00	20.00

<sup>1</sup> The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

<sup>2</sup> The Spatial Average value of the SAR averaged over the whole body.

<sup>3</sup> The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

## 9. Measurement Uncertainty

### Exposure Assessment Measurement Uncertainty

Source of Uncertainty	Tolerance Value	Probability Distribution	Divisor	$c_i^{-1}$ (1-g)	$c_i^{-1}$ (10-g)	Standard Uncertainty (1-g) %	Standard Uncertainty (10-g) %
Measurement System							
Probe Calibration	3.5	normal	1	1	1	3.5	3.5
Axial Isotropy	3.7	rectangular	•3	$(1-cp)^{1/2}$	$(1-cp)^{1/2}$	1.5	1.5
Hemispherical Isotropy	10.9	rectangular	•3	•cp	•cp	4.4	4.4
Boundary Effect	1.0	rectangular	•3	1	1	0.6	0.6
Linearity	4.7	rectangular	•3	1	1	2.7	2.7
Detection Limit	1.0	rectangular	•3	1	1	0.6	0.6
Readout Electronics	1.0	normal	1	1	1	1.0	1.0
Response Time	0.8	rectangular	•3	1	1	0.5	0.5
Integration Time	1.7	rectangular	•3	1	1	1.0	1.0
RF Ambient Condition	3.0	rectangular	•3	1	1	1.7	1.7
Probe Positioner Mech.	0.4	rectangular	•3	1	1	0.2	0.2
Restriction							
Probe Positioning with respect to Phantom Shell	2.9	rectangular	•3	1	1	1.7	1.7
Extrapolation and Integration	3.7	rectangular	•3	1	1	2.1	2.1
Test Sample Positioning	4.0	normal	1	1	1	4.0	4.0
Device Holder Uncertainty	2.0	normal	1	1	1	2.0	2.0
Drift of Output Power	4.2	rectangular	•3	1	1	2.4	2.4
Phantom and Setup							
Phantom Uncertainty(shape & thickness tolerance)	3.4	rectangular	•3	1	1	2.0	2.0
Liquid Conductivity(target)	5.0	rectangular	•3	0.7	0.5	2.0	1.4
Liquid Conductivity(meas.)	0.0	normal	1	0.7	0.5	0.0	0.0
Liquid Permittivity(target)	5.0	rectangular	•3	0.6	0.5	1.7	1.4
Liquid Permittivity(meas.)	1.9	normal	1	0.6	0.5	1.1	0.9
Combined Uncertainty		RSS				9.6	9.4
Combined Uncertainty (coverage factor=2)		Normal (k=2)				19.2	18.9

## 10. System Validation

### Tissue Verification

**Table 10.1 Measured Tissue Parameters**

Date(s)		March 21, 2006		March 22, 2006		March 17, 2006	
		2450 MHz Body		2450 MHz Body		5200 MHz Body	
Liquid Temperature (°C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: $\epsilon$		52.70	51.93	52.70	53.11	48.96	49.06
Conductivity: $\sigma$		1.95	1.96	1.95	1.97	5.35	5.56

Date(s)		March 20, 2006		May 22, 2006	
		5800 MHz Body		5800 MHz Body	
Liquid Temperature (°C)	20.0	Target	Measured	Target	Measured
Dielectric Constant: $\epsilon$		48.25	48.78	48.25	47.61
Conductivity: $\sigma$		5.96	5.83	5.96	5.68

See Appendix A for data printout.



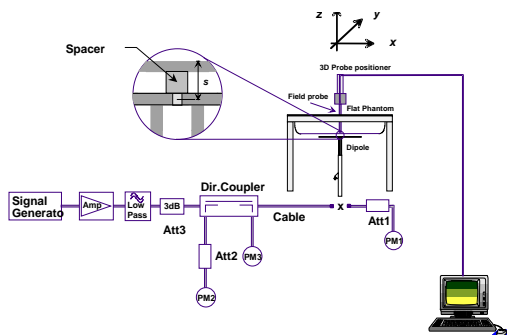
### Test System Verification

Prior to assessment, the system is verified to the  $\pm 10\%$  of the specifications at 2450 MHz, 5250 MHz, and 5800 MHz by using the system kit. Power is extrapolated to 1 watt. (Graphic Plots Attached)

**Table 10.2 System Dipole Validation Target & Measured**

System Validation Kit: ALS-D-2450-S-2 S/N: RFE-278	March 21, 2006	2450 MHz Body	Targeted SAR <sub>1g</sub> (W/kg) 52.4	Measure SAR <sub>1g</sub> (W/kg) 55.23	Deviation (%) +5.40
System Validation Kit: ALS-D-2450-S-2 S/N: RFE-278	March 22, 2006	2450 MHz Body	Targeted SAR <sub>1g</sub> (W/kg) 52.4	Measure SAR <sub>1g</sub> (W/kg) 53.79	Deviation (%) +2.65
System Validation Kit: ALS-D-2450-S-2 S/N: RFE-278	March 17, 2006	5200 MHz Body	Targeted SAR <sub>1g</sub> (W/kg) 62.9	Measure SAR <sub>1g</sub> (W/kg) 65.12	Deviation (%) +3.53
System Validation Kit: ALS-D-2450-S-2 S/N: RFE-278	March 20, 2006	5800 MHz Body	Targeted SAR <sub>1g</sub> (W/kg) 58.3	Measure SAR <sub>1g</sub> (W/kg) 61.72	Deviation (%) +5.87
System Validation Kit: ALS-D-2450-S-2 S/N: RFE-278	May 22, 2006	5800 MHz Body	Targeted SAR <sub>1g</sub> (W/kg) 58.3	Measure SAR <sub>1g</sub> (W/kg) 58.10	Deviation (%) -0.34

See Appendix A for data plots.



**Figure 10.1 Dipole Validation Test Setup**

## **11. SAR Test Data Summary**

### **See Measurement Result Data Pages**

See Appendix B for SAR Test Data Plots.  
See Appendix C for SAR Test Setup Photos.

### **Procedures Used To Establish Test Signal**

The device was placed into simulated transmit mode using the manufacturer's test codes. Such test signals offer a consistent means for testing SAR and are recommended for evaluating SAR. When test modes are not available or inappropriate for testing a device, the actual transmission is activated through a base station simulator or similar equipment. See data pages for actual procedure used in measurement.

### **Device Test Condition**

The device is battery operated. Each SAR measurement was taken with a fully charged battery. The unit was required to be disassembled to measure the conducted power. To insure that the integrity of the device was not compromised, the power measurements were conducted at the completion of all testing.

## SAR Data Summary – 2450 MHz Body – 11b

MEASUREMENT RESULTS								
Position	Antenna	EUT Position	Frequency		Modulation	End of Test Power		SAR (W/kg)
			MHz	Ch.		(dBm)	Battery	
Touch	Main	Side	2412	1	DSSS/OFDM	18.01	Standard	0.540
			2437	6	DSSS/OFDM	18.59	Standard	0.813
			2462	11	DSSS/OFDM	18.71	Standard	0.562
	Aux	Side	2412	1	DSSS/OFDM	18.50	Standard	1.100
			2437	6	DSSS/OFDM	18.49	Standard	1.493
			2462	11	DSSS/OFDM	19.07	Standard	1.355
	Main	Bottom	2437	6	DSSS/OFDM	18.59	Standard	0.073
	Aux	Bottom	2437	6	DSSS/OFDM	18.49	Standard	0.349
	Main	Top	2437	6	DSSS/OFDM	18.59	Standard	0.107
	Aux	Top	2437	6	DSSS/OFDM	18.49	Standard	1.142
Main w/BT	Side	2437	6	DSSS/OFDM	18.59	Standard	0.844	
Aux w/BT	Side	2437	6	DSSS/OFDM	18.49	Standard	1.550	

**Body**  
**1.6 W/kg (mW/g)**  
averaged over 1 gram

1. Battery is fully charged for all tests.  
 Power Measured       Conducted       ERP       EIRP
2. SAR Measurement  
 Phantom Configuration       Left Head       Uniphantom       Right Head  
 SAR Configuration       Head       Body
3. Test Signal Call Mode       Test Code       Base Station Simulator
4. Test Configuration       With Belt Clip       Without Belt Clip       N/A



Jay M. Moulton  
Vice President

**SAR Data Summary – 2450 MHz Body – 11g**

MEASUREMENT RESULTS								
Position	Antenna	EUT Position	Frequency		Modulation	End of Test Power		SAR (W/kg)
			MHz	Ch.		(dBm)	Battery	
Touch	Main	Side	2412	1	DSSS/OFDM	17.98	Standard	0.480
			2437	6	DSSS/OFDM	18.87	Standard	0.317
			2462	11	DSSS/OFDM	18.17	Standard	0.598
	Aux	Side	2412	1	DSSS/OFDM	18.28	Standard	1.168
			2437	6	DSSS/OFDM	18.82	Standard	1.376
			2462	11	DSSS/OFDM	18.37	Standard	1.345
	Main	Bottom	2462	11	DSSS/OFDM	18.17	Standard	0.224
	Aux	Bottom	2437	6	DSSS/OFDM	18.82	Standard	0.458
	Main	Top	2462	11	DSSS/OFDM	18.17	Standard	0.122
	Aux	Top	2437	6	DSSS/OFDM	18.82	Standard	1.115
Main w/BT	Side	2462	11	DSSS/OFDM	18.17	Standard	0.456	
Aux w/BT	Side	2437	6	DSSS/OFDM	18.82	Standard	1.553	

**Body**  
**1.6 W/kg (mW/g)**  
averaged over 1 gram

1. Battery is fully charged for all tests.  
 Power Measured  Conducted  ERP  EIRP
2. SAR Measurement  
 Phantom Configuration  Left Head  Uniphantom  Right Head  
 SAR Configuration  Head  Body
3. Test Signal Call Mode  Test Code  Base Station Simulator
4. Test Configuration  With Belt Clip  Without Belt Clip  N/A



Jay M. Moulton  
 Vice President

**SAR Data Summary – 5210 MHz Body – 11a**

MEASUREMENT RESULTS								
Position	Antenna	EUT Position	Frequency		Modulation	End of Test Power		SAR (W/kg)
			MHz	Ch.		(dBm)	Battery	
Touch	Main	Side	5180	36	OFDM	17.12	Standard	0.967
			5210	42	OFDM	17.09	Standard	0.839
			5240	48	OFDM	17.03	Standard	0.760
	Aux	Side	5180	36	OFDM	17.25	Standard	1.003
			5210	42	OFDM	17.06	Standard	0.987
			5240	48	OFDM	16.57	Standard	0.946
	Main	Bottom	5180	36	OFDM	17.12	Standard	0.418
	Aux	Bottom	5180	36	OFDM	17.25	Standard	0.492
	Main	Top	5180	36	OFDM	17.12	Standard	0.448
	Aux	Top	5180	36	OFDM	17.25	Standard	0.980
	Main w/BT	Side	5180	36	OFDM	17.12	Standard	0.701
	Aux w/BT	Side	5180	36	OFDM	17.25	Standard	1.008

**Body**  
**1.6 W/kg (mW/g)**  
averaged over 1 gram

1. Battery is fully charged for all tests.  
 Power Measured  Conducted  ERP  EIRP
2. SAR Measurement  
 Phantom Configuration  Left Head  Uniphantom  Right Head  
 SAR Configuration  Head  Body
3. Test Signal Call Mode  Test Code  Base Station Simulator
4. Test Configuration  With Belt Clip  Without Belt Clip  N/A



Jay M. Moulton  
 Vice President

**SAR Data Summary – 5290 MHz Body – 11a**

MEASUREMENT RESULTS								
Position	Antenna	EUT Position	Frequency		Modulation	End of Test Power		SAR (W/kg)
			MHz	Ch.		(dBm)	Battery	
Touch	Main	Side	5260	52	OFDM	17.34	Standard	0.740
			5290	58	OFDM	16.76	Standard	0.721
			5320	64	OFDM	16.70	Standard	0.732
	Aux	Side	5260	52	OFDM	16.70	Standard	1.253
			5290	58	OFDM	16.10	Standard	1.171
			5320	64	OFDM	15.98	Standard	1.056
	Main	Bottom	5260	52	OFDM	17.34	Standard	0.363
	Aux	Bottom	5260	52	OFDM	16.70	Standard	0.590
	Main	Top	5260	52	OFDM	17.34	Standard	0.398
	Aux	Top	5260	52	OFDM	16.70	Standard	0.963
	Main w/BT	Side	5260	52	OFDM	17.34	Standard	0.737
	Aux w/BT	Side	5260	52	OFDM	16.70	Standard	1.385

**Body**  
**1.6 W/kg (mW/g)**  
averaged over 1 gram

1. Battery is fully charged for all tests.  
 Power Measured  Conducted  ERP  EIRP
2. SAR Measurement  
 Phantom Configuration  Left Head  Uniphantom  Right Head  
 SAR Configuration  Head  Body
3. Test Signal Call Mode  Test Code  Base Station Simulator
4. Test Configuration  With Belt Clip  Without Belt Clip  N/A



Jay M. Moulton  
 Vice President

**SAR Data Summary – 5800 MHz Body – 11a**

MEASUREMENT RESULTS								
Position	Antenna	EUT Position	Frequency		Modulation	End of Test Power		SAR (W/kg)
			MHz	Ch.		(dBm)	Battery	
Touch	Main	Side	5745	149	OFDM	16.64	Standard	1.113
			5765	153	OFDM	16.52	Standard	1.400
			5805	161	OFDM	15.78	Standard	1.309
			5825	165	OFDM	15.72	Standard	1.058
	Aux	Side	5745	149	OFDM	16.60	Standard	1.427
			5765	153	OFDM	16.11	Standard	1.461
			5805	161	OFDM	15.59	Standard	1.482
			5825	165	OFDM	15.61	Standard	1.203
	Main	Bottom	5765	153	OFDM	16.52	Standard	0.516
	Aux	Bottom	5765	153	OFDM	16.11	Standard	0.426
	Main	Top	5765	153	OFDM	16.52	Standard	0.432
	Aux	Top	5765	153	OFDM	16.11	Standard	0.384
	Main w/BT	Side	5765	153	OFDM	16.52	Standard	1.486
Aux w/BT	Side	5765	153	OFDM	16.11	Standard	1.262	

**Body**  
**1.6 W/kg (mW/g)**  
averaged over 1 gram

1. Battery is fully charged for all tests.  
 Power Measured  Conducted  ERP  EIRP
2. SAR Measurement  
 Phantom Configuration  Left Head  Uniphantom  Right Head  
 SAR Configuration  Head  Body
3. Test Signal Call Mode  Test Code  Base Station Simulator
4. Test Configuration  With Belt Clip  Without Belt Clip  N/A



Jay M. Moulton  
Vice President

## 12. Test Equipment List

**Table 12.1 Equipment Specifications**

Type	Calibration Due Date	Serial Number
ThermoCRS Robot	N/A	RAF0338198
ThermoCRS Controller	N/A	RCF0338224
ThermoCRS Teach Pendant (Joystick)	N/A	STP0334405
IBM Computer, 2.66 MHz P4	N/A	8189D8U KCPR08N
Aprel E-Field Probe ALS-E020	06/10/2006	RFE-215
Aprel Dummy Probe	N/A	023
Aprel Left Phantom	N/A	RFE-267
Aprel Right Phantom	N/A	RFE-268
Aprel UniPhantom	N/A	RFE-273
Aprel Validation Dipole ALS-D-450-S-2	01/12/2007	RFE-362
Aprel Validation Dipole ALS-D-835-S-2	02/16/2008	RFE-274
Aprel Validation Dipole ALS-D-1900-S-2	02/15/2008	RFE-277
Aprel Validation Dipole ALS-D-2450-S-2	02/17/2008	RFE-278
Aprel Validation Dipole ALS-D-BB-S-2	05/24/2007	5258-235-00801
Agilent (HP) 437B Power Meter	12/12/2006	3125U08837
Agilent (HP) 8481B Power Sensor	12/19/2006	3318A05384
Advantest R3261A Spectrum Analyzer	12/13/2006	31720068
Agilent (HP) 8350B Signal Generator	02/23/2007	2749A10226
Agilent (HP) 83525A RF Plug-In	02/23/2007	2647A01172
Agilent (HP) 8753C Vector Network Analyzer	02/02/2007	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	02/02/2007	2904A00595
Aprel Dielectric Probe Assembly	N/A	0011
Microwave Power Devices 510-10E Amplifier	02/23/2007	6063-001
Microwave Power Devices 1020-9E Amplifier	02/23/2007	5618-1
Brain Equivalent Matter (450 MHz)	N/A	N/A
Brain Equivalent Matter (835 MHz)	N/A	N/A
Brain Equivalent Matter (1900 MHz)	N/A	N/A
Brain Equivalent Matter (2450 MHz)	N/A	N/A
Muscle Equivalent Matter (450 MHz)	N/A	N/A
Muscle Equivalent Matter (835 MHz)	N/A	N/A
Muscle Equivalent Matter (1900 MHz)	N/A	N/A
Muscle Equivalent Matter (2450 MHz)	N/A	N/A
Muscle Equivalent Matter (5200 MHz)	N/A	N/A
Muscle Equivalent Matter (5800 MHz)	N/A	N/A



## 13. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC. These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The tested device complies with the requirements in respect to all parameters subject to the test. The test results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body is a very complex phenomena that depends on the mass, shape, and size of the body; the orientation of the body with respect to the field vectors; and, the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because innumerable factors may interact to determine the specific biological outcome of an exposure to electromagnetic fields, any protection guide shall consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

## 14. References

- [1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation, August 1996
- [2] ANSI/IEEE C95.1 – 1999, American National Standard Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300kHz to 100GHz, New York: IEEE, 1992.
- [3] ANSI/IEEE C95.3 – 2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave, New York: IEEE, 1992.
- [4] Federal Communications Commission, OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields, July 2001.
- [5] IEEE Standard 1528 – 2003, IEEE Recommended Practice for Determining the Peak-Spatial Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques, October 2003.
- [6] Industry Canada, RSS – 102e, Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), November 2005.
- [7] Industry Canada, Safety Code 6, Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz, 1999.

## Appendix A – System Validation Plots and Data

```

*****
Test Result for UIM Dielectric Parameter
Tue 21/Mar/2006 10:17:51
Freq  Frequency(GHz)
FCC_eH      FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH      FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB      FCC Limits for Body Epsilon
FCC_sB      FCC Limits for Body Sigma
Test_e      Epsilon of UIM
Test_s      Sigma of UIM
*****

```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
2.4200	52.74	1.92	52.18	1.91
2.4300	52.73	1.93	52.07	1.93
2.4400	52.71	1.94	52.05	1.96
2.4500	52.70	1.95	51.93	1.96
2.4600	52.69	1.96	51.91	1.98
2.4700	52.67	1.98	51.89	2.00
2.4800	52.66	1.99	51.87	1.99

```

*****
Test Result for UIM Dielectric Parameter
Wed 22/Mar/2006 07:59:18
Freq  Frequency(GHz)
FCC_eH      FCC Bulletin 65 Supplement C ( June 2001) Limits for Head Epsilon
FCC_sH      FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB      FCC Limits for Body Epsilon
FCC_sB      FCC Limits for Body Sigma
Test_e      Epsilon of UIM
Test_s      Sigma of UIM
*****

```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
2.4200	52.74	1.92	52.84	1.95
2.4300	52.73	1.93	52.92	1.96
2.4400	52.71	1.94	52.91	1.98
2.4500	52.70	1.95	53.11	1.97
2.4600	52.69	1.96	53.20	2.00
2.4700	52.67	1.98	53.22	2.02
2.4800	52.66	1.99	53.37	2.05

\*\*\*\*\*

Test Result for UIM Dielectric Parameter

Fri 17/Mar/2006 08:05:48

Freq Frequency(GHz)

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

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

FCC\_eB FCC Limits for Body Epsilon

FCC\_sB FCC Limits for Body Sigma

Test\_e Epsilon of UIM

Test\_s Sigma of UIM

\*\*\*\*\*

Freq	FCC_eB	FCC_sB	Test_e	Test_s
5.2200	48.99	5.32	48.58	5.54
5.2300	48.97	5.33	48.78	5.54
5.2400	48.96	5.35	48.98	5.55
5.2500	48.95	5.36	49.06	5.56
5.2600	48.93	5.37	49.11	5.57
5.2700	48.92	5.38	49.21	5.59
5.2800	48.91	5.39	49.27	5.60

\*\*\*\*\*

Test Result for UIM Dielectric Parameter

Mon 20/Mar/2006 08:10:36

Freq Frequency(GHz)

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

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

FCC\_eB FCC Limits for Body Epsilon

FCC\_sB FCC Limits for Body Sigma

Test\_e Epsilon of UIM

Test\_s Sigma of UIM

\*\*\*\*\*

Freq	FCC_eB	FCC_sB	Test_e	Test_s
5.7450	48.27	5.94	48.89	5.81
5.7550	48.26	5.95	48.86	5.81
5.7650	48.25	5.96	48.78	5.83
5.7750	48.23	5.97	48.70	5.86
5.7850	48.22	5.98	48.67	5.88
5.7950	48.21	5.99	48.65	5.92
5.8050	48.19	6.01	48.61	5.93

\*\*\*\*\*

Test Result for UIM Dielectric Parameter

Mon 22/May/2006 09:15:02

Freq Frequency(GHz)

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

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

FCC\_eB FCC Limits for Body Epsilon

FCC\_sB FCC Limits for Body Sigma

Test\_e Epsilon of UIM

Test\_s Sigma of UIM

\*\*\*\*\*

Freq	FCC_eB	FCC_sB	Test_e	Test_s
5.6850	48.36	5.87	48.22	5.60
5.7050	48.33	5.89	48.06	5.61
5.7250	48.30	5.91	47.96	5.65
5.7450	48.27	5.94	47.73	5.65
5.7650	48.25	5.96	47.61	5.68
5.7850	48.22	5.98	47.61	5.70
5.8050	48.19	6.01	47.54	5.73
5.8250	48.17	6.03	47.52	5.74
5.8450	48.14	6.05	47.52	5.75
5.8650	48.11	6.08	47.48	5.79

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 10:47:43 AM  
End Time : 21-Mar-2006 11:00:52 AM  
Scanning Time : 789 secs

### Product Data

Device Name : Validation  
Serial No. : 2450  
Type : Dipole  
Model : ALS-D-2450-S-2  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.1 W  
Drift Time : 0 min(s)  
Length : 51.5 mm  
Width : 3.6 mm  
Depth : 30.4 mm  
Antenna Type : Internal  
Orientation : Touch  
Power Drift-Start : 2.833 W/kg  
Power Drift-Finish: 2.872 W/kg  
Power Drift (%) : 1.370

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

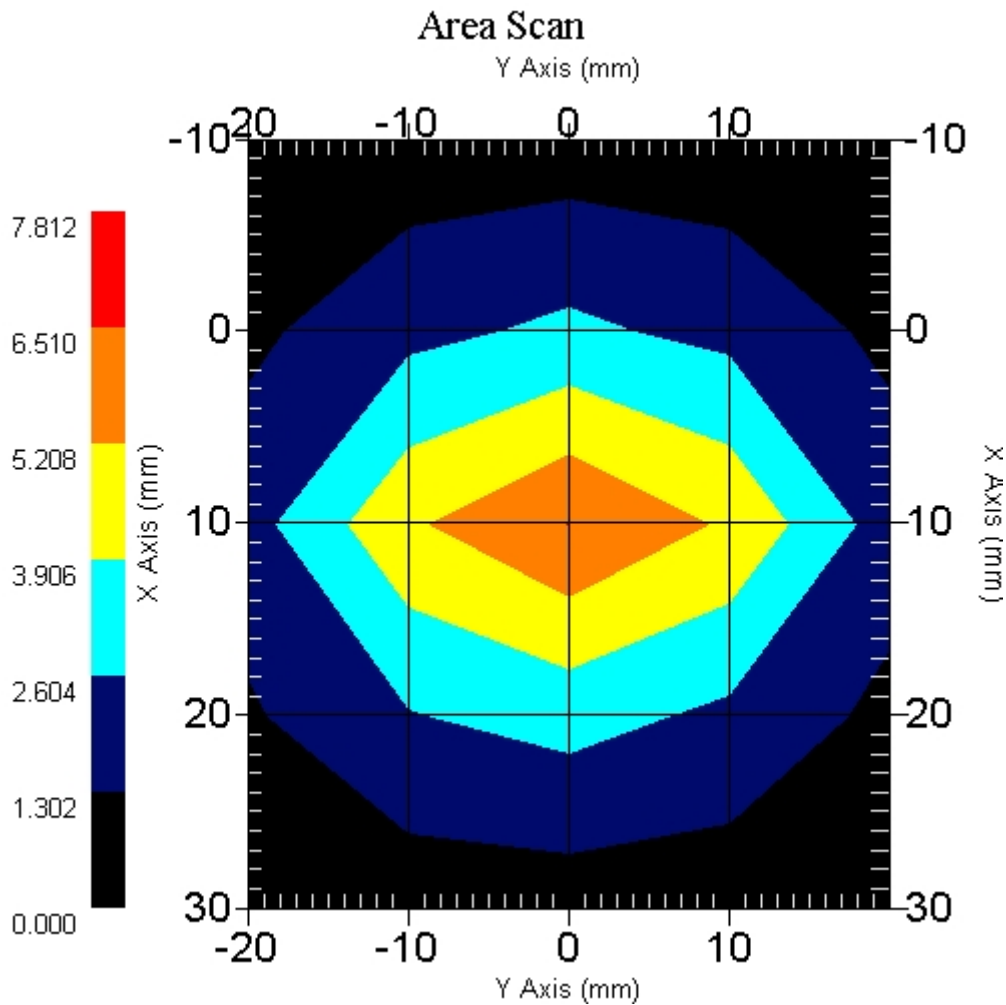
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 8:45:11 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

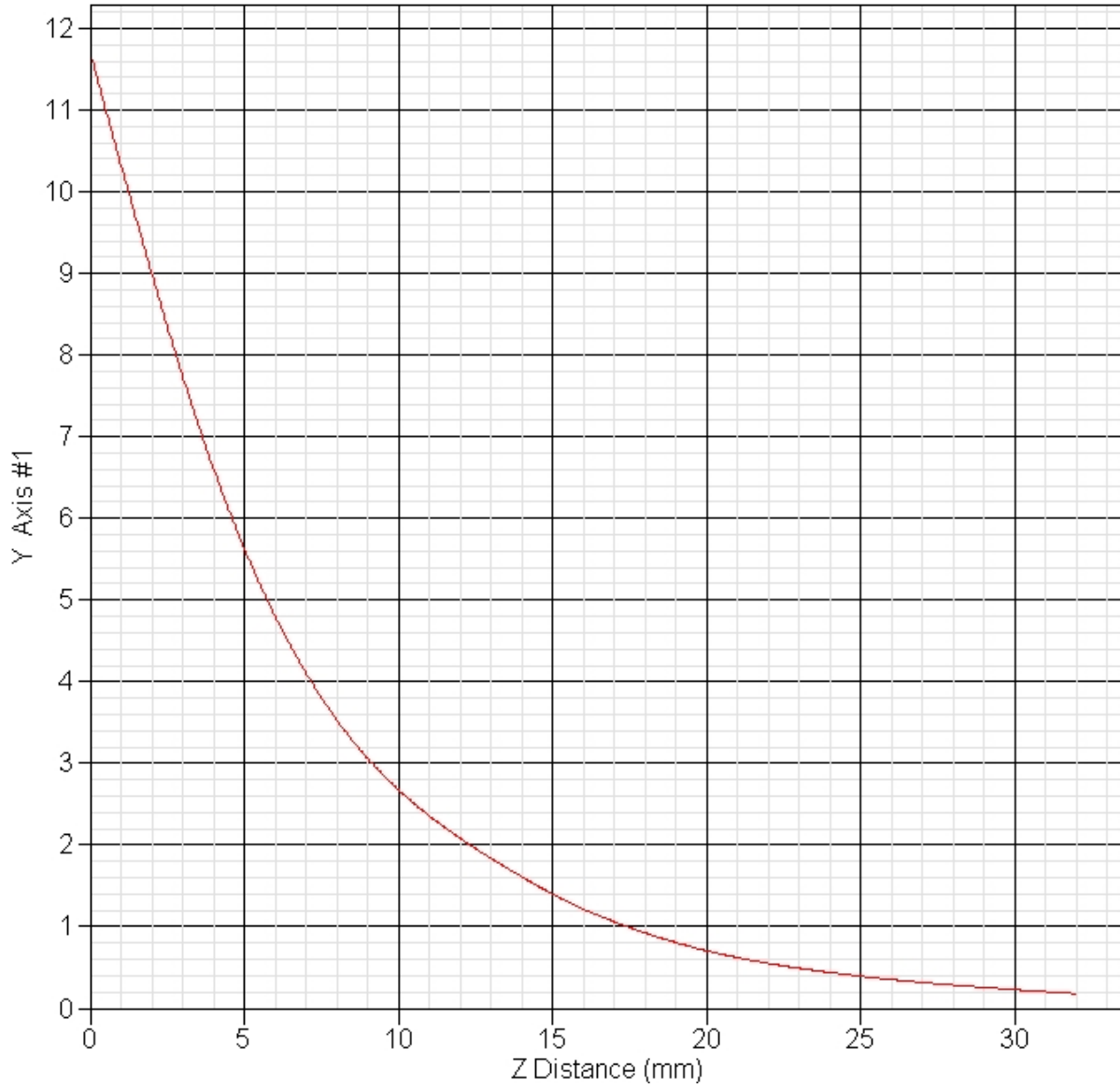
Other Data

DUT Position : Touch  
 Separation : 10  
 Channel : Mid - 2450



1 gram SAR value : 5.523 W/kg  
 10 gram SAR value : 2.472 W/kg  
 Area Scan Peak SAR : 6.512 W/kg  
 Zoom Scan Peak SAR : 11.710 W/kg

### SAR-Z Axis at Hotspot x:10.30 y:-2.30





## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 08:09:11 AM  
End Time : 22-Mar-2006 08:22:45 AM  
Scanning Time : 814 secs

### Product Data

Device Name : Validation  
Serial No. : 2450  
Type : Dipole  
Model : ALS-D-2450-S-2  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.1 W  
Drift Time : 0 min(s)  
Length : 51.5 mm  
Width : 3.6 mm  
Depth : 30.4 mm  
Antenna Type : Internal  
Orientation : Touch  
Power Drift-Start : 2.588 W/kg  
Power Drift-Finish: 2.715 W/kg  
Power Drift (%) : 4.892

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

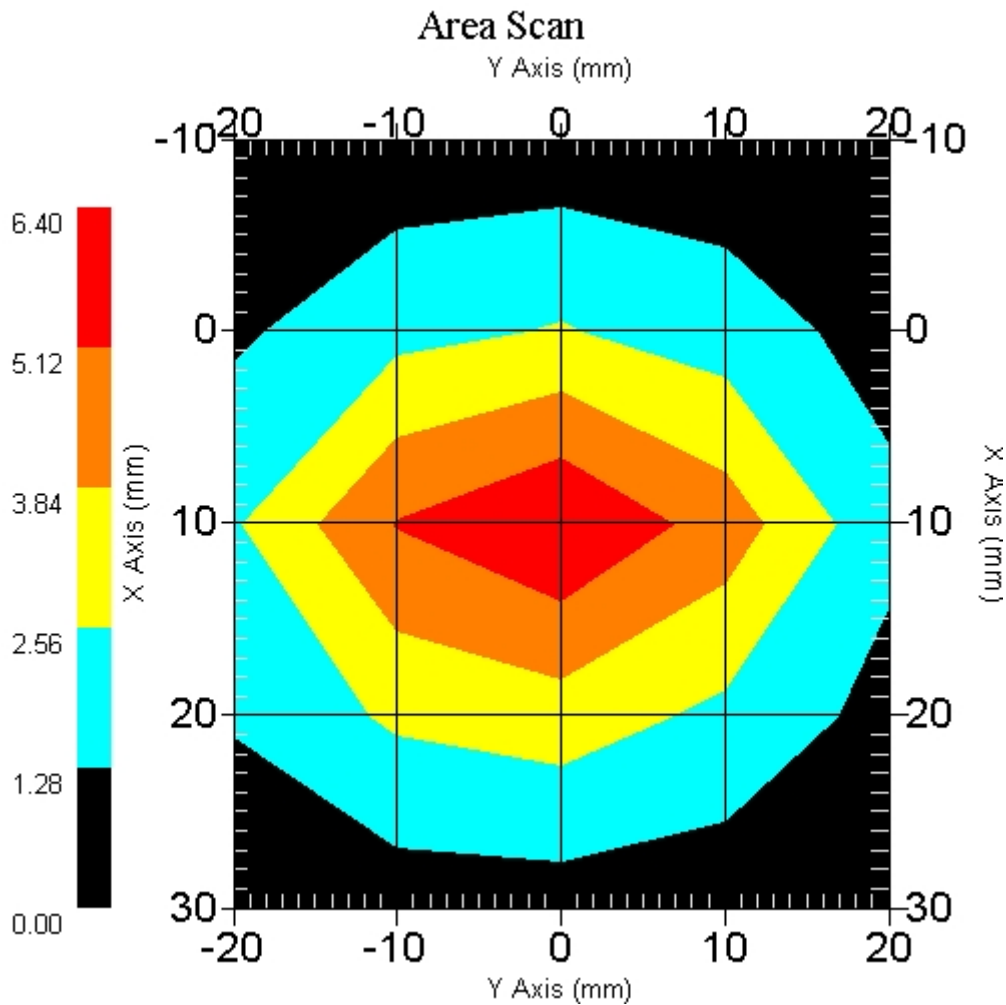
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 8:09:06 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

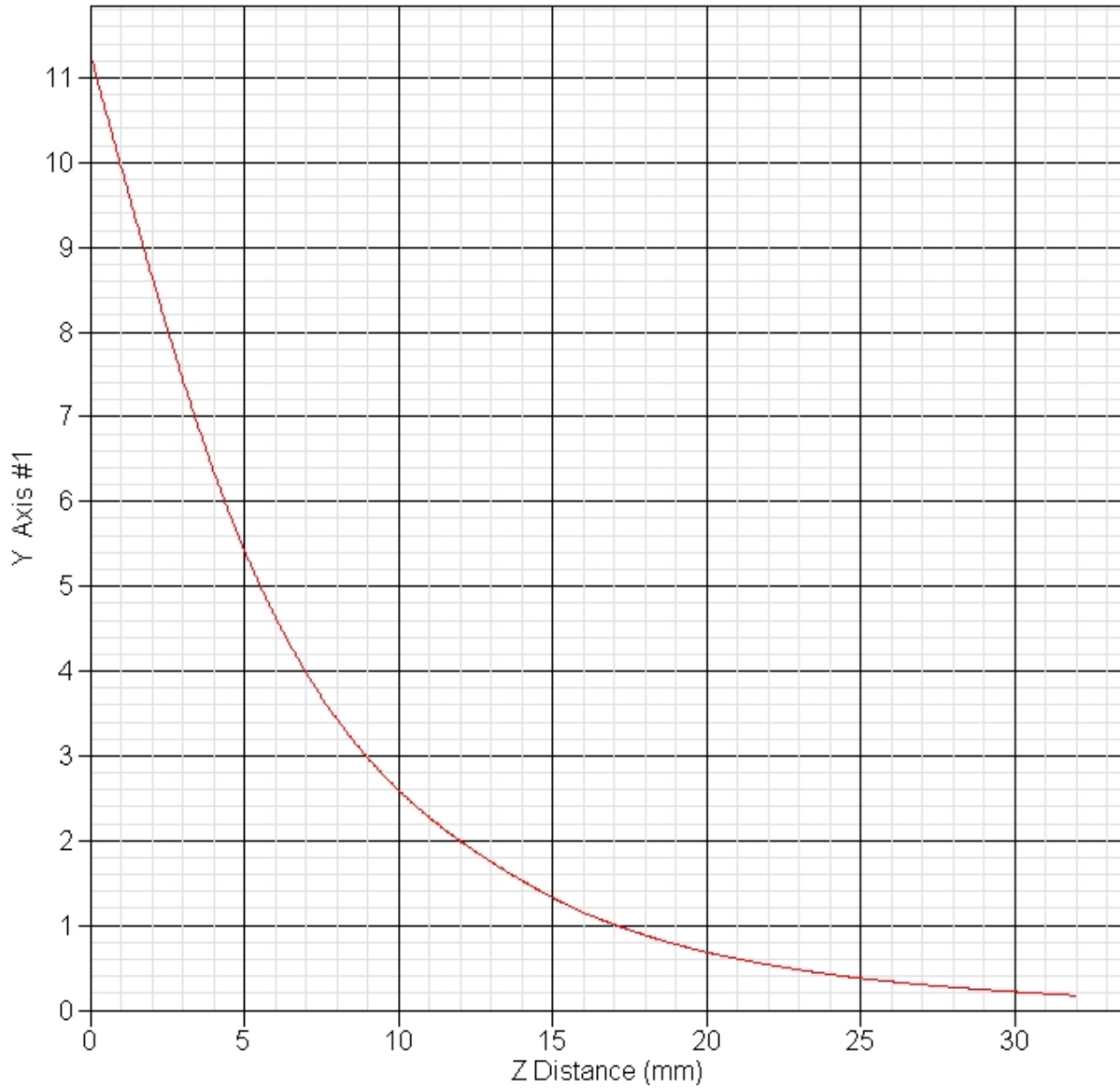
Other Data

DUT Position : Touch  
 Separation : 10  
 Channel : Mid - 2450



1 gram SAR value : 5.379 W/kg  
 10 gram SAR value : 2.422 W/kg  
 Area Scan Peak SAR : 6.398 W/kg  
 Zoom Scan Peak SAR : 11.290 W/kg

**SAR-Z Axis**  
at Hotspot x:10.40 y:-2.30



## SAR Test Report

By Operator : Jay  
Measurement Date : 17-Mar-2006  
Starting Time : 17-Mar-2006 08:17:16 AM  
End Time : 17-Mar-2006 08:30:29 AM  
Scanning Time : 793 secs

### Product Data

Device Name : Validation  
Serial No. : 5200  
Type : Dipole  
Model : ALS-D-BB-S-2  
Frequency : 5200.00 MHz  
Max. Transmit Pwr : 0.1 W  
Drift Time : 0 min(s)  
Length : 23.1 mm  
Width : 3.6 mm  
Depth : 20.7 mm  
Antenna Type : Internal  
Orientation : Touch  
Power Drift-Start : 2.004 W/kg  
Power Drift-Finish: 1.967 W/kg  
Power Drift (%) : -1.822

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 5200  
Frequency : 5200.00 MHz  
Last Calib. Date : 17-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 40.00 RH%  
Epsilon : 49.06 F/m  
Sigma : 5.56 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

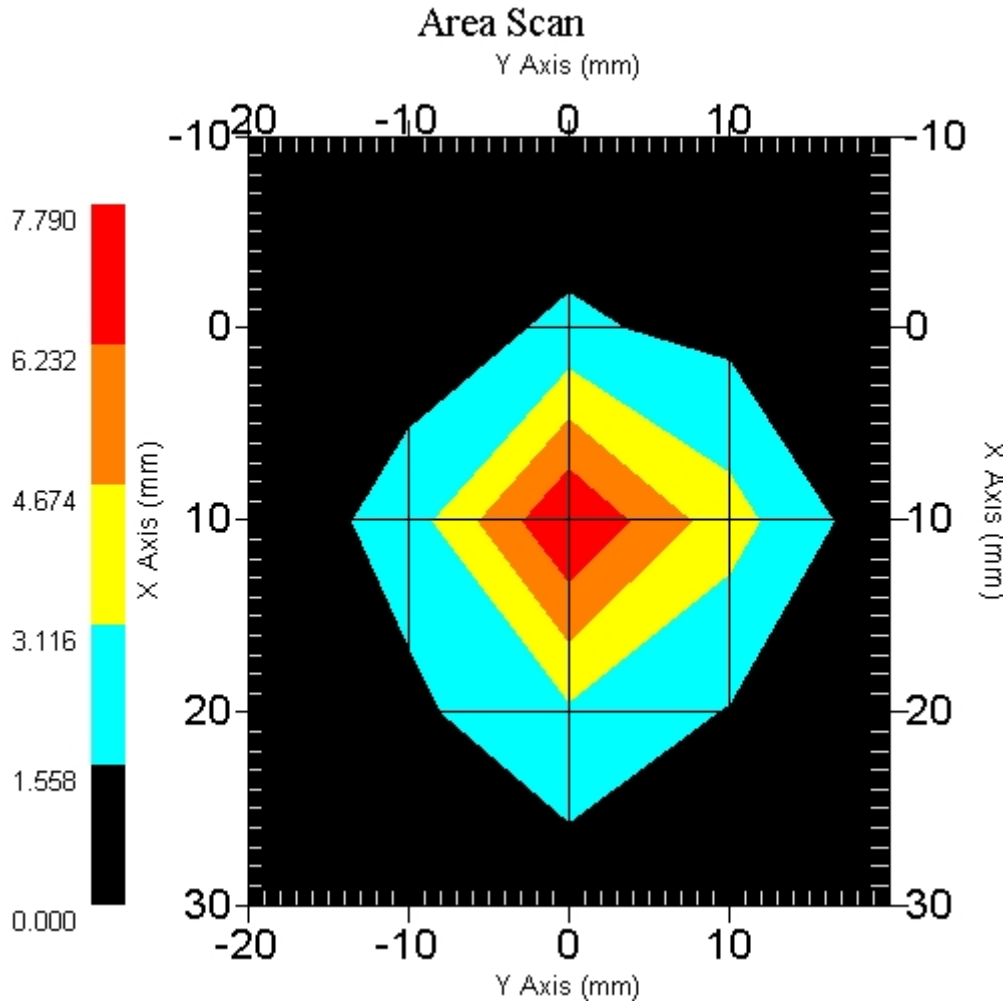
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 5200.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 2.8  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 17-Mar-2006  
 Set-up Time : 8:37:52 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

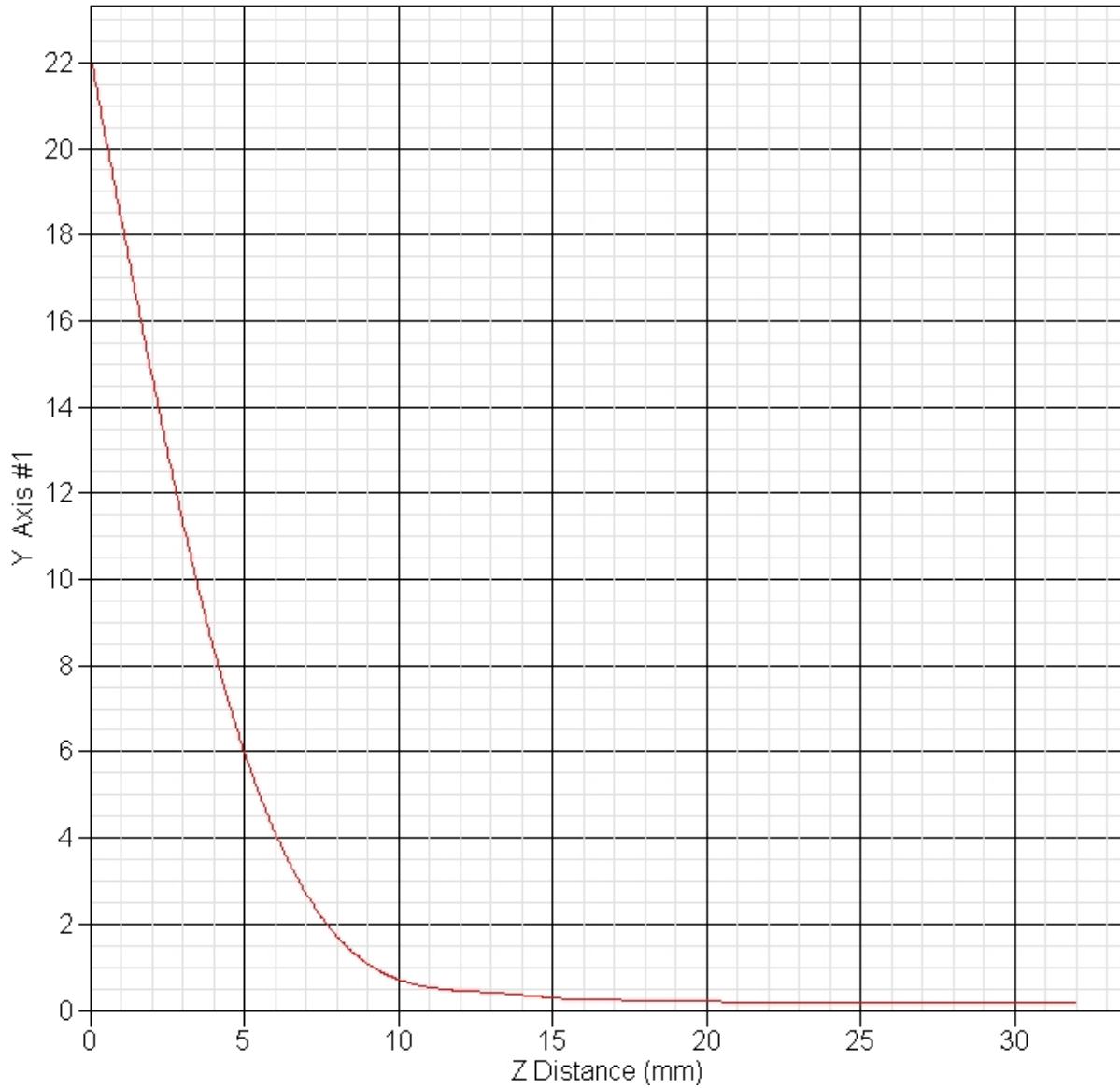
Other Data

DUT Position : Touch  
 Separation : 10  
 Channel : Mid - 5200



1 gram SAR value : 6.512 W/kg  
 10 gram SAR value : 1.997 W/kg  
 Area Scan Peak SAR : 7.789 W/kg  
 Zoom Scan Peak SAR : 22.217 W/kg

### SAR-Z Axis at Hotspot x:10.40 y:-2.40



## SAR Test Report

By Operator : Jay  
Measurement Date : 20-Mar-2006  
Starting Time : 20-Mar-2006 09:05:21 AM  
End Time : 20-Mar-2006 09:18:26 AM  
Scanning Time : 785 secs

### Product Data

Device Name : Validation  
Serial No. : 5800  
Type : Dipole  
Model : ALS-D-BB-S-2  
Frequency : 5800.00 MHz  
Max. Transmit Pwr : 0.1 W  
Drift Time : 0 min(s)  
Length : 23.1 mm  
Width : 3.6 mm  
Depth : 20.7 mm  
Antenna Type : Internal  
Orientation : Touch  
Power Drift-Start : 7.153 W/kg  
Power Drift-Finish: 7.113 W/kg  
Power Drift (%) : -0.553

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 5800  
Frequency : 5765.00 MHz  
Last Calib. Date : 20-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 21.00 °C  
Humidity : 45.00 RH%  
Epsilon : 48.78 F/m  
Sigma : 5.83 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

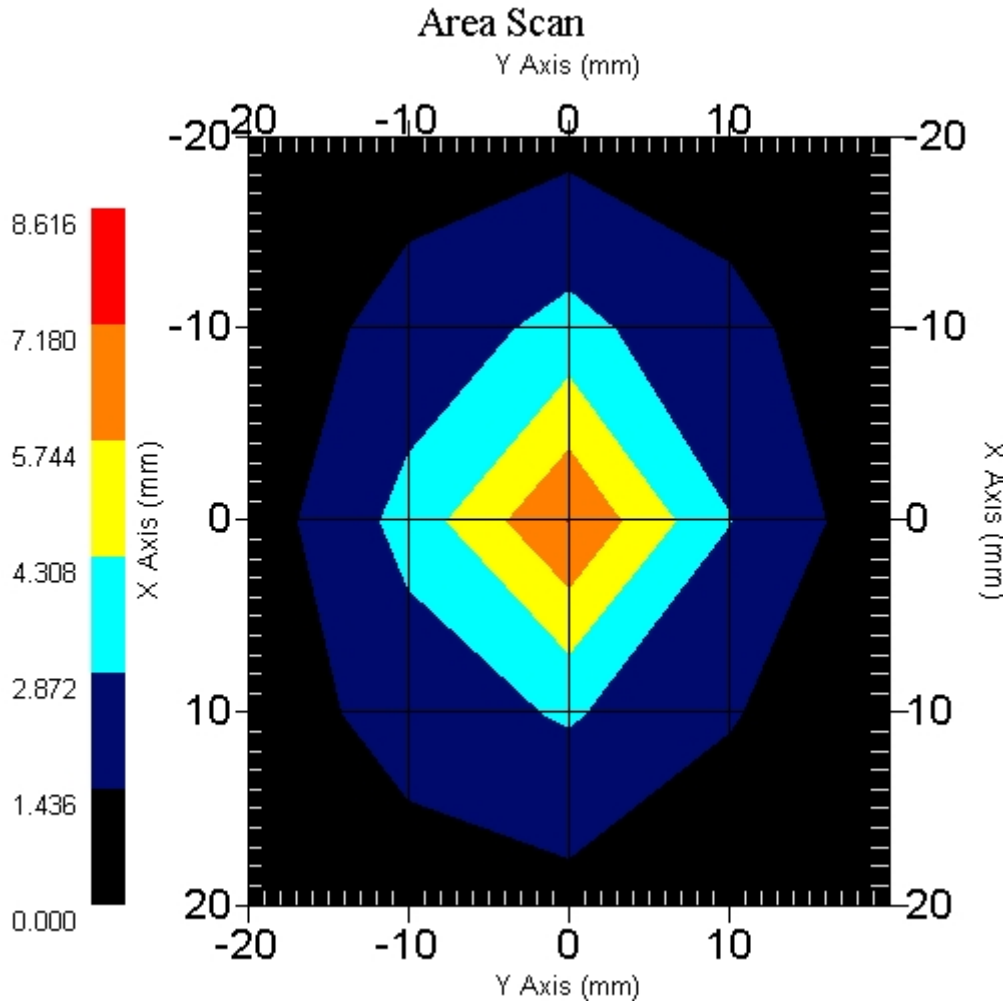
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 5800.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 2.1  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
Scan Type : Complete  
Tissue Temp. : 20.00 °C  
Ambient Temp. : 21.00 °C  
Set-up Date : 20-Mar-2006  
Set-up Time : 11:11:37 AM  
Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

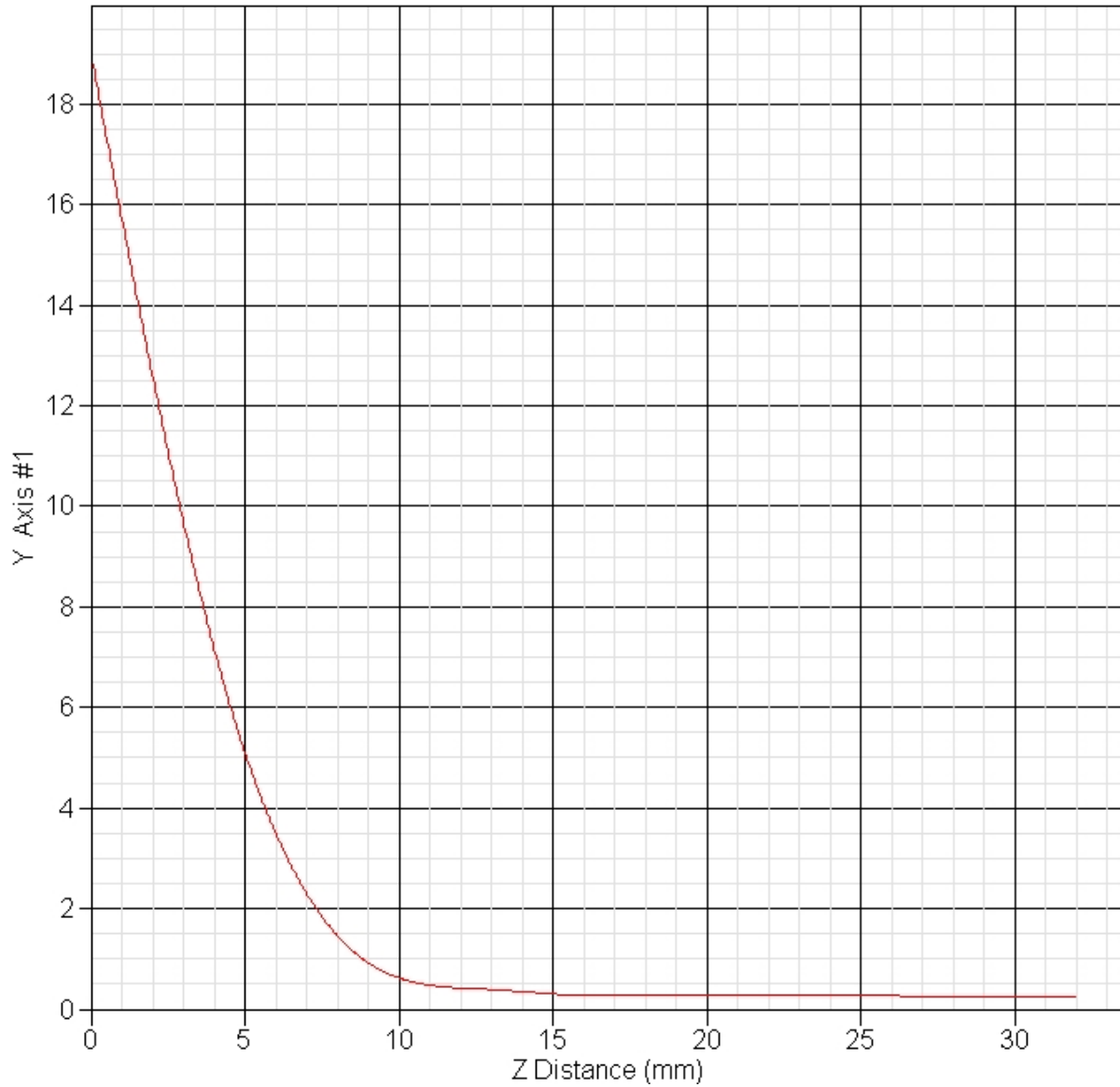
DUT Position : Touch  
Separation : 10  
Channel : Mid - 5800



1 gram SAR value : 6.172 W/kg  
10 gram SAR value : 2.189 W/kg  
Area Scan Peak SAR : 7.181 W/kg  
Zoom Scan Peak SAR : 19.015 W/kg



**SAR-Z Axis**  
at Hotspot x:0.30 y:-2.20



## SAR Test Report

By Operator : Jay  
Measurement Date : 22-May-2006  
Starting Time : 22-May-2006 10:20:14 AM  
End Time : 22-May-2006 10:33:30 AM  
Scanning Time : 796 secs

### Product Data

Device Name : Validation  
Serial No. : 5800  
Type : Dipole  
Model : ALS-D-BB-S-2  
Frequency : 5800.00 MHz  
Max. Transmit Pwr : 0.1 W  
Drift Time : 0 min(s)  
Length : 23.1 mm  
Width : 3.6 mm  
Depth : 20.7 mm  
Antenna Type : Internal  
Orientation : Touch  
Power Drift-Start : 2.375 W/kg  
Power Drift-Finish: 2.414 W/kg  
Power Drift (%) : 1.617

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 5800  
Frequency : 5765.00 MHz  
Last Calib. Date : 22-May-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 50.00 RH%  
Epsilon : 47.61 F/m  
Sigma : 5.68 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

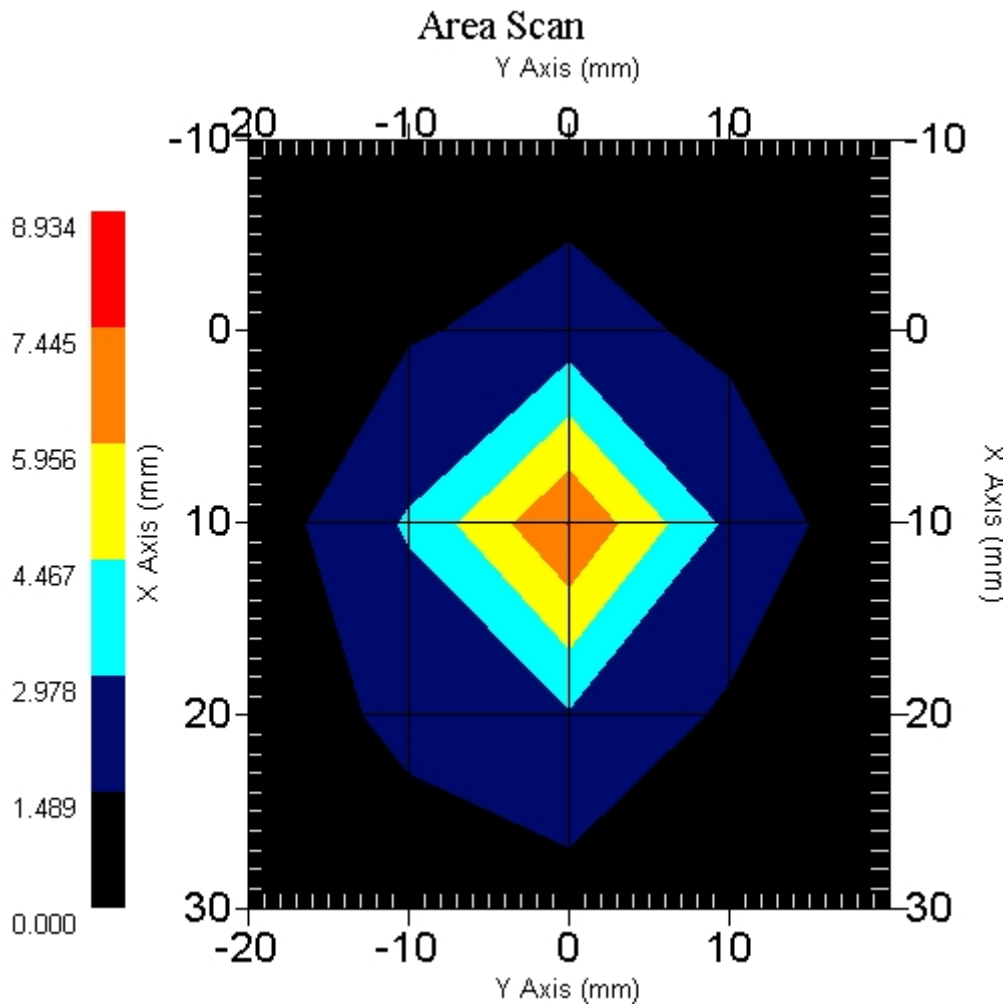
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 5800.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 2.1  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-May-2006  
 Set-up Time : 4:10:18 PM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

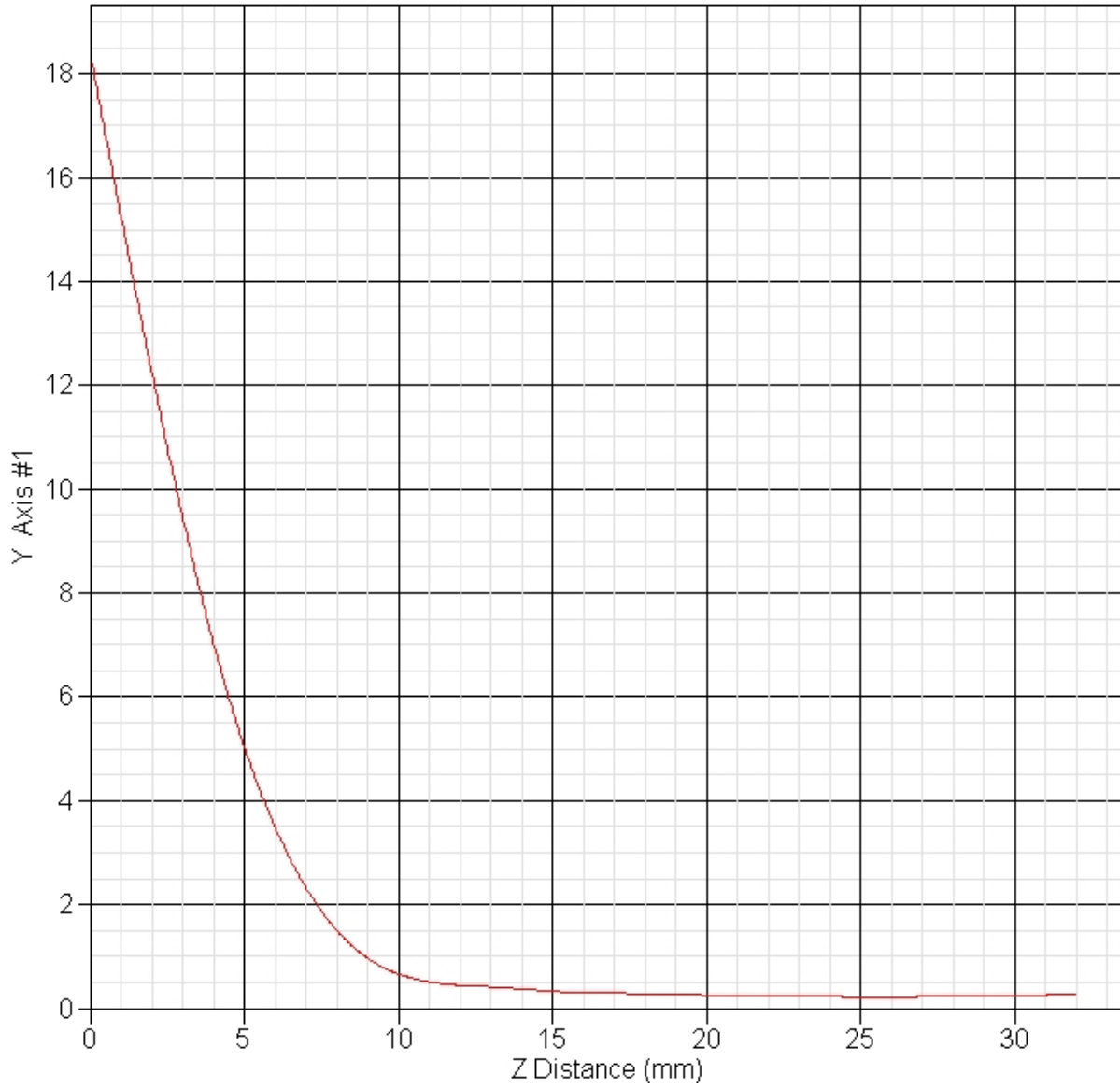
Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Mid - 5800



1 gram SAR value : 5.810 W/kg  
 10 gram SAR value : 1.980 W/kg  
 Area Scan Peak SAR : 7.447 W/kg  
 Zoom Scan Peak SAR : 18.414 W/kg

### SAR-Z Axis at Hotspot x:10.40 y:-2.30



## Appendix B – SAR Test Data Plots

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 01:34:32 PM  
End Time : 21-Mar-2006 01:55:41 PM  
Scanning Time : 1269 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.508 W/kg  
Power Drift-Finish: 0.533 W/kg  
Power Drift (%) : 4.833

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

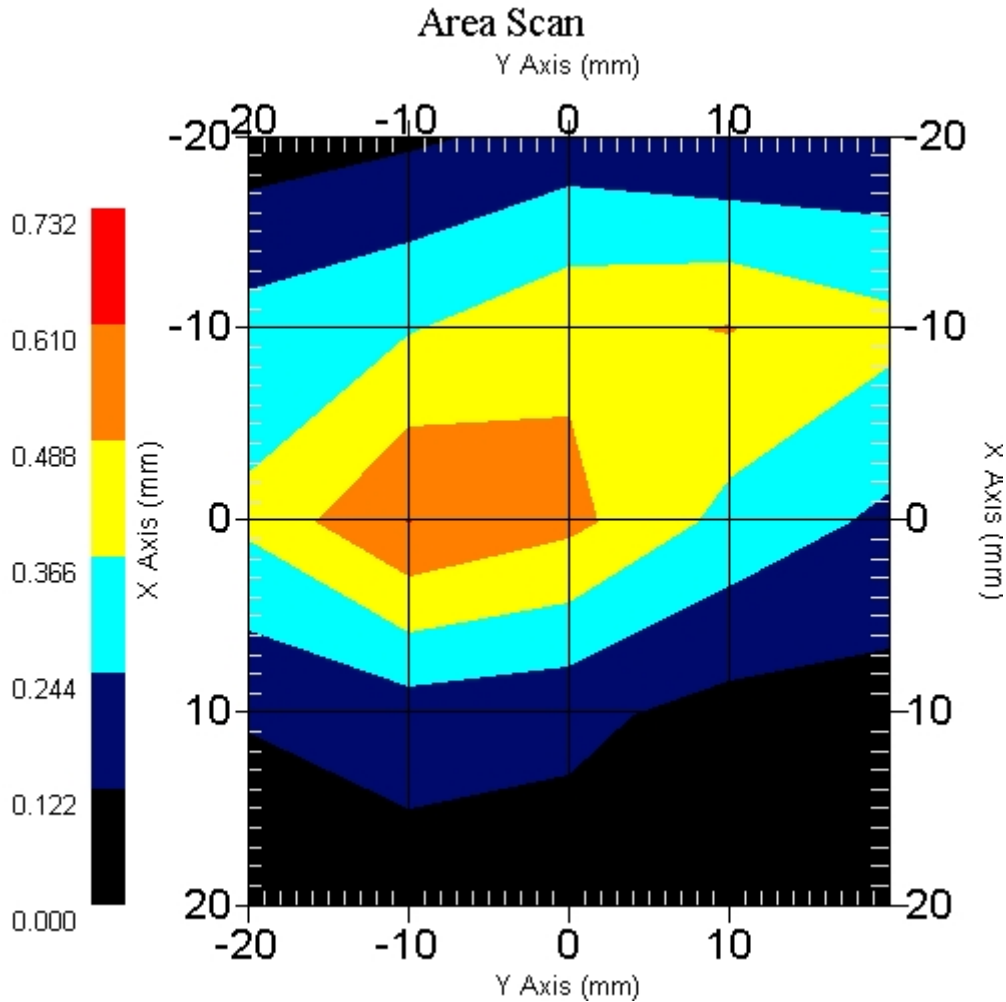
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Low - 1



1 gram SAR value : 0.540 W/kg  
 10 gram SAR value : 0.290 W/kg  
 Area Scan Peak SAR : 0.612 W/kg  
 Zoom Scan Peak SAR : 0.960 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 03:05:45 PM  
End Time : 21-Mar-2006 03:26:38 PM  
Scanning Time : 1253 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.820 W/kg  
Power Drift-Finish: 0.819 W/kg  
Power Drift (%) : -0.104

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

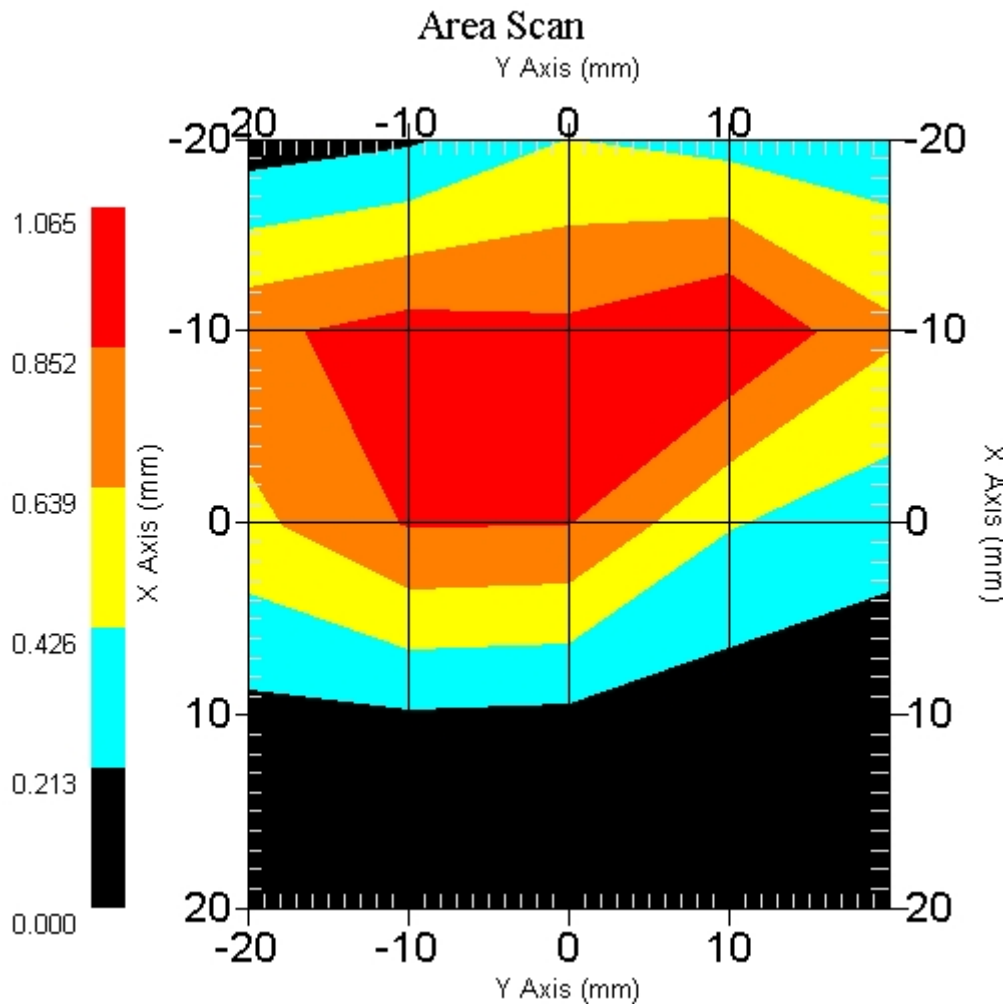


Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.844 W/kg  
 10 gram SAR value : 0.417 W/kg  
 Area Scan Peak SAR : 1.064 W/kg  
 Zoom Scan Peak SAR : 1.701 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 01:57:29 PM  
End Time : 21-Mar-2006 02:18:38 PM  
Scanning Time : 1269 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.524 W/kg  
Power Drift-Finish: 0.499 W/kg  
Power Drift (%) : -4.771

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

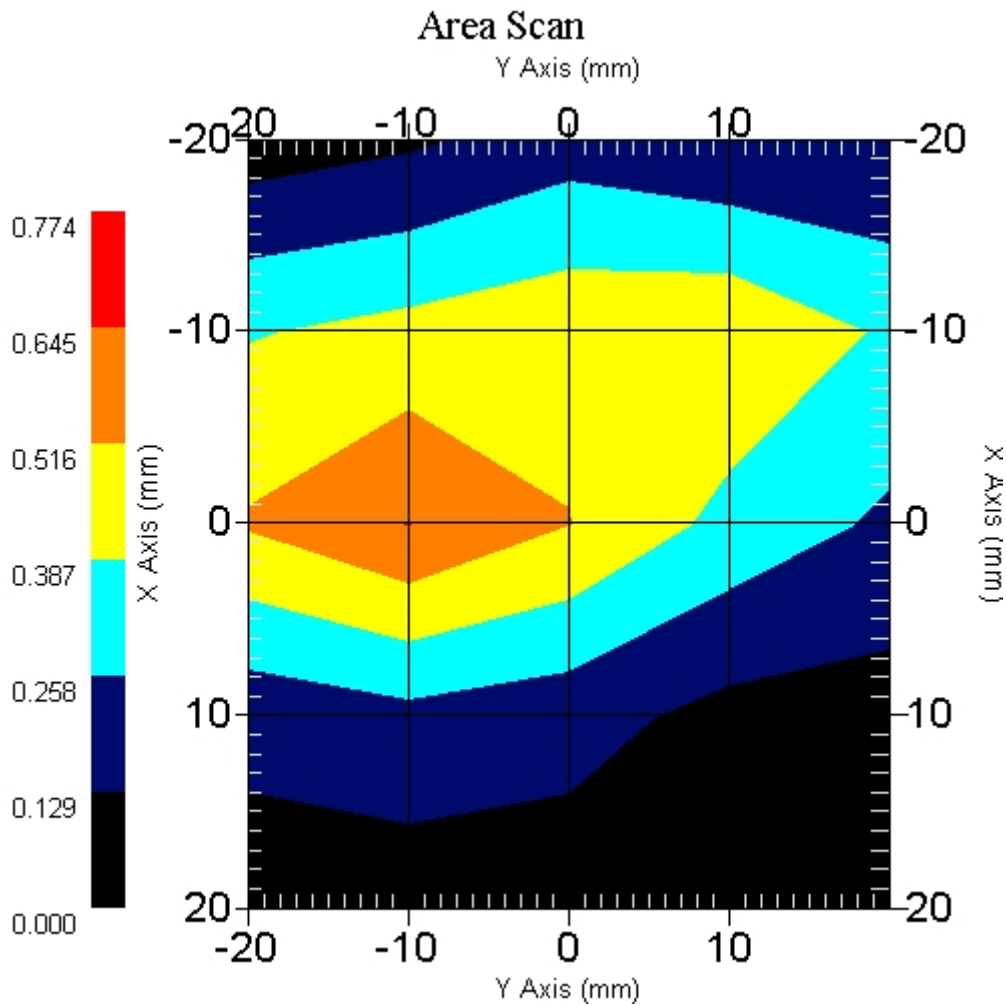
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : High - 11



1 gram SAR value : 0.562 W/kg  
 10 gram SAR value : 0.304 W/kg  
 Area Scan Peak SAR : 0.647 W/kg  
 Zoom Scan Peak SAR : 1.010 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 11:11:45 AM  
End Time : 21-Mar-2006 11:24:50 AM  
Scanning Time : 785 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 0.642 W/kg  
Power Drift-Finish: 0.618 W/kg  
Power Drift (%) : -3.738

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

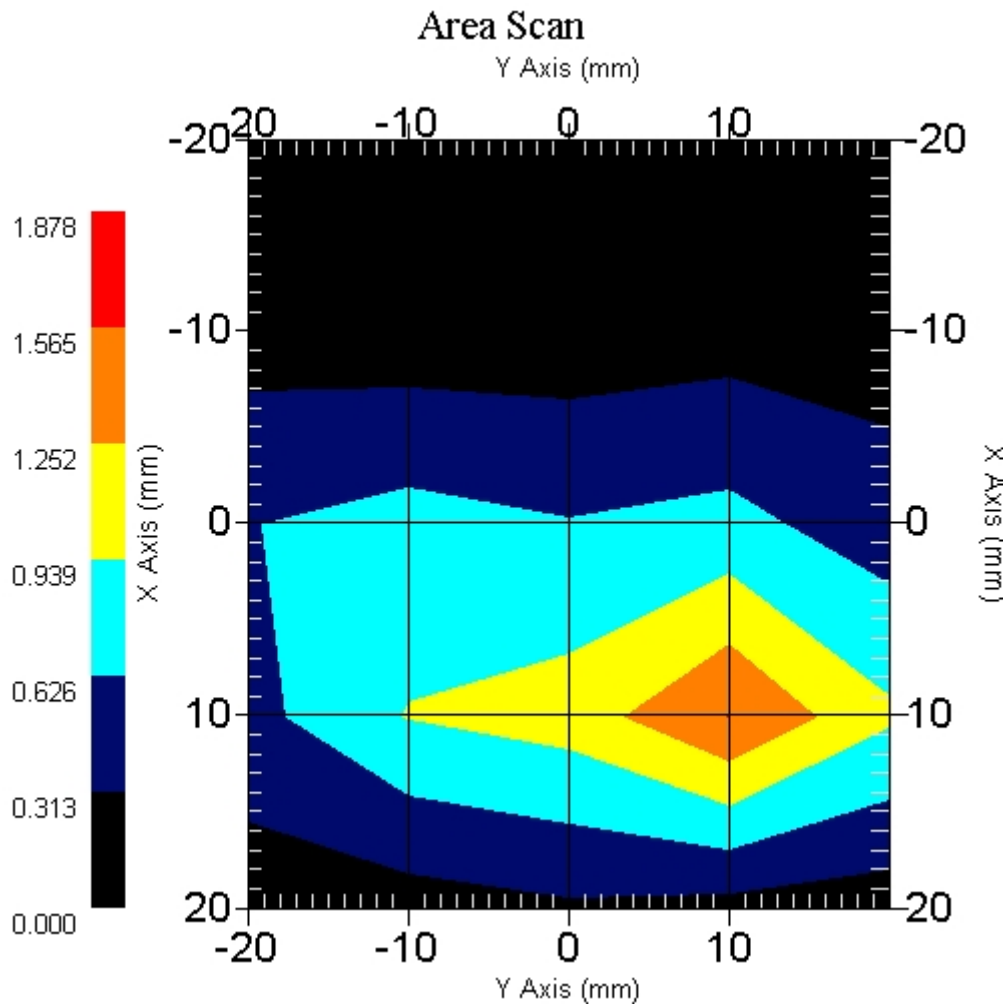
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Low - 1



1 gram SAR value : 1.100 W/kg  
 10 gram SAR value : 0.463 W/kg  
 Area Scan Peak SAR : 1.566 W/kg  
 Zoom Scan Peak SAR : 2.512 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 11:29:47 AM  
End Time : 21-Mar-2006 11:42:50 AM  
Scanning Time : 783 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 0.825 W/kg  
Power Drift-Finish: 0.847 W/kg  
Power Drift (%) : 2.667

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

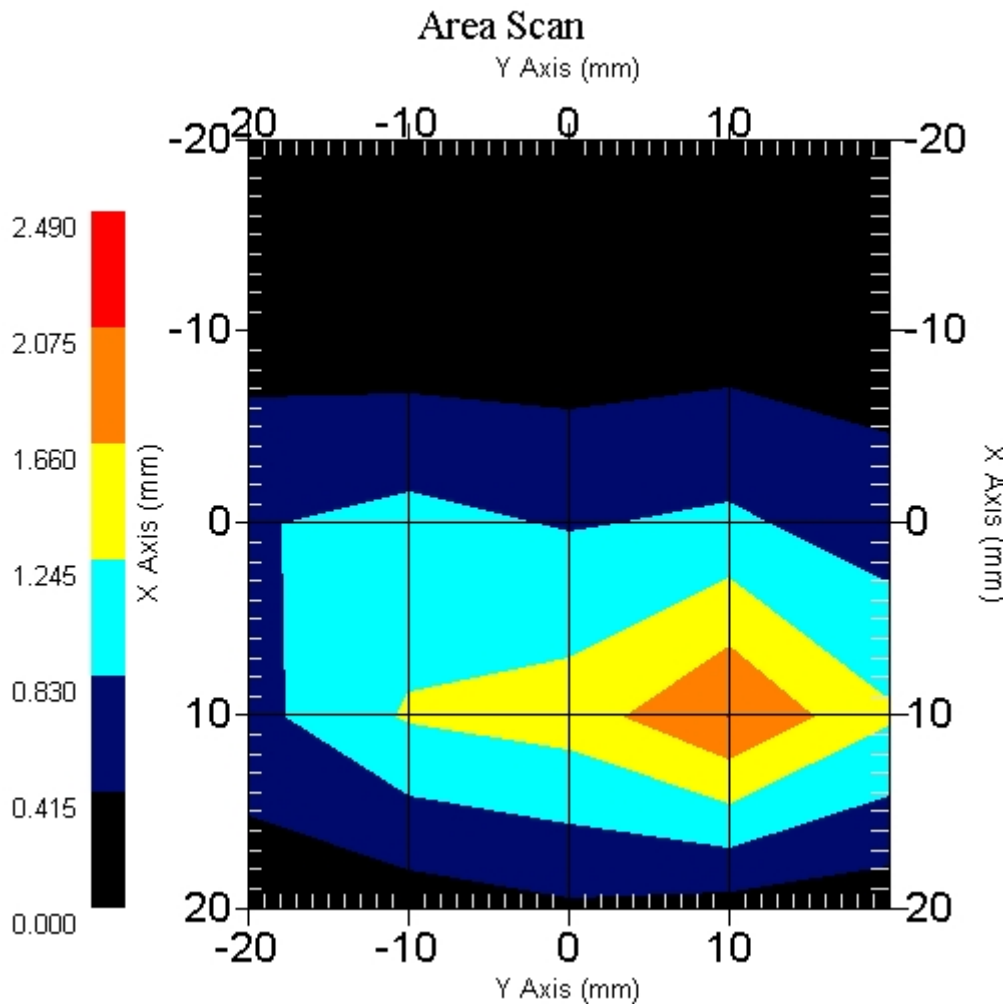
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 1.493 W/kg  
 10 gram SAR value : 0.607 W/kg  
 Area Scan Peak SAR : 2.076 W/kg  
 Zoom Scan Peak SAR : 3.533 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 12:23:38 PM  
End Time : 21-Mar-2006 12:44:35 PM  
Scanning Time : 1257 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 0.237 W/kg  
Power Drift-Finish: 0.233 W/kg  
Power Drift (%) : -1.828

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

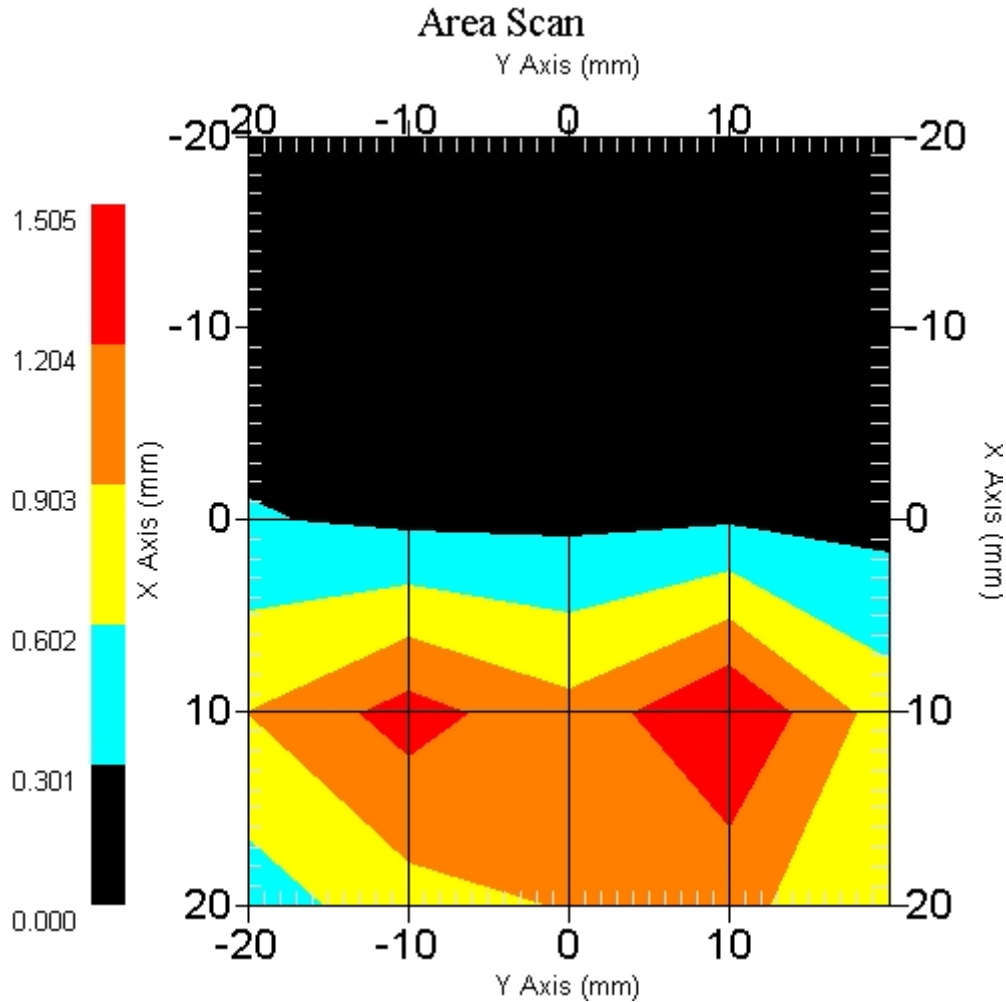


Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : High - 11



1 gram SAR value : 1.355 W/kg  
 10 gram SAR value : 0.631 W/kg  
 Area Scan Peak SAR : 1.503 W/kg  
 Zoom Scan Peak SAR : 2.912 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 12:11:25 PM  
End Time : 22-Mar-2006 12:24:31 PM  
Scanning Time : 786 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : Back  
Power Drift-Start : 0.093 W/kg  
Power Drift-Finish: 0.091 W/kg  
Power Drift (%) : -2.106

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

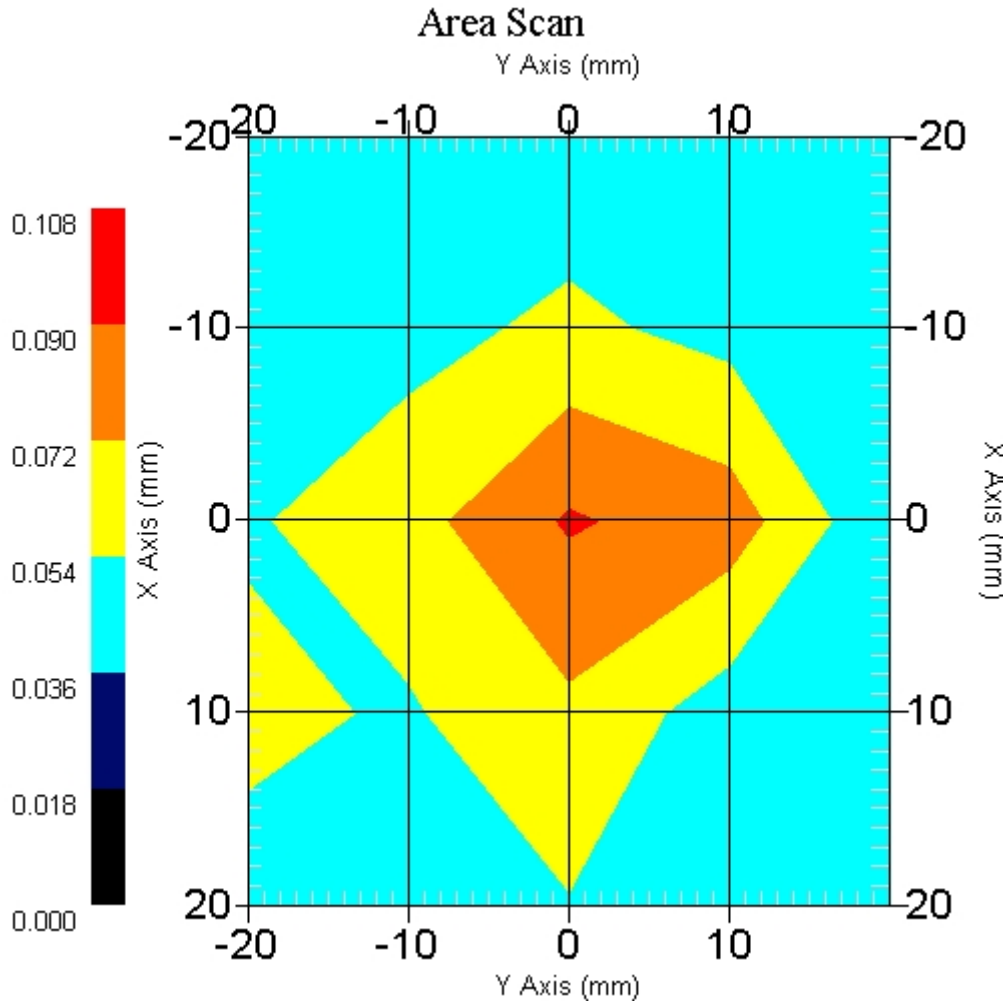
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Back  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.073 W/kg  
 10 gram SAR value : 0.051 W/kg  
 Area Scan Peak SAR : 0.092 W/kg  
 Zoom Scan Peak SAR : 0.120 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 01:11:20 PM  
End Time : 22-Mar-2006 01:32:27 PM  
Scanning Time : 1267 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : Back  
Power Drift-Start : 0.427 W/kg  
Power Drift-Finish: 0.407 W/kg  
Power Drift (%) : -4.684

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

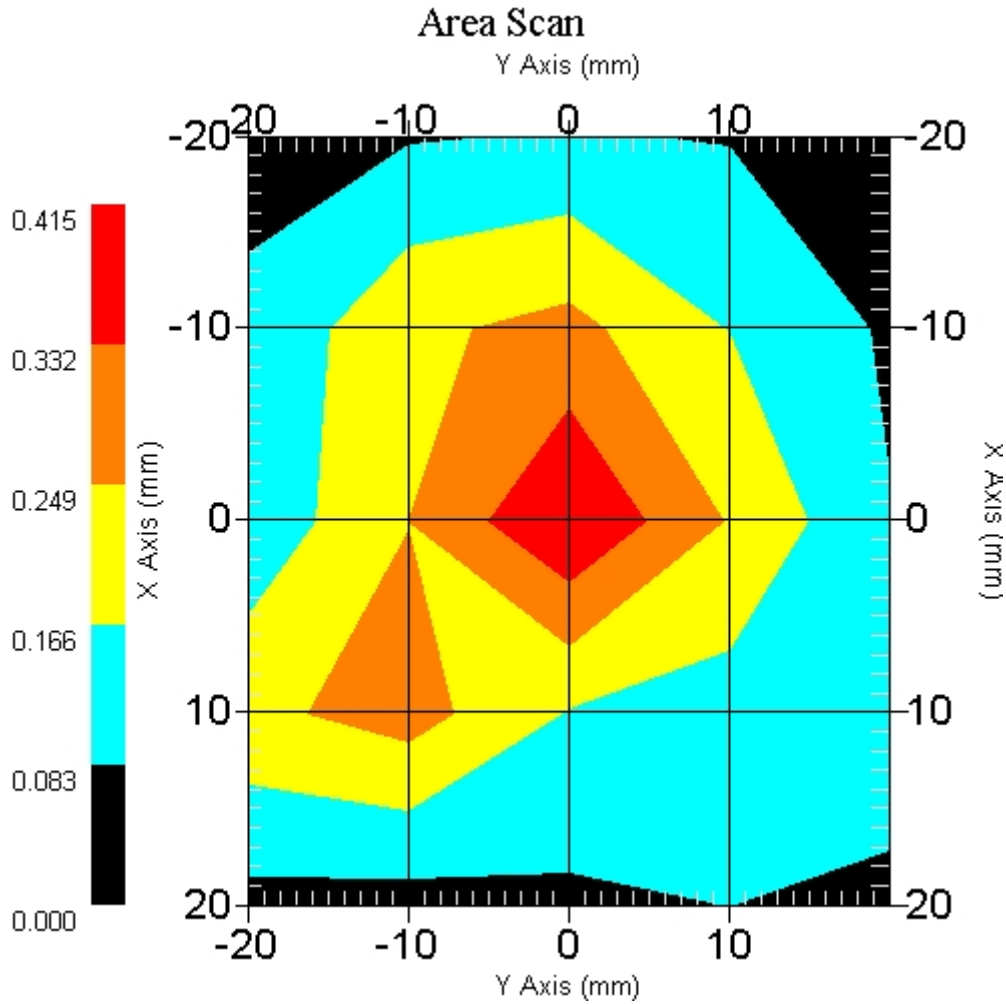
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Back  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.349 W/kg  
 10 gram SAR value : 0.177 W/kg  
 Area Scan Peak SAR : 0.413 W/kg  
 Zoom Scan Peak SAR : 0.750 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 12:46:37 PM  
End Time : 22-Mar-2006 01:07:51 PM  
Scanning Time : 1274 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : Front  
Power Drift-Start : 0.110 W/kg  
Power Drift-Finish: 0.107 W/kg  
Power Drift (%) : -2.727

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

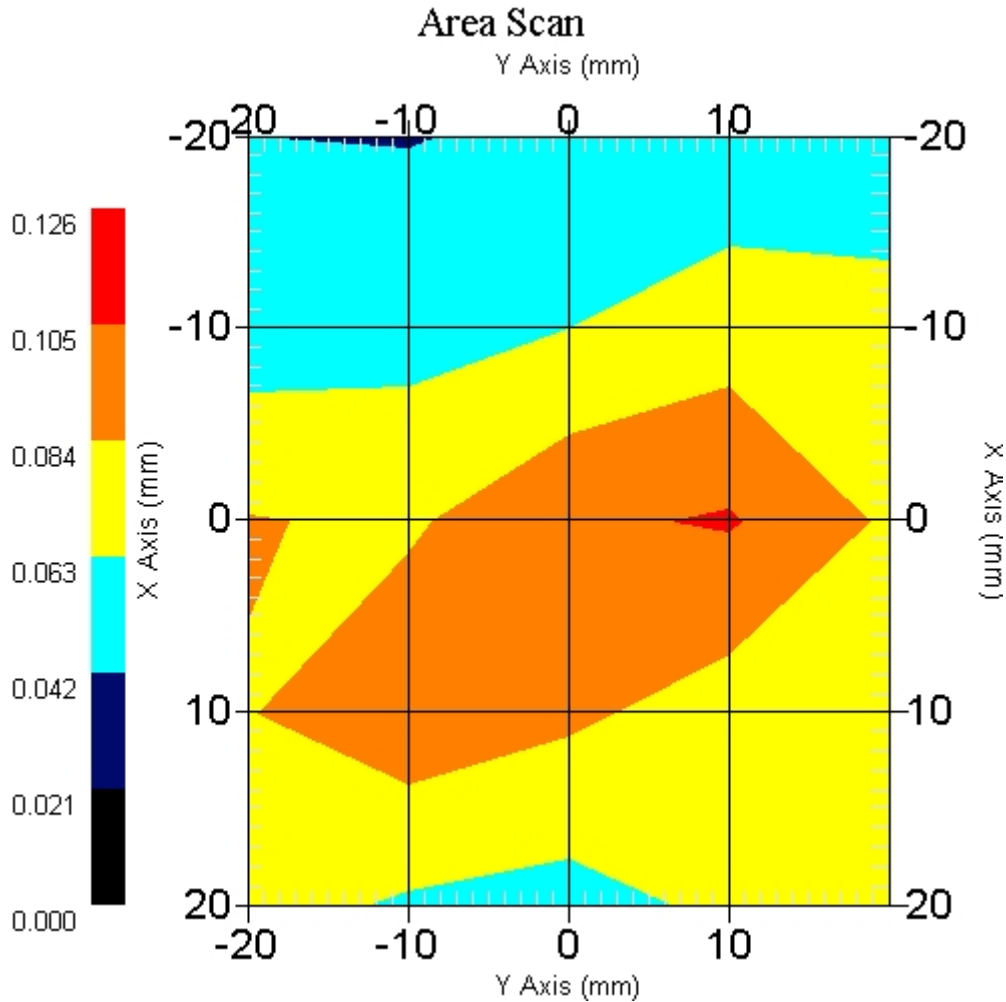
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Front  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.107 W/kg  
 10 gram SAR value : 0.072 W/kg  
 Area Scan Peak SAR : 0.107 W/kg  
 Zoom Scan Peak SAR : 0.160 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 01:36:58 PM  
End Time : 22-Mar-2006 01:50:08 PM  
Scanning Time : 790 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : Front  
Power Drift-Start : 0.791 W/kg  
Power Drift-Finish: 0.770 W/kg  
Power Drift (%) : -2.655

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

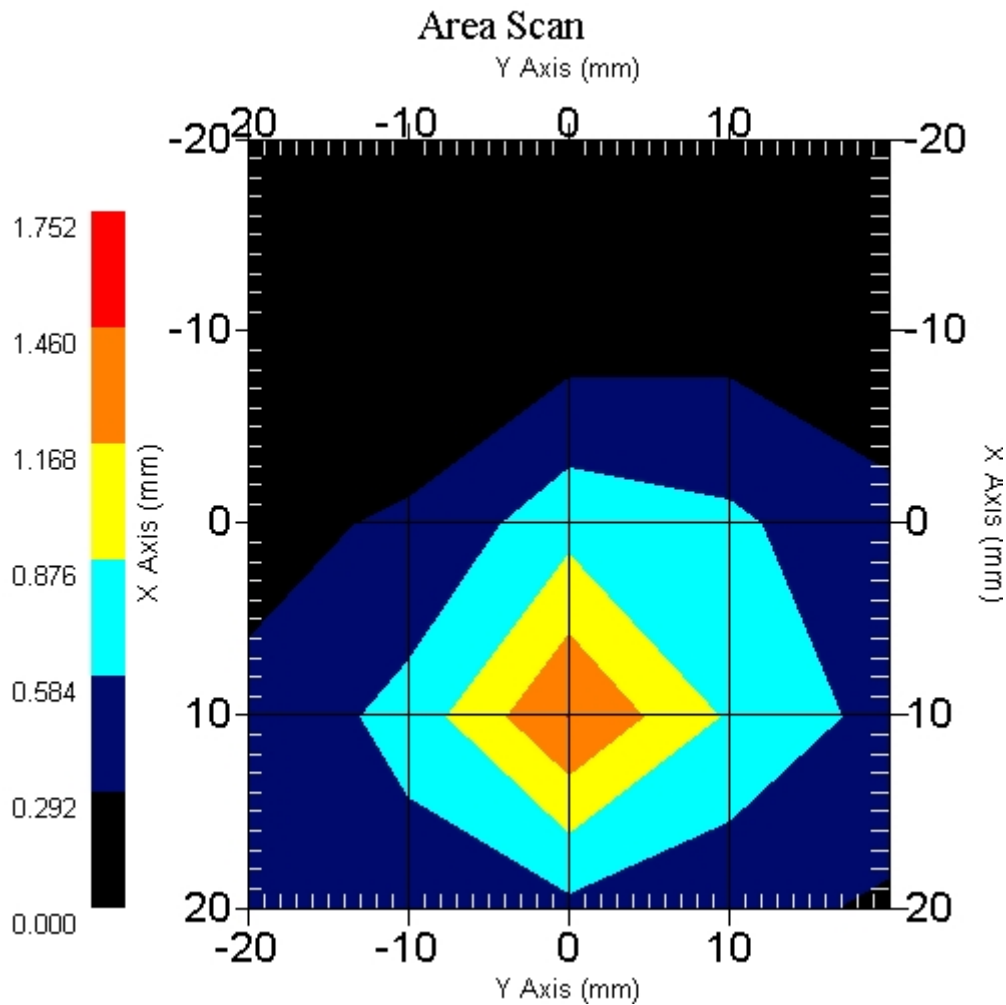


Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Front  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 1.142 W/kg  
 10 gram SAR value : 0.492 W/kg  
 Area Scan Peak SAR : 1.461 W/kg  
 Zoom Scan Peak SAR : 2.612 W/kg

**SAR Test Report**

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 01:11:49 PM  
End Time : 21-Mar-2006 01:32:42 PM  
Scanning Time : 1253 secs

## Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.755 W/kg  
Power Drift-Finish: 0.773 W/kg  
Power Drift (%) : 2.395

## Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

## Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

## Probe Data

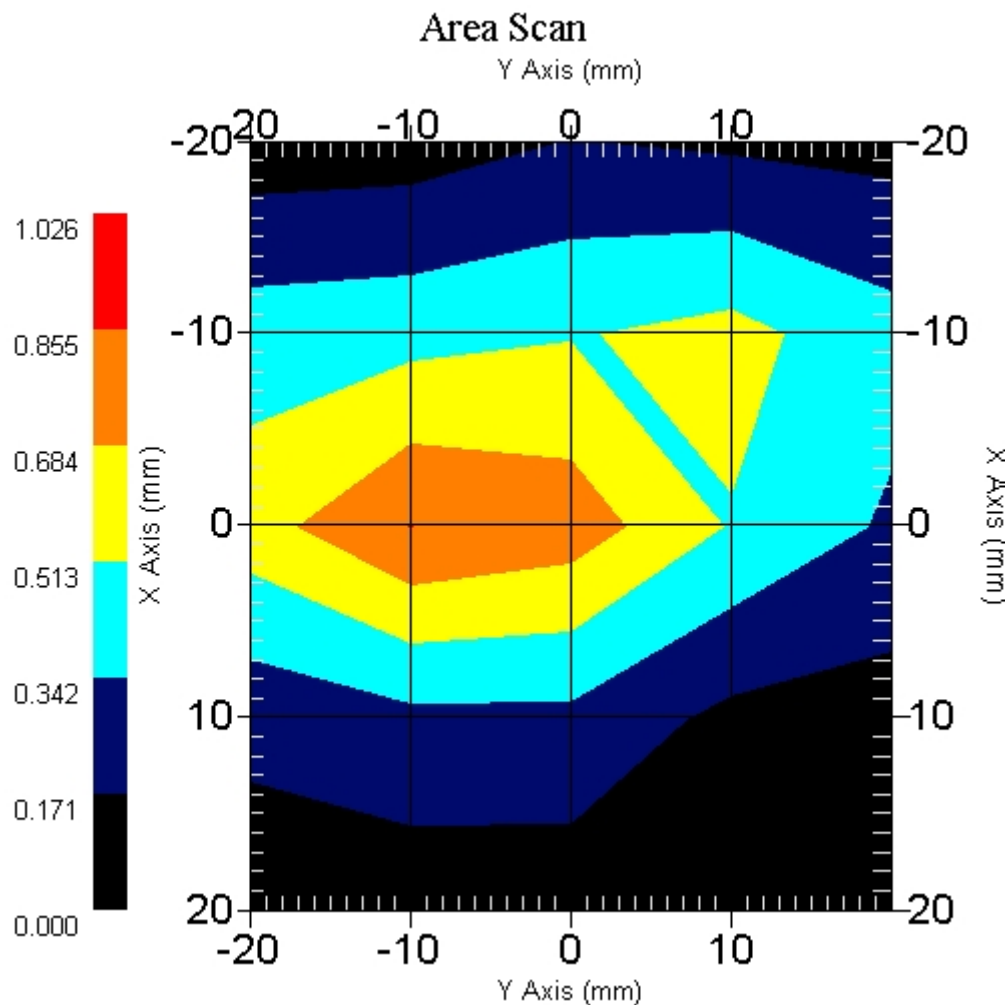
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

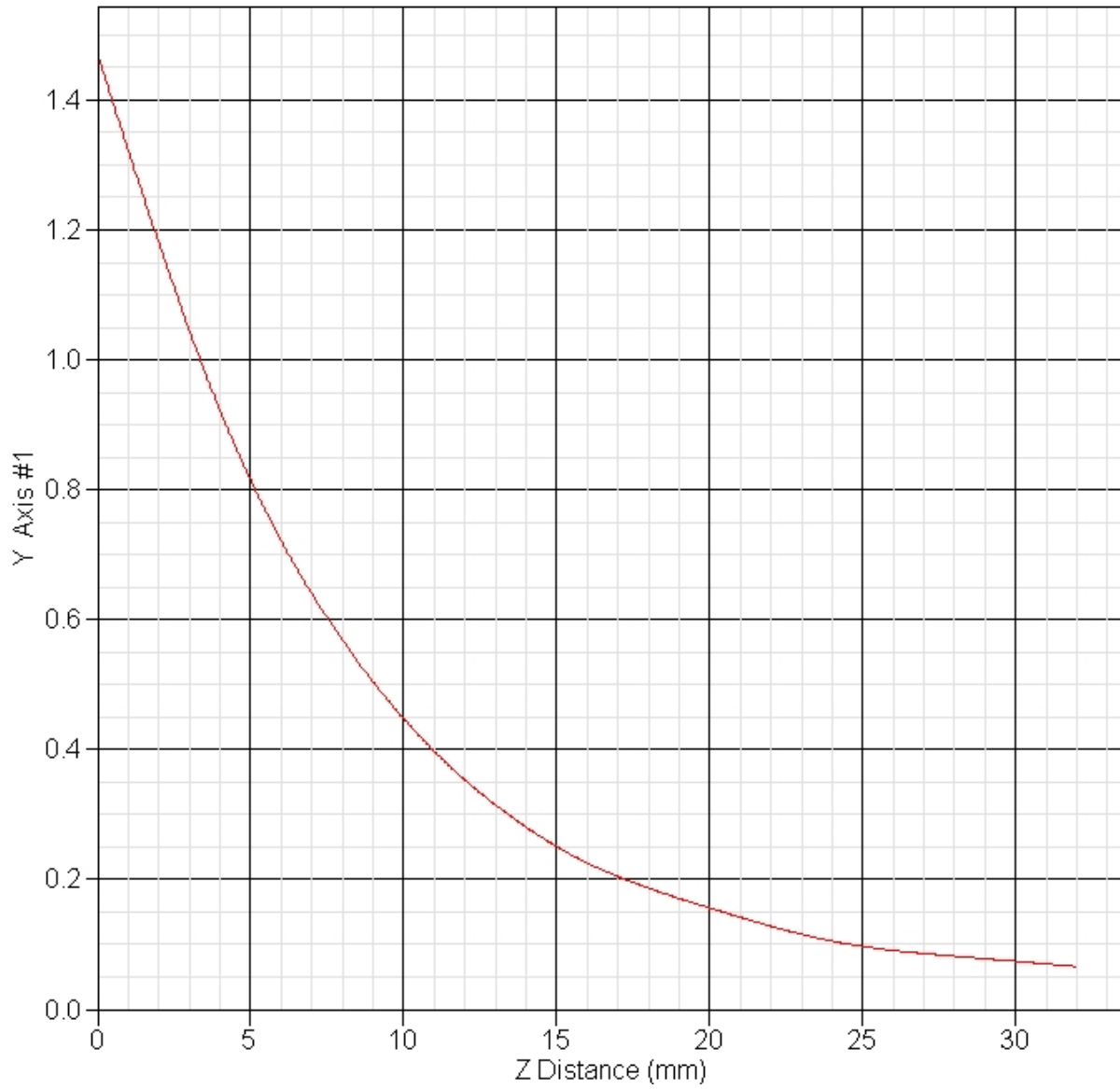
Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.813 W/kg  
 10 gram SAR value : 0.426 W/kg  
 Area Scan Peak SAR : 0.856 W/kg  
 Zoom Scan Peak SAR : 1.471 W/kg

**SAR-Z Axis**  
at Hotspot x:-1.60 y:-6.40



## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 12:48:09 PM  
End Time : 21-Mar-2006 01:09:20 PM  
Scanning Time : 1271 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 1.359 W/kg  
Power Drift-Finish: 1.324 W/kg  
Power Drift (%) : -2.549

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

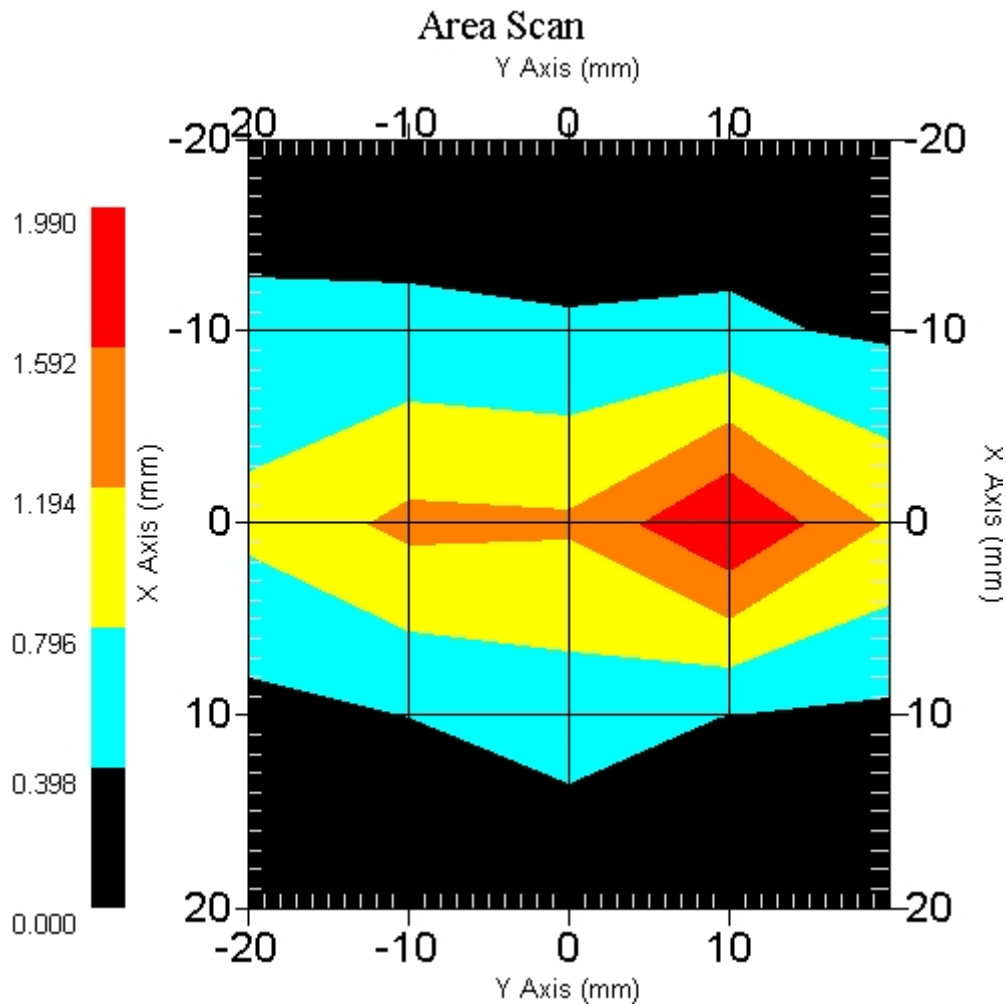
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

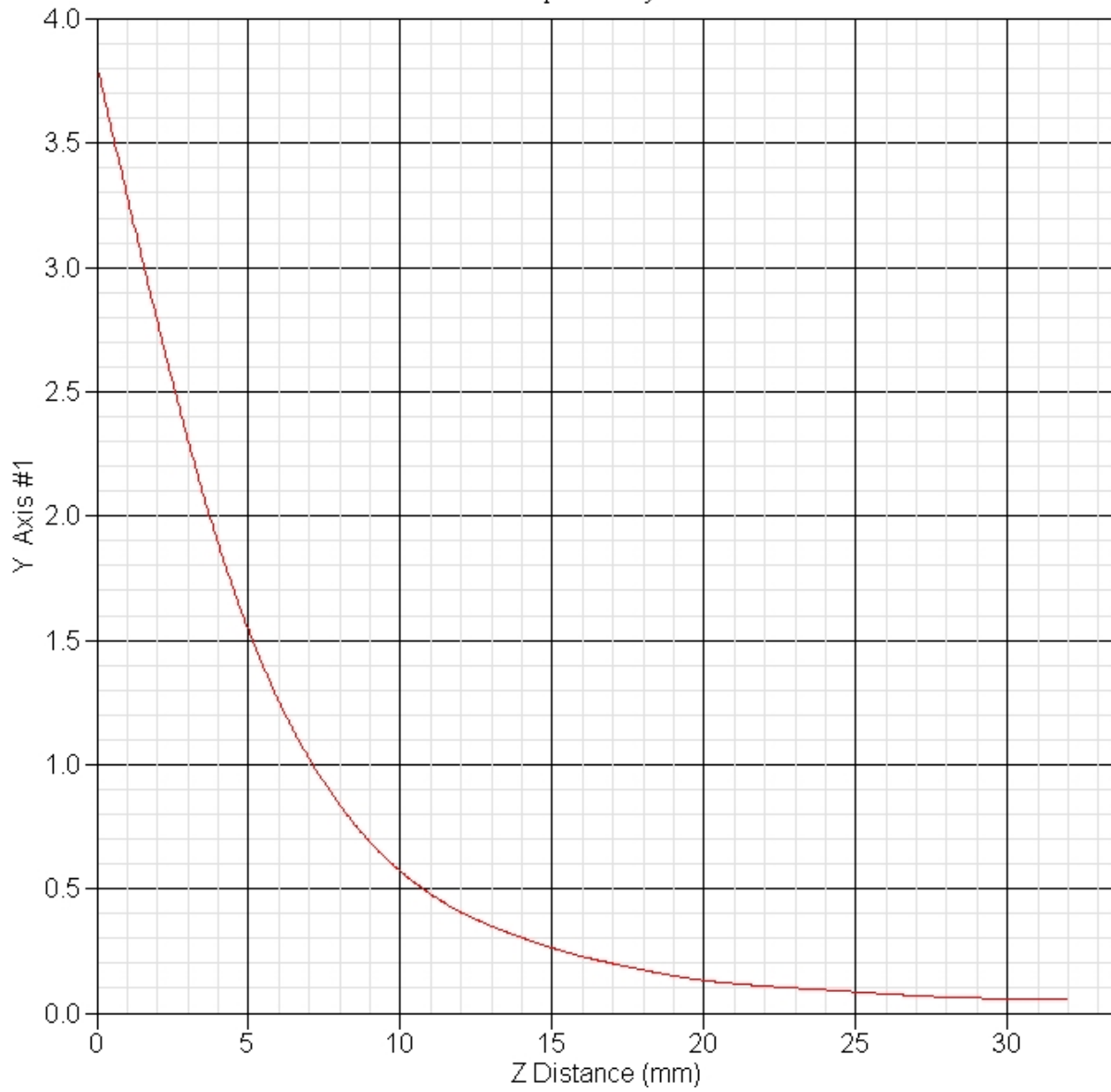
Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 1.550 W/kg  
 10 gram SAR value : 0.640 W/kg  
 Area Scan Peak SAR : 1.989 W/kg  
 Zoom Scan Peak SAR : 3.813 W/kg

### SAR-Z Axis at Hotspot x:0.40 y:5.60



## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 08:50:15 AM  
End Time : 22-Mar-2006 09:11:53 AM  
Scanning Time : 1298 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.525 W/kg  
Power Drift-Finish: 0.504 W/kg  
Power Drift (%) : -4.001

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

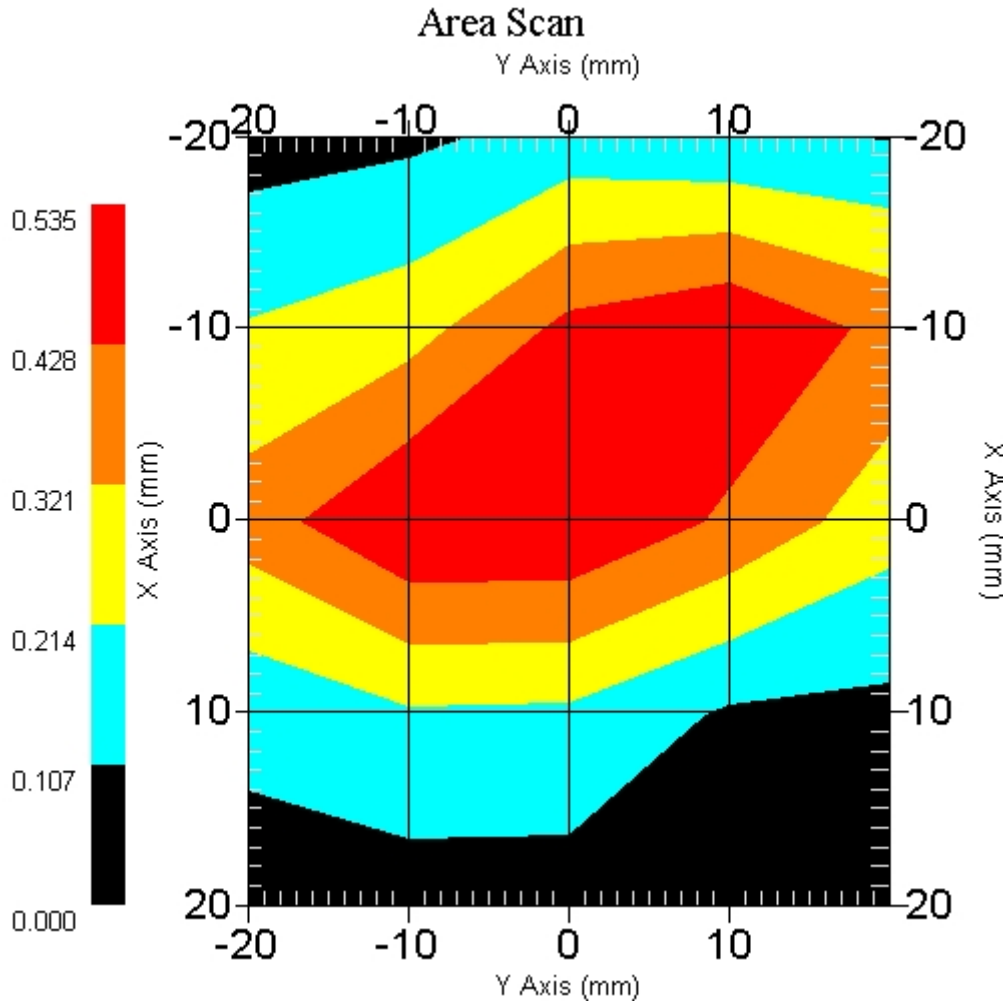


Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Low - 1



1 gram SAR value : 0.480 W/kg  
 10 gram SAR value : 0.259 W/kg  
 Area Scan Peak SAR : 0.533 W/kg  
 Zoom Scan Peak SAR : 0.870 W/kg

**SAR Test Report**

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 08:28:27 AM  
End Time : 22-Mar-2006 08:49:26 AM  
Scanning Time : 1259 secs

## Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.323 W/kg  
Power Drift-Finish: 0.313 W/kg  
Power Drift (%) : -3.096

## Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

## Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

## Probe Data

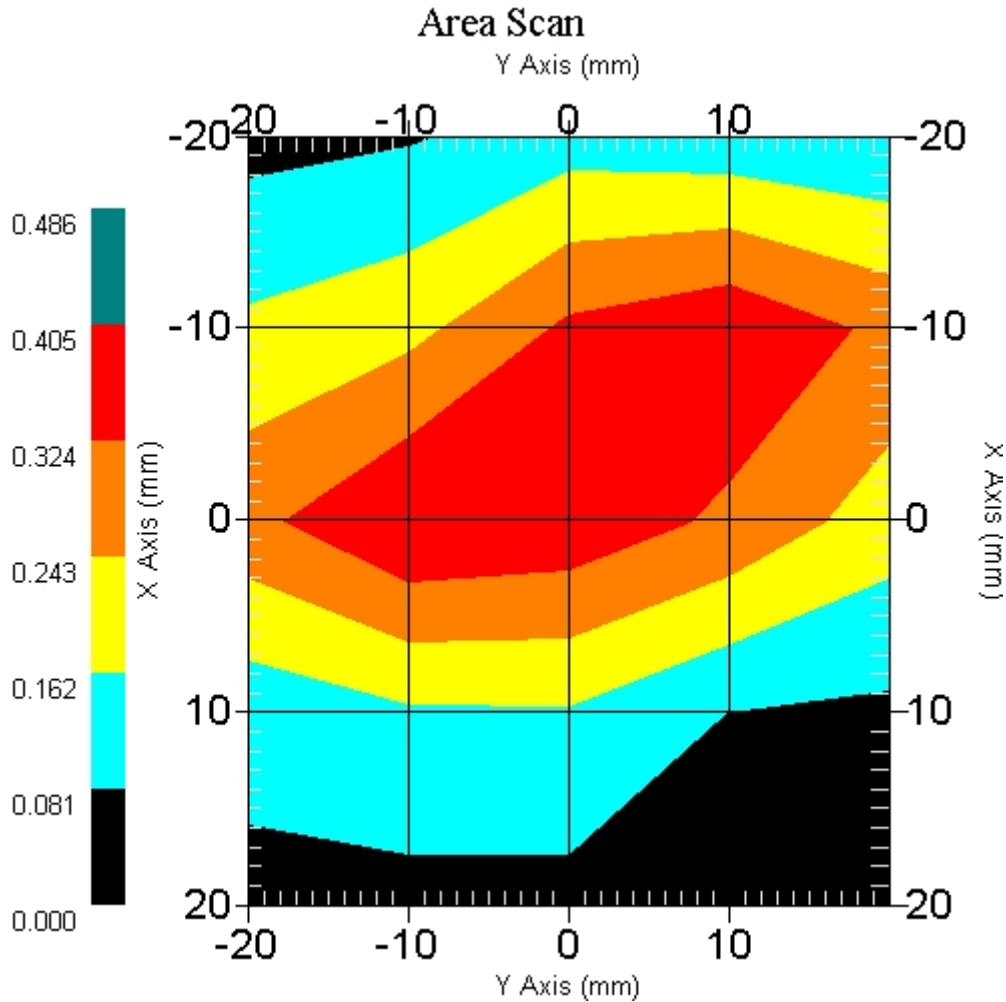
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.317 W/kg  
 10 gram SAR value : 0.170 W/kg  
 Area Scan Peak SAR : 0.405 W/kg  
 Zoom Scan Peak SAR : 0.610 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 05:09:12 PM  
End Time : 21-Mar-2006 05:30:14 PM  
Scanning Time : 1262 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : End  
Power Drift-Start : 0.454 W/kg  
Power Drift-Finish: 0.470 W/kg  
Power Drift (%) : 3.524

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

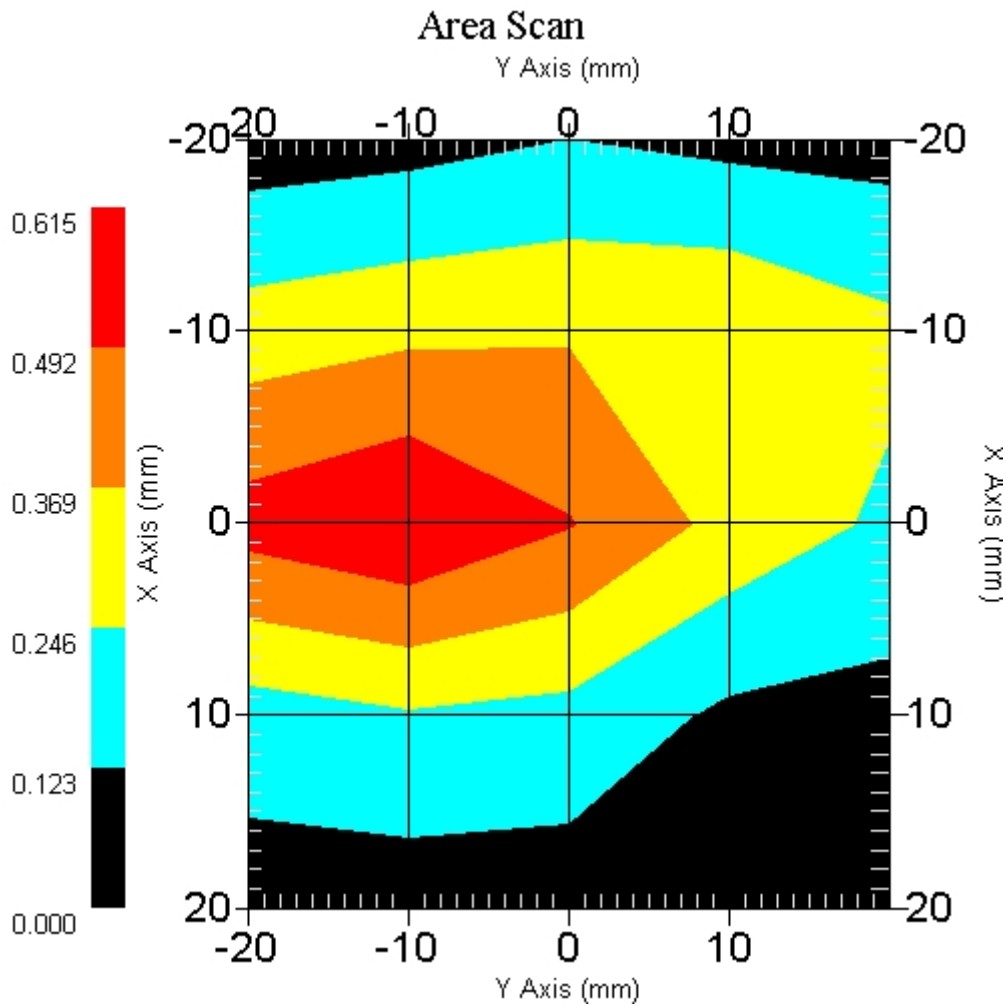
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

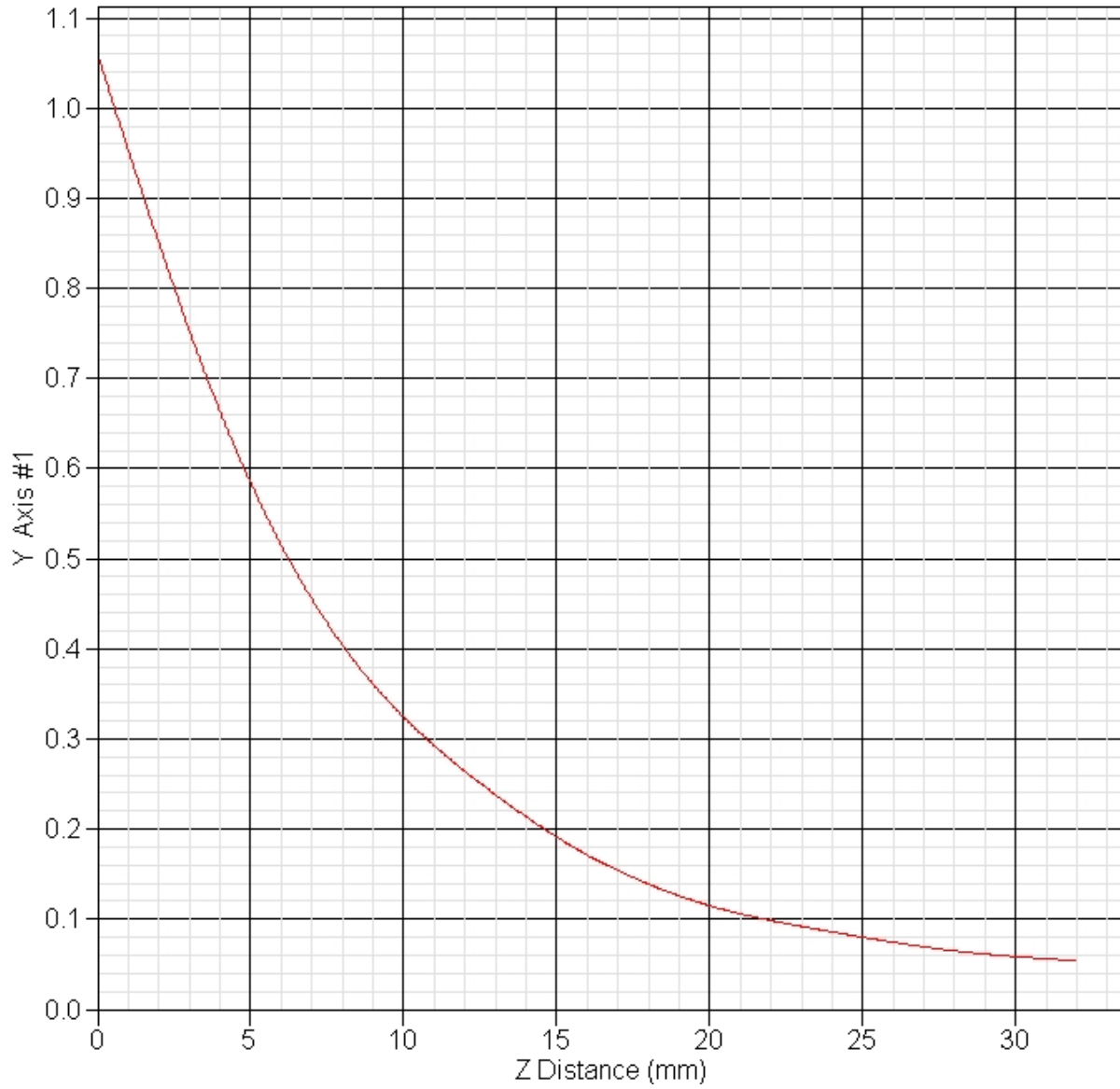
Other Data

DUT Position : End  
 Separation : 0  
 Channel : High - 11



1 gram SAR value : 0.598 W/kg  
 10 gram SAR value : 0.327 W/kg  
 Area Scan Peak SAR : 0.615 W/kg  
 Zoom Scan Peak SAR : 1.060 W/kg

### SAR-Z Axis at Hotspot x:-1.60 y:-6.40



## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 03:36:00 PM  
End Time : 21-Mar-2006 03:49:11 PM  
Scanning Time : 791 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 1.130 W/kg  
Power Drift-Finish: 1.088 W/kg  
Power Drift (%) : -3.717

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

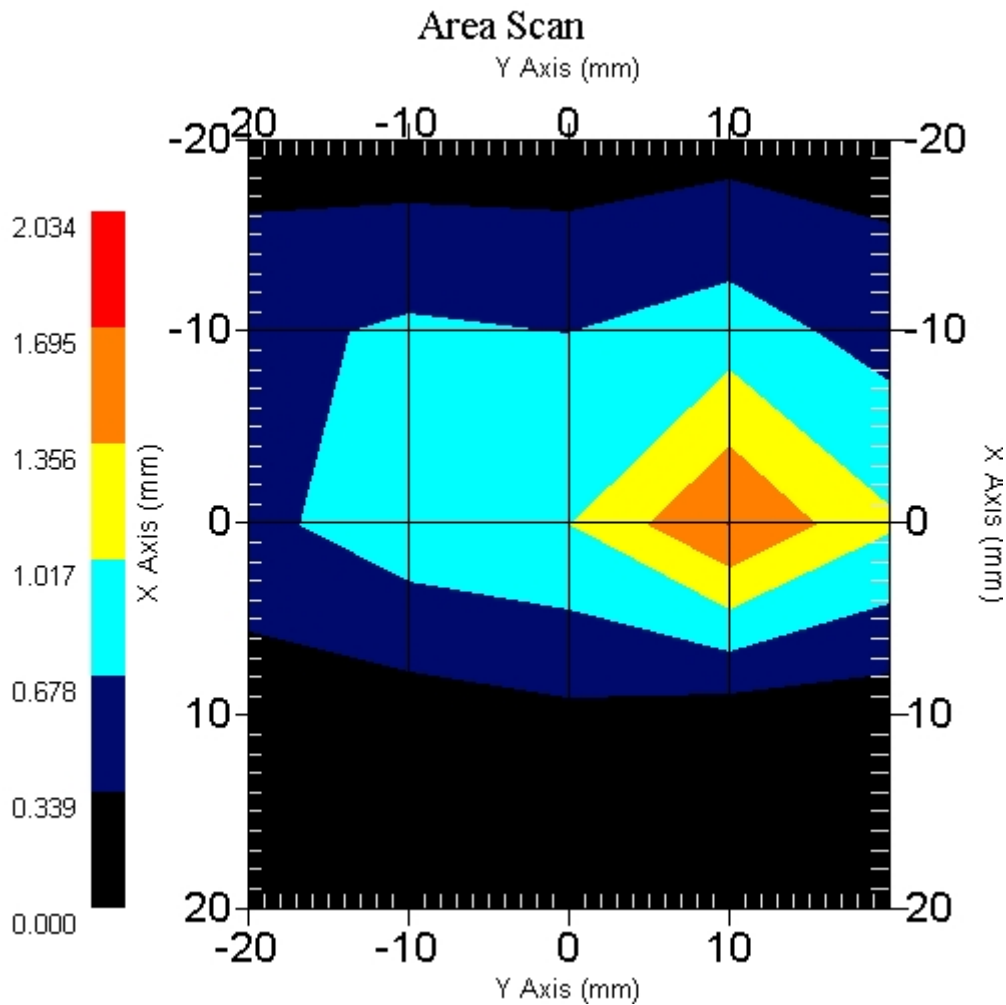
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Low - 1



1 gram SAR value : 1.168 W/kg  
 10 gram SAR value : 0.484 W/kg  
 Area Scan Peak SAR : 1.697 W/kg  
 Zoom Scan Peak SAR : 2.752 W/kg



## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 04:27:44 PM  
End Time : 21-Mar-2006 04:40:55 PM  
Scanning Time : 791 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 1.392 W/kg  
Power Drift-Finish: 1.475 W/kg  
Power Drift (%) : 5.972

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

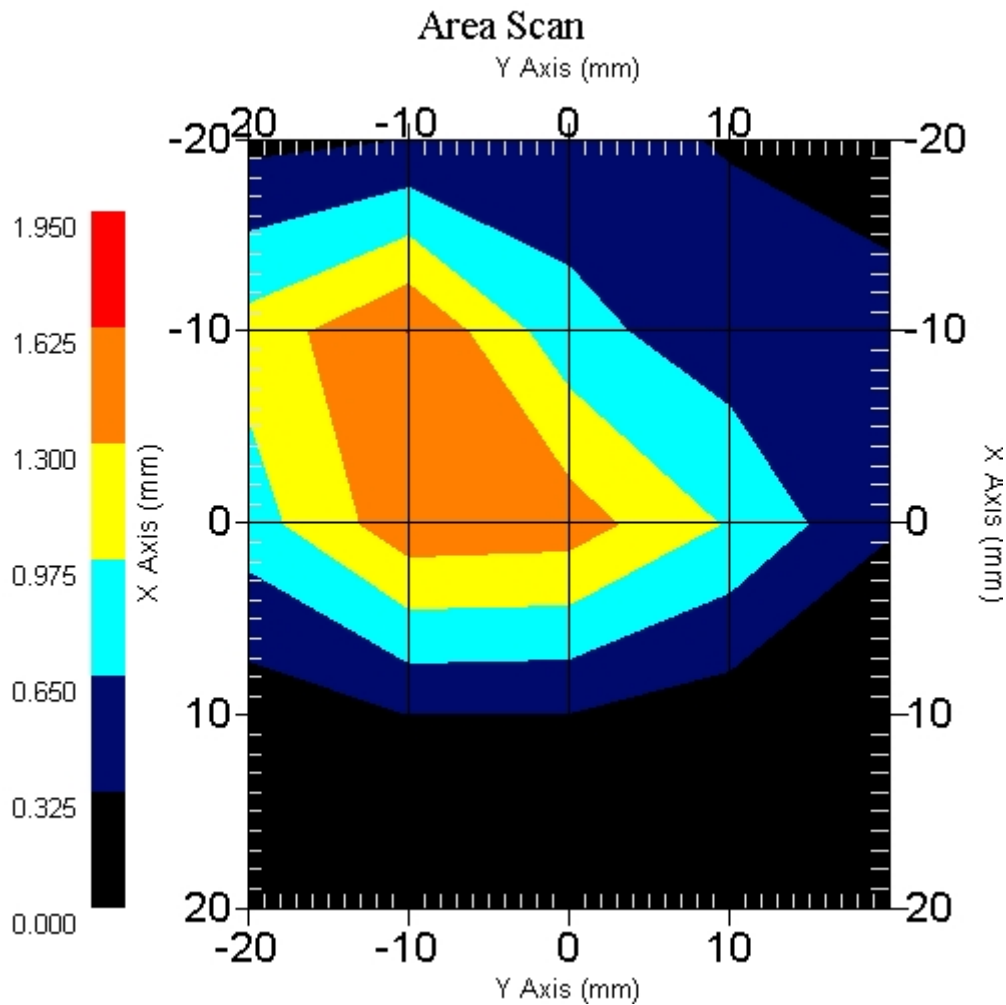
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 1.376 W/kg  
 10 gram SAR value : 0.637 W/kg  
 Area Scan Peak SAR : 1.627 W/kg  
 Zoom Scan Peak SAR : 2.842 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 21-Mar-2006  
Starting Time : 21-Mar-2006 04:46:08 PM  
End Time : 21-Mar-2006 05:07:13 PM  
Scanning Time : 1265 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : End  
Power Drift-Start : 1.375 W/kg  
Power Drift-Finish: 1.317 W/kg  
Power Drift (%) : -4.282

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 21-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 44.00 RH%  
Epsilon : 51.93 F/m  
Sigma : 1.96 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

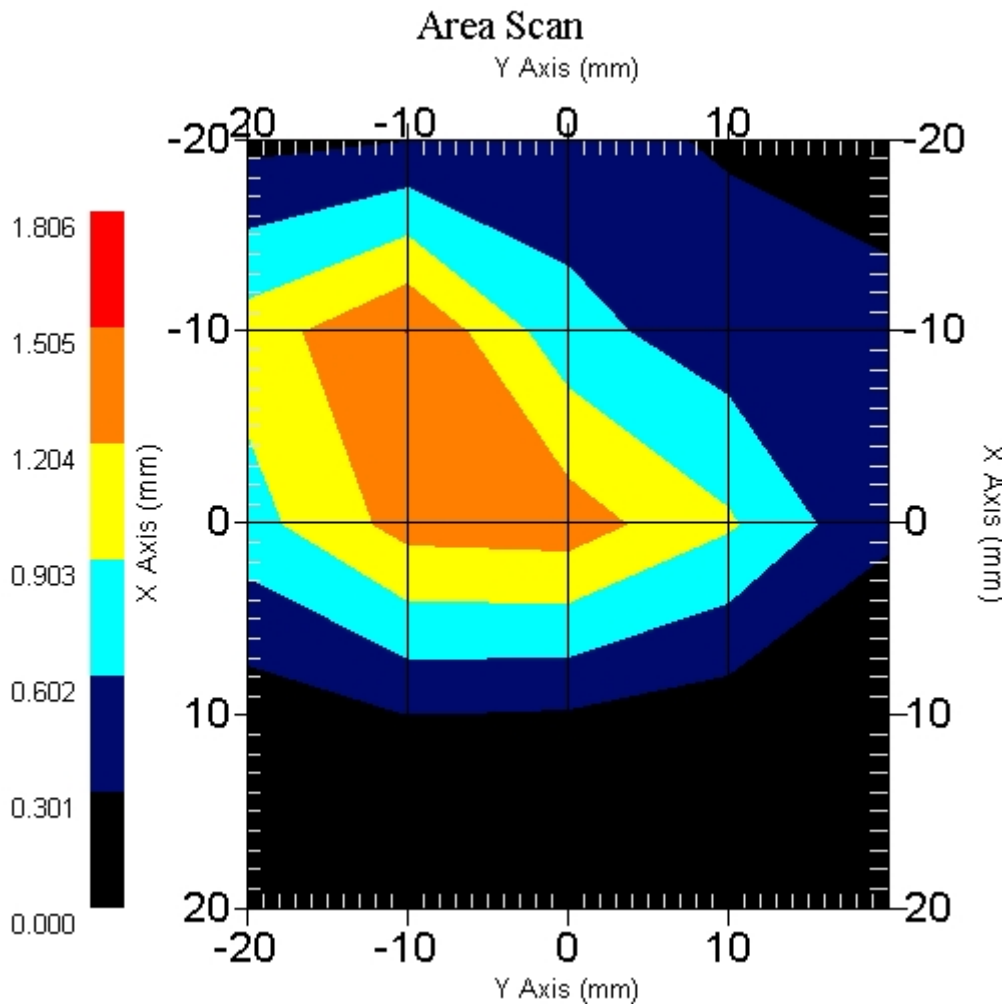
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 21-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : End  
 Separation : 0  
 Channel : High - 11



1 gram SAR value : 1.345 W/kg  
 10 gram SAR value : 0.612 W/kg  
 Area Scan Peak SAR : 1.507 W/kg  
 Zoom Scan Peak SAR : 2.962 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 09:47:50 AM  
End Time : 22-Mar-2006 10:00:54 AM  
Scanning Time : 784 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : Back  
Power Drift-Start : 0.300 W/kg  
Power Drift-Finish: 0.289 W/kg  
Power Drift (%) : -3.667

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

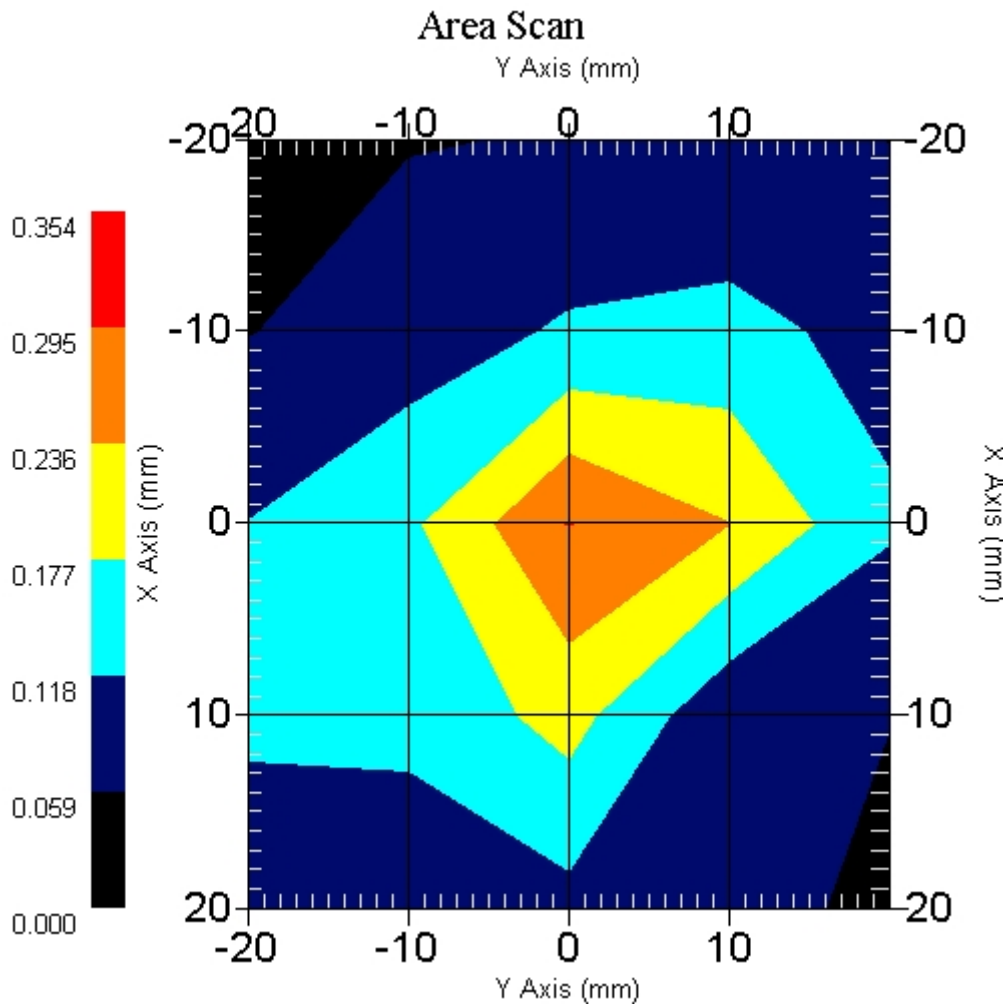
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Back  
 Separation : 0  
 Channel : High - 11



1 gram SAR value : 0.224 W/kg  
 10 gram SAR value : 0.115 W/kg  
 Area Scan Peak SAR : 0.297 W/kg  
 Zoom Scan Peak SAR : 0.430 W/kg

## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 11:45:05 AM  
End Time : 22-Mar-2006 12:06:08 PM  
Scanning Time : 1263 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Aux  
Orientation : Back  
Power Drift-Start : 0.480 W/kg  
Power Drift-Finish: 0.497 W/kg  
Power Drift (%) : 3.559

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

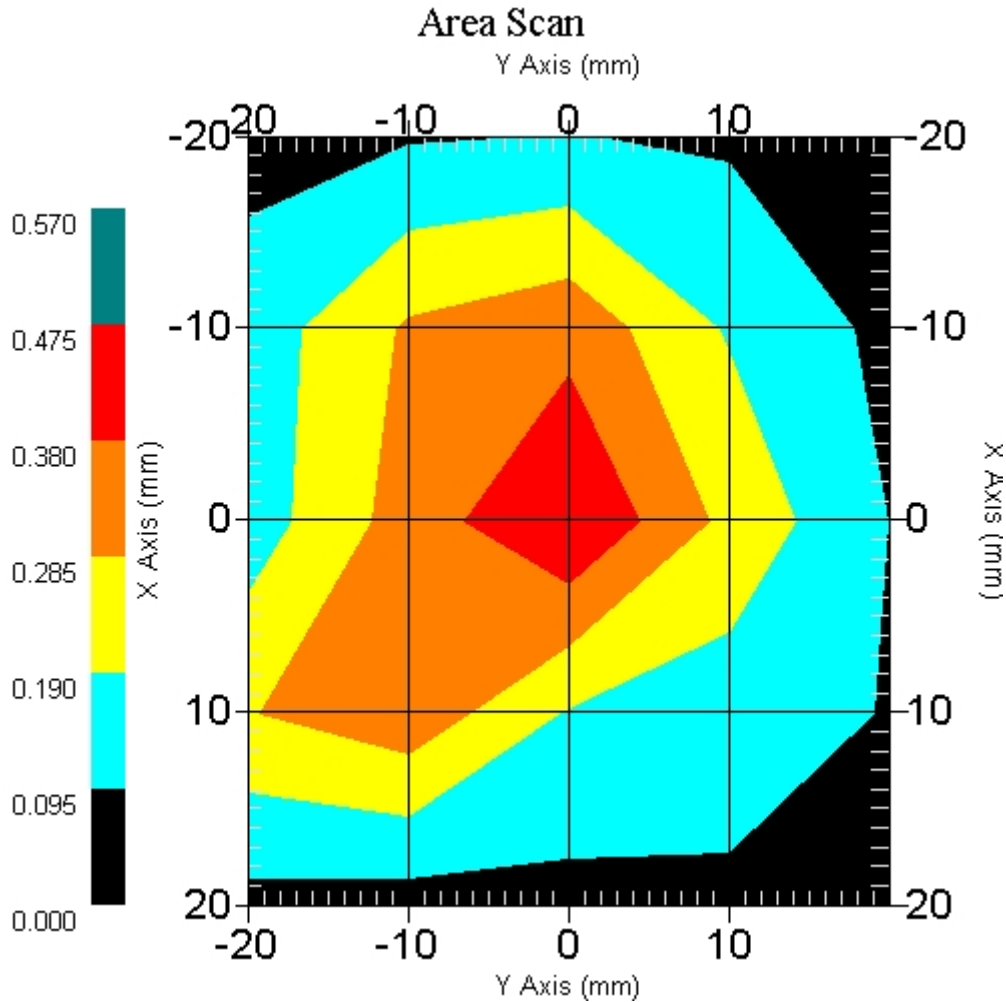
Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm

Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 20.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 22-Mar-2006  
 Set-up Time : 11:11:39 AM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data

DUT Position : Back  
 Separation : 0  
 Channel : Mid - 6



1 gram SAR value : 0.458 W/kg  
 10 gram SAR value : 0.244 W/kg  
 Area Scan Peak SAR : 0.475 W/kg  
 Zoom Scan Peak SAR : 0.850 W/kg



## SAR Test Report

By Operator : Jay  
Measurement Date : 22-Mar-2006  
Starting Time : 22-Mar-2006 10:03:51 AM  
End Time : 22-Mar-2006 10:16:54 AM  
Scanning Time : 783 secs

### Product Data

Device Name : Motion Computing  
Serial No. : 202191420  
Type : Other  
Model : TS01  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 0.065 W  
Drift Time : 0 min(s)  
Length : 228 mm  
Width : 170 mm  
Depth : 23 mm  
Antenna Type : Internal - Main  
Orientation : Front  
Power Drift-Start : 0.141 W/kg  
Power Drift-Finish: 0.139 W/kg  
Power Drift (%) : -1.418

### Phantom Data

Name : APREL-Uni  
Type : Uni-Phantom  
Size (mm) : 280 x 280 x 200  
Serial No. : System Default  
Location : Center  
Description : Uni-Phantom

### Tissue Data

Type : BODY  
Serial No. : 2450  
Frequency : 2450.00 MHz  
Last Calib. Date : 22-Mar-2006  
Temperature : 20.00 °C  
Ambient Temp. : 22.00 °C  
Humidity : 45.00 RH%  
Epsilon : 53.11 F/m  
Sigma : 1.97 S/m  
Density : 1000.00 kg/cu. m

### Probe Data

Name : Probe 215 - RFEL  
Model : E020  
Type : E-Field Triangle  
Serial No. : 215  
Last Calib. Date : 10-Jun-2005  
Frequency : 2450.00 MHz  
Duty Cycle Factor: 1  
Conversion Factor: 4.6  
Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
Compression Point: 95.00 mV  
Offset : 1.56 mm