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CERTIFICATE OF COMPLIANCE SAR EVALUATION

Navini Networks
2240 Campbell Creek Rd., Suite 110
Richardson, TX 75082

Dates of Test: April 6, 7 & 8, 2004
Test Report Number: SAR.20050401

FCC ID:	PL6-2500-PCM19-R1
Model(s):	2.5-2.6 PCM
Serial No.:	Prototype Version FL (Identical to Production Unit)
Equipment Type:	PCMCIA Wireless Modem
Classification:	Certification
TX Frequency Range:	2500.0 – 2686.0 MHz
Maximum RF Output:	25.5 dB Conducted
Signal Modulation:	DSSS CDMA
Antenna Type (Length):	(1) Internal, (1) External Fixed (85mm x 18 mm)
FCC Rule Parts:	Part 27

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. C95.1-1992 and had been tested in accordance with the measurement procedures specified in IEEE 1528-2003 and OET Bulletin 65 Supp. C (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



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1. Introduction

This measurement report shows compliance of the Navini Network Model 2.5-2.6 PCM Version FL FCC ID: PL6-2500-PCM19-R1 with FCC Part 2, 1093, ET Docket 93-62 Rules for mobile and portable devices. The FCC has 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]

The test procedures, as described in ANSI C95.1 – 1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [2], ANSI C95.3 – 1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields [3], FCC OET Bulletin 65 Supp. C – 2001 [4], and IEEE Std.1528 – 2003 Recommended Practice [5] 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 (ρ).

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

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:

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m³)

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 April 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).

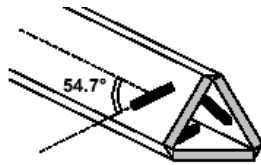
The overall uncertainty for the methodology and algorithms the ALSAS-10-U used during the SAR calculation was evaluated using the data from IEEE 1528 f3 algorithm:

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

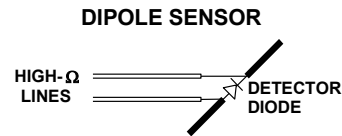
The probe used during the measurement process has been assessed to provide values for diode compression. These values are calculated during the probe calibration exercise and are used in the mathematical calculations for the assessment of SAR.

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:	217
Construction:	Triangular Core Touch Detection System
Frequency:	10MHz to 6GHz

Phantom

Phantom:	Uniphantom, Right Phantom, Left Phantom
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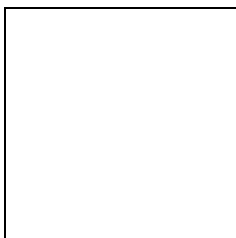


4. Probe and Dipole Calibration

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 90th 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].

Brain & Muscle Simulating Mixture Characterization

The brain and muscle mixtures consist of a glycol based saline 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 tissue dielectric parameters computed from the 4-Cole-Cole equations.

Table 5.1 Typical Composition of Ingredients for Tissue

Ingredients		Simulating Tissue	
		2450 MHz Brain	2450 MHz Muscle
Mixing Percentage			
Water		62.70	73.20
DGBE		0.00	26.70
Triton X-100		36.80	0.00
Sugar		0.00	0.00
Salt		0.50	0.04
Bacteriacide		0.00	0.00
HEC		0.00	0.00
Dielectric Constant	Target	39.20	52.70
Conductivity (S/m)	Target	1.80	1.95

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. 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.

7. ANSI/IEEE C95.1 – 1992 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 ¹ Brain	1.60	8.00
SPATIAL AVERAGE SAR ² Whole Body	0.08	0.40
SPATIAL PEAK SAR ³ Hands, Feet, Ankles, Wrists	4.00	20.00

¹ 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.

² The Spatial Average value of the SAR averaged over the whole body.

³ 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.

8. Measurement Uncertainty

See each data scan attached in Appendix B.

9. System Validation

Tissue Verification

Table 10.1 Measured Tissue Parameters

Date(s)	2450 MHz Muscle	06-Apr-2005		07-Apr-2005		08-Apr-2005	
Liquid Temperature (°C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ϵ		52.70	50.85	52.70	51.23	52.70	53.08
Conductivity: σ		1.950	1.89	1.950	2.01	1.950	1.96

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 by using the system kit(s). Brain Tissue was used to verify the system (Graphic Plots Attached) Linear extrapolation to 1 Watt.

Table 10.2 System Dipole Validation Target & Measured

System Validation Kit ALS-D-2450-S-2 S/N: RFE-278	2450 MHz Muscle	Targeted SAR _{1g} (W/kg)	Measure SAR _{1g} (W/kg)	Deviation (%)
06-Apr-2005		52.4	50.25	-4.3
07-Apr-2005		52.4	50.75	-3.3
08-Apr-2005		52.4	52.00	-0.7

See Appendix A for data plots.

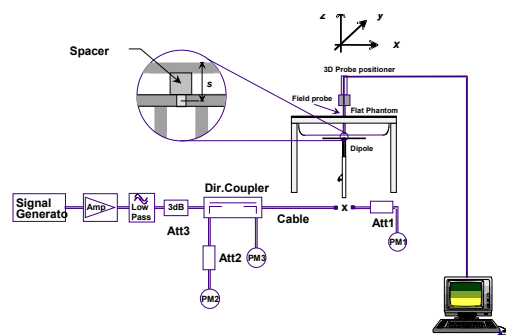


Figure 10.1 Dipole Validation Test Setup

10. 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. In order to verify that the device was tested at full power, conducted output power measurements were performed before and after each SAR measurement to confirm the output power. If a conducted power deviation of more than 5% occurred, the test was repeated.

Device Information

The internal antenna is measured through an isolation switch. The loss due to the isolation switch has been measured and noted for each test. The device operates at a 43% duty cycle. The power measured and recorded is the average power measured with the loss due to the isolation switch.

The 15mm separation measurement was not conducted on the HP and Dell computer as the touch position yielded as a distance from of the phantom of 15mm and 12mm respectively. Therefore, no measurements are required. The Toshiba computer has a distance of 20mm from the phantom. Therefore, the measurements were conduct on the Toshiba computer.

SAR Data Summary – 2450 MHz Muscle

MEASUREMENT RESULTS – Dell C810 Model PP01X									
EUT Position	Antenna	Frequency		Modulation	Isolation (dBm)	Begin / End Power			SAR (W/kg)
		MHz	Ch.			(dBm)		Battery	
Touch	External	2500	32942	DSSS CDMA	0	25.52	25.12	Standard	0.55
		2593	40879	DSSS CDMA	0	25.49	25.29	Standard	0.61
		2683	48574	DSSS CDMA	0	25.54	25.31	Standard	0.55
	INV F	2500	16599	DSSS CDMA	17.5	25.57	25.41	Standard	0.94
		2593	24527	DSSS CDMA	16.5	25.49	25.25	Standard	0.78
		2683	32182	DSSS CDMA	14.5	25.51	25.31	Standard	0.99
					Muscle 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

☒ Uni-phantom

☐ Right Head

SAR Configuration

☐ Head

☒ Body

3. Test Signal Call Mode

☒ Test Code

☐ Base Station Simulator

4. Test Configuration

☐ With Holster

☐ Without Holster

☒ N/A



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Vice President

SAR Data Summary – 2450 MHz Muscle

MEASUREMENT RESULTS – HP Pavilion zv5330									
EUT Position	Antenna	Frequency		Modulation	Isolation (dBm)	Begin / End Power			SAR (W/kg)
		MHz	Ch.			(dBm)		Battery	
Touch	External	2500	32942	DSSS CDMA	0	25.47	25.36	Standard	0.64
		2593	40879	DSSS CDMA	0	25.54	25.32	Standard	0.70
		2683	48574	DSSS CDMA	0	25.49	25.31	Standard	0.71
	INV F	2500	16599	DSSS CDMA	17.5	25.59	25.39	Standard	0.67
		2593	24527	DSSS CDMA	16.5	25.57	25.24	Standard	1.01
		2683	32182	DSSS CDMA	14.5	25.60	25.41	Standard	0.65
					Muscle 1.6 W/kg (mW/g) averaged over 1 gram				

5. Battery is fully charged for all tests.

Power Measured

☒ Conducted

☐ ERP

☐ EIRP

6. SAR Measurement

Phantom Configuration

☐ Left Head

☒ Uni-phantom

☐ Right Head

SAR Configuration

☐ Head

☒ Body

7. Test Signal Call Mode

☒ Test Code

☐ Base Station Simulator

8. Test Configuration

☐ With Holster

☐ Without Holster

☒ N/A



Jay M. Moulton
Vice President

SAR Data Summary – 2450 MHz Muscle

MEASUREMENT RESULTS – Toshiba Satellite A75-S209									
EUT Position	Antenna	Frequency		Modulation	Isolation (dBm)	Begin / End Power			SAR (W/kg)
		MHz	Ch.			(dBm)		Battery	
Touch	External	2500	32942	DSSS CDMA	0	25.48	25.33	Standard	0.65
		2593	40879	DSSS CDMA	0	25.51	25.27	Standard	0.65
		2683	48574	DSSS CDMA	0	25.46	25.29	Standard	0.54
	INV F1	2500	16599	DSSS CDMA	17.5	25.60	25.41	Standard	0.60
		2593	24527	DSSS CDMA	16.5	25.49	25.25	Standard	0.76
		2683	32182	DSSS CDMA	14.5	25.51	25.31	Standard	0.55
						Muscle 1.6 W/kg (mW/g) averaged over 1 gram			

9. Battery is fully charged for all tests.

Power Measured

☒ Conducted

☐ ERP

☐ EIRP

10. SAR Measurement

Phantom Configuration

☐ Left Head

☒ Uni-phantom

☐ Right Head

SAR Configuration

☐ Head

☒ Body

11. Test Signal Call Mode

☒ Test Code

☐ Base Station Simulator

12. Test Configuration

☐ With Holster

☐ Without Holster

☒ N/A



Jay M. Moulton
Vice President

SAR Data Summary – 2450 MHz Muscle

MEASUREMENT RESULTS – Toshiba Satellite A75-S209									
EUT Position	Antenna	Frequency		Modulation	Isolation (dBm)	Begin / End Power			SAR (W/kg)
		MHz	Ch.			(dBm)		Battery	
15 mm	External	2500	32942	DSSS CDMA	0	25.52	25.42	Standard	0.54
		2593	40879	DSSS CDMA	0	25.55	25.37	Standard	0.68
		2683	48574	DSSS CDMA	0	25.49	25.32	Standard	0.55
	INV F1	2500	16599	DSSS CDMA	17.5	25.52	25.39	Standard	0.66
		2593	24527	DSSS CDMA	16.5	25.55	25.33	Standard	0.66
		2683	32182	DSSS CDMA	14.5	25.47	25.29	Standard	0.50
					Muscle 1.6 W/kg (mW/g) averaged over 1 gram				

13. Battery is fully charged for all tests.

Power Measured

☒ Conducted

☐ ERP

☐ EIRP

14. SAR Measurement

Phantom Configuration

☐ Left Head

☒ Uni-phantom

☐ Right Head

SAR Configuration

☐ Head

☒ Body

15. Test Signal Call Mode

☒ Test Code

☐ Base Station Simulator

16. Test Configuration

☐ With Holster

☐ Without Holster

☒ N/A



Jay M. Moulton
Vice President

11. 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	06/10/2005	217
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-835-S-2	02/20/2006	RFE-274
Aprel Validation Dipole ALS-D-1900-S-2	02/20/2006	RFE-277
Aprel Validation Dipole ALS-D-2450-S-2	02/20/2006	RFE-278
Aprel Validation Dipole ALS-D-900-S-2	02/20/2006	RFE-275
Agilent (HP) 437B Power Meter	12/18/2005	3125U08837
Agilent (HP) 8481B Power Sensor	05/26/2005	3318A05384
Agilent (HP) 8350B Signal Generator	03/03/2006	2749A10226
Agilent (HP) 83525A RF Plug-In	03/03/2006	2647A01172
Agilent (HP) 8753C Vector Network Analyzer	02/03/2006	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	02/03/2006	2904A00595
Aprel Dielectric Probe Assembly	N/A	0011
Microwave Power Devices 510-10E Amplifier	3/09/2005	6063-001
Microwave Power Devices 1020-9E Amplifier	03/09/2005	5618-1
Brain Equivalent Matter (835 MHz)	N/A	N/A
Brain Equivalent Matter (1900 MHz)	N/A	N/A
Brain Equivalent Matter (900 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 (900 MHz)	N/A	N/A
Muscle Equivalent Matter (2450 MHz)	N/A	N/A
Muscle Equivalent Matter (5200 MHz)	N/A	N/A

12. 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]

13. 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 – 1991, 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 – 1991, 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.

Appendix A – System Validation Plots and Data

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*****
Test Result for UIM Dielectric Parameter
Wed 06/Apr/2005 10:11:59
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
2.1500	53.10	1.66	51.38	1.48
2.2500	52.97	1.76	51.25	1.59
2.3500	52.83	1.85	51.24	1.71
2.4500	52.70	1.95	50.85	1.89
2.5500	52.57	2.09	50.47	2.06
2.6500	52.45	2.23	49.96	2.19
2.7500	52.32	2.38	49.41	2.31

```
*****
Test Result for UIM Dielectric Parameter
Thu 07/Apr/2005 08:00:47
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
2.0500	53.23	1.57	53.29	1.49
2.1500	53.10	1.66	52.84	1.57
2.2500	52.97	1.76	52.30	1.68
2.3500	52.83	1.85	51.64	1.79
2.4500	52.70	1.95	51.23	2.01
2.5500	52.57	2.09	50.71	2.10
2.6500	52.45	2.23	50.72	2.25
2.7500	52.32	2.38	51.06	2.41
2.8500	52.19	2.52	51.46	2.55

Test Result for UIM Dielectric Parameter

Fri 08/Apr/2005 06:56:46

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
2.0500	53.23	1.57	54.96	1.41
2.1500	53.10	1.66	54.34	1.56
2.2500	52.97	1.76	54.03	1.69
2.3500	52.83	1.85	53.71	1.83
2.4500	52.70	1.95	53.08	1.96
2.5500	52.57	2.09	52.73	2.11
2.6500	52.45	2.23	52.43	2.25
2.7500	52.32	2.38	51.95	2.41
2.8500	52.19	2.52	51.54	2.53

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 10:18:55 AM
End Time : 06-Apr-2005 10:31:16 AM
Scanning Time : 741 secs

Product Data

Device Name : Validation
Serial No. : 2450
Type : Dipole
Model : ALS-D-2450-S-2
Frequency : 2450.00 MHz
Max. Transmit Pwr : 0.04 W
Drift Time : 0 min(s)
Length : 51.5
Width : 3.6
Depth : 30.4
Antenna Type : Internal
Power Drift-Start : 1.16
Power Drift-Finish : 1.11
Power Drift : 0.05

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

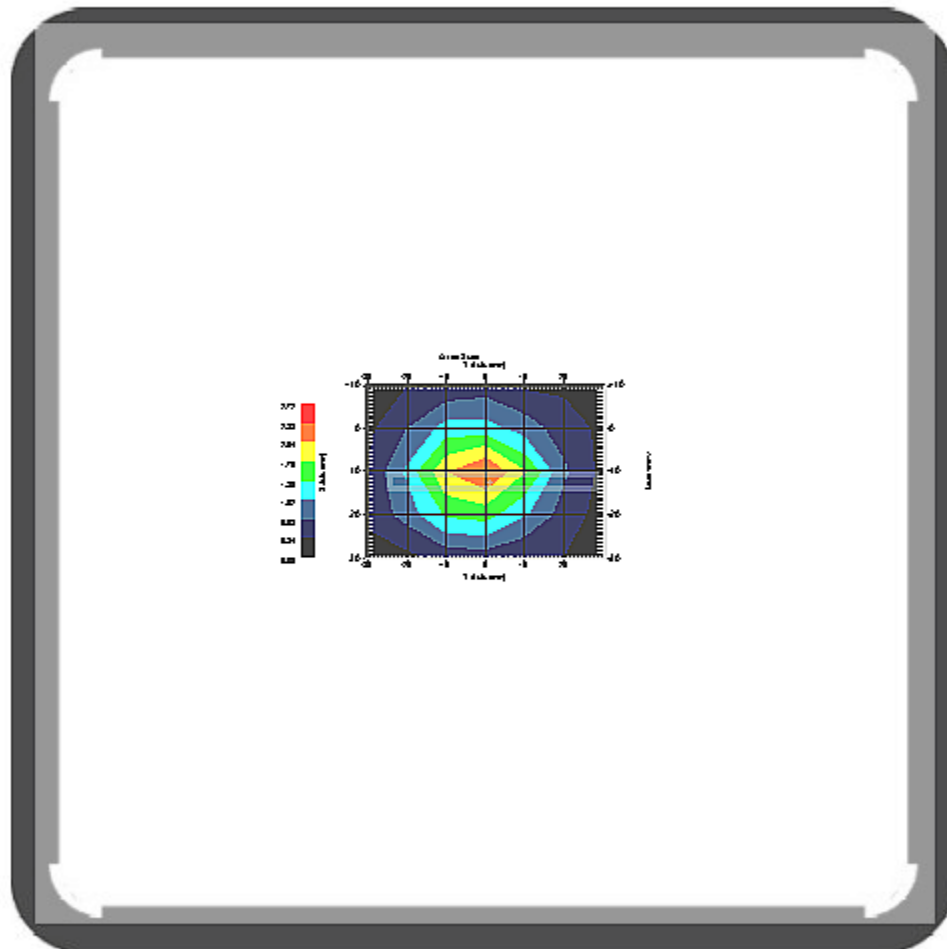
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 06-Apr-2005
Set-up Time : 10:14:56 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2450



1 gram SAR value : 2.01 W/kg
10 gram SAR value : 1.00 W/kg
Area Scan Peak SAR : 2.38
Zoom Scan Peak SAR : 4.51

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 08:20:55 AM
End Time : 07-Apr-2005 08:34:11 AM
Scanning Time : 795 secs

Product Data

Device Name : Validation
Serial No. : 2450
Type : Dipole
Model : ALS-D-2450-S-2
Frequency : 2450.00 MHz
Max. Transmit Pwr : 0.04 W
Drift Time : 0 min(s)
Length : 51.5
Width : 3.6
Depth : 30.4
Antenna Type : Internal
Power Drift-Start : 1.48
Power Drift-Finish : 1.31
Power Drift : 0.17

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

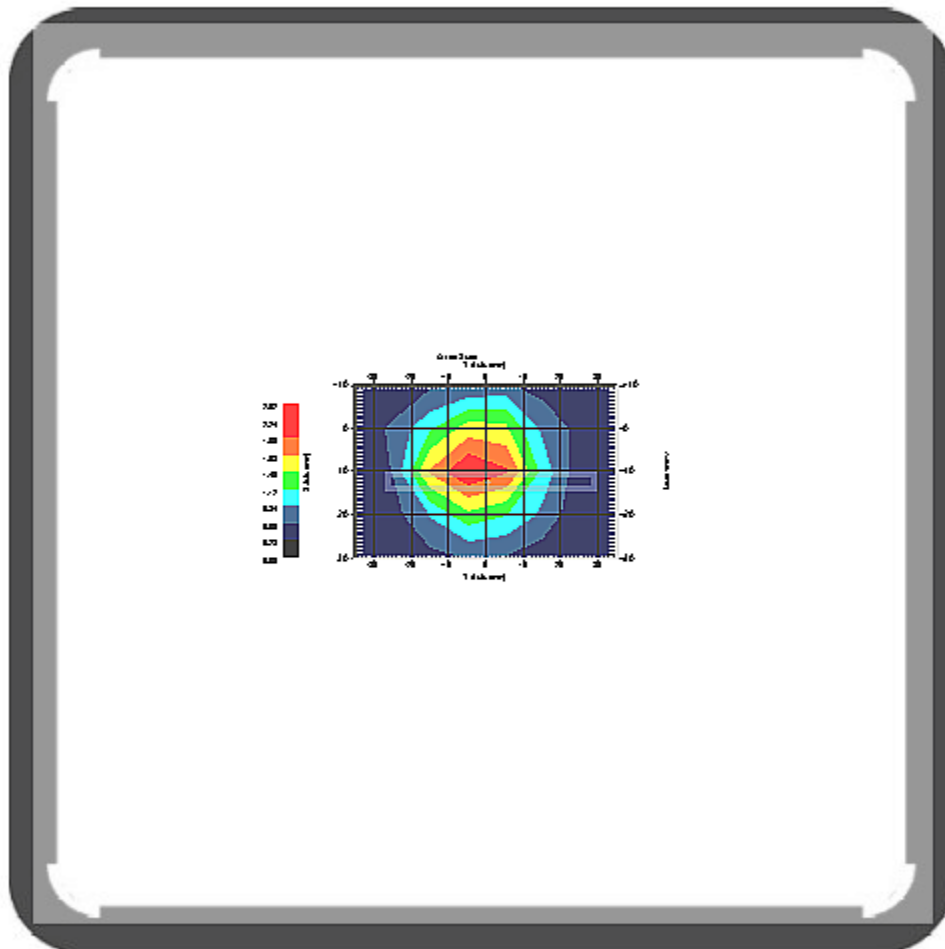
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:07:29 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2450



1 gram SAR value : 2.03 W/kg
10 gram SAR value : 1.06 W/kg
Area Scan Peak SAR : 2.24
Zoom Scan Peak SAR : 4.92

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	0.4	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 07:15:17 AM
End Time : 08-Apr-2005 07:28:24 AM
Scanning Time : 787 secs

Product Data

Device Name : Validation
Serial No. : 2450
Type : Dipole
Model : ALS-D-2450-S-2
Frequency : 2450.00 MHz
Max. Transmit Pwr : 0.04 W
Drift Time : 0 min(s)
Length : 51.5
Width : 3.6
Depth : 30.4
Antenna Type : Internal
Power Drift-Start : 1.48
Power Drift-Finish : 1.18
Power Drift : 0.30

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

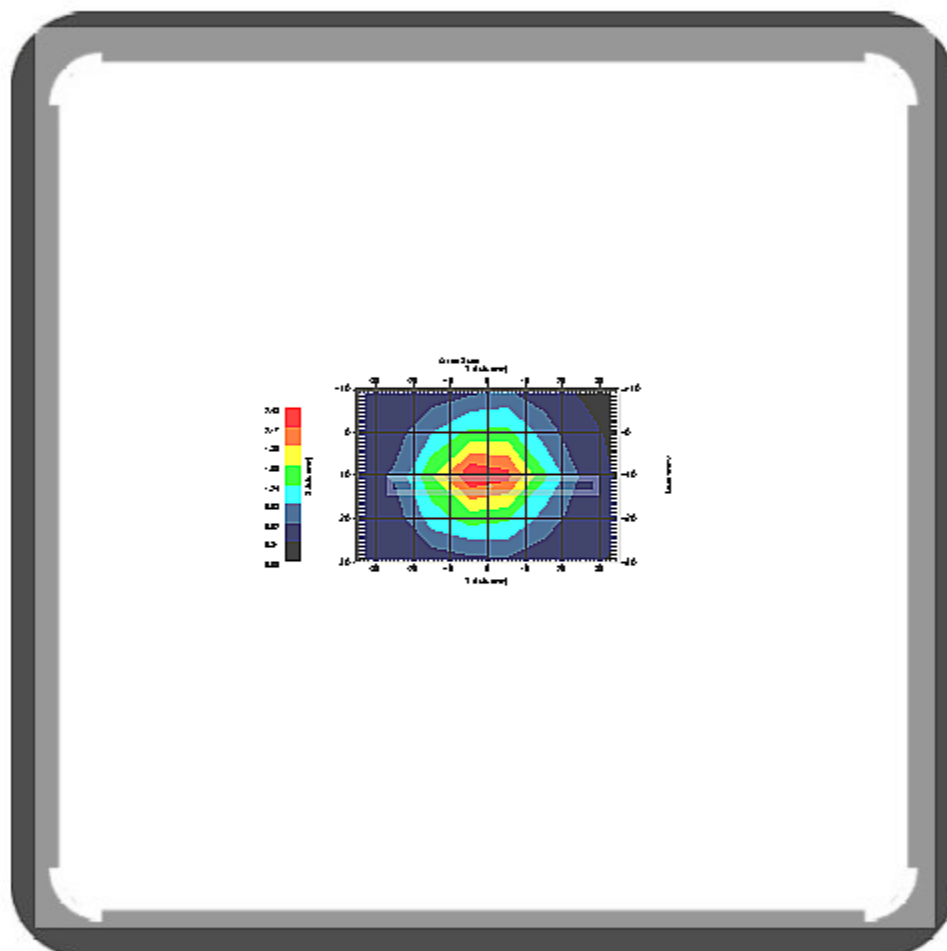
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 08-Apr-2005
Set-up Time : 07:01:00 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2450



1 gram SAR value : 2.08 W/kg
10 gram SAR value : 1.07 W/kg
Area Scan Peak SAR : 2.45
Zoom Scan Peak SAR : 4.77

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	0.3	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

Appendix B – SAR Test Data Plots

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 09:47:32 AM
End Time : 07-Apr-2005 10:08:23 AM
Scanning Time : 1251 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.53
Power Drift-Finish : 0.53
Power Drift : 0.00

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

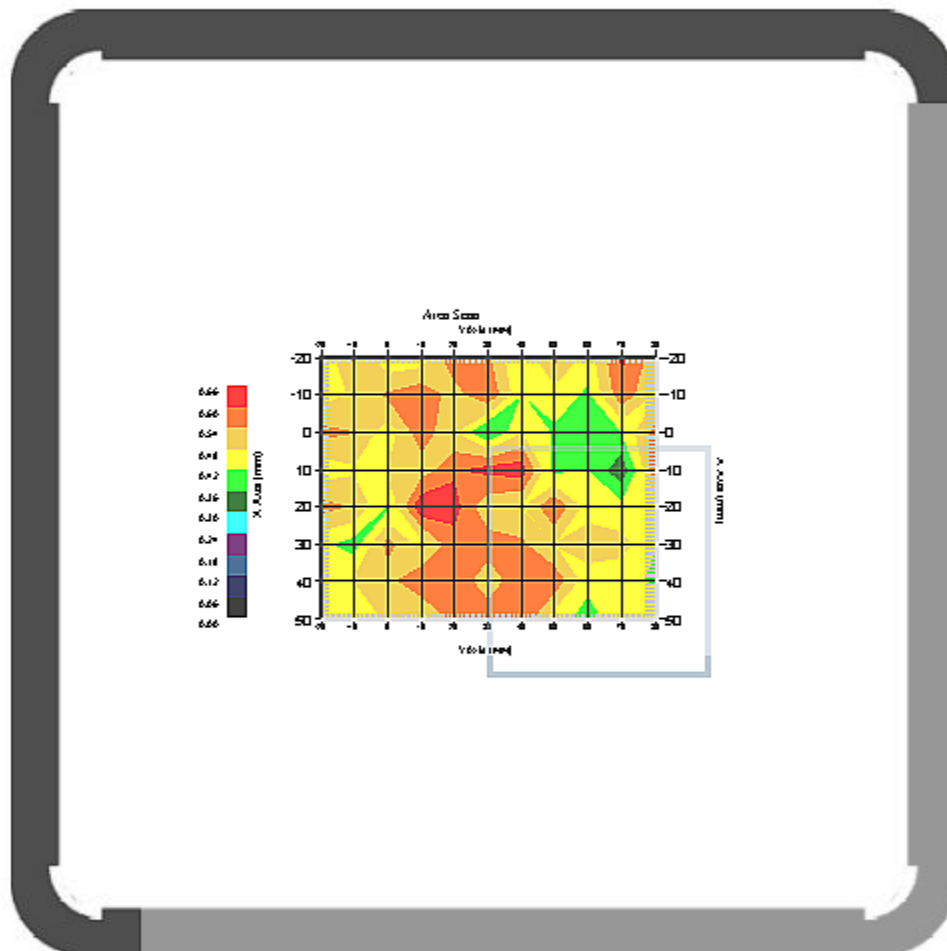
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Low - 2500



1 gram SAR value : 0.55 W/kg
10 gram SAR value : 0.49 W/kg
Area Scan Peak SAR : 0.65
Zoom Scan Peak SAR : 1.27

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 12:30:37 PM
End Time : 06-Apr-2005 12:51:18 PM
Scanning Time : 1241 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.34
Power Drift-Finish : 0.52
Power Drift : 0.18

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

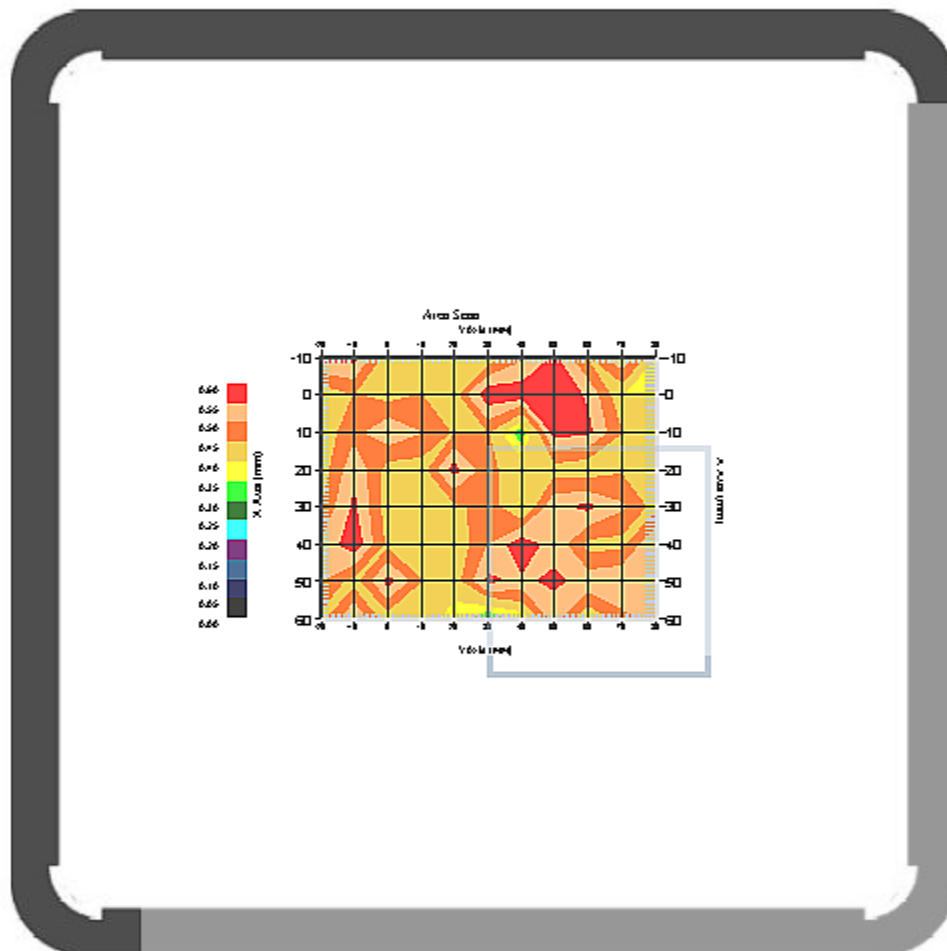
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 06-Apr-2005
 Set-up Time : 10:55:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Mid - 2593



1 gram SAR value : 0.61 W/kg
 10 gram SAR value : 0.52 W/kg
 Area Scan Peak SAR : 0.59
 Zoom Scan Peak SAR : 1.31

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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 11:59:39 AM
End Time : 07-Apr-2005 12:22:02 PM
Scanning Time : 1343 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.48
Power Drift-Finish : 0.53
Power Drift : 0.05

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

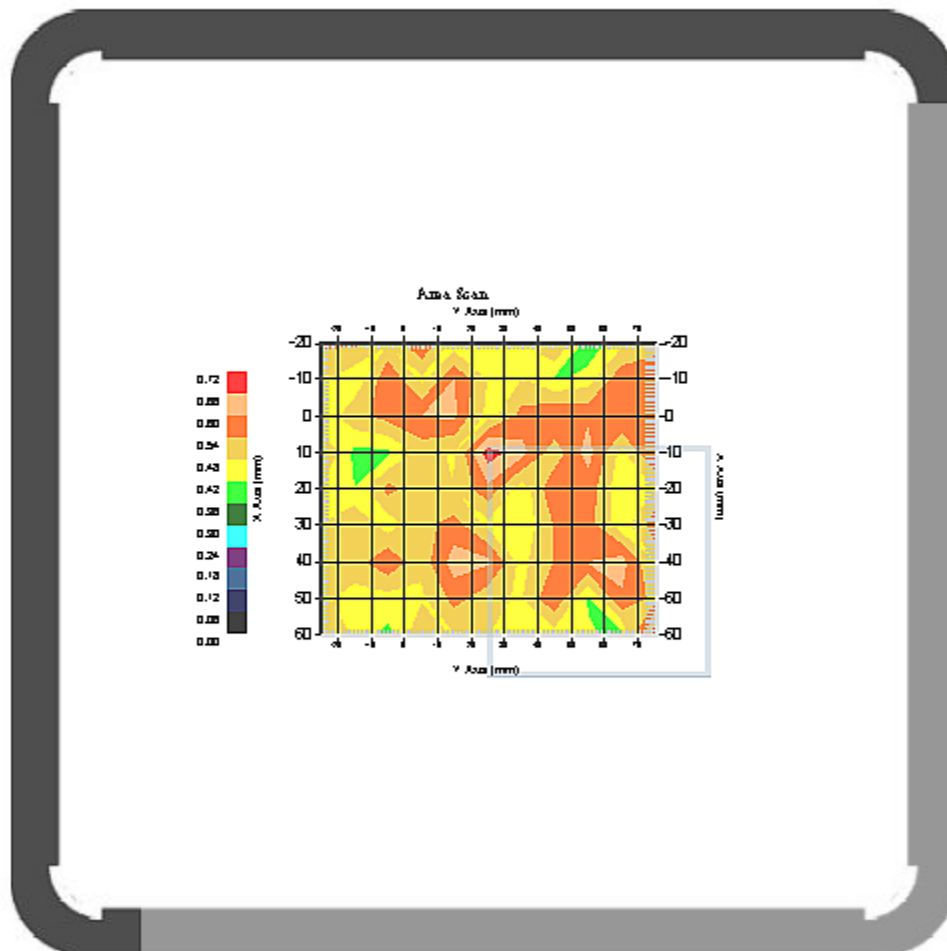
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : High - 2683



1 gram SAR value : 0.55 W/kg
 10 gram SAR value : 0.49 W/kg
 Area Scan Peak SAR : 0.71
 Zoom Scan Peak SAR : 1.22

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 04:30:17 PM
End Time : 07-Apr-2005 04:49:45 PM
Scanning Time : 1168 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.80
Power Drift-Finish : 0.67
Power Drift : 0.13

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

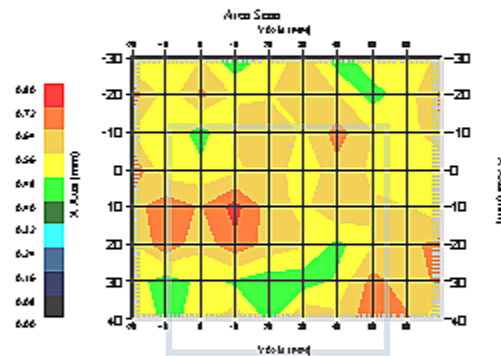
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Low - 2500



1 gram SAR value : 0.94 W/kg
 10 gram SAR value : 0.73 W/kg
 Area Scan Peak SAR : 0.75
 Zoom Scan Peak SAR : 2.00

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 02:15:52 PM
End Time : 07-Apr-2005 02:35:25 PM
Scanning Time : 1173 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.52
Power Drift-Finish : 0.54
Power Drift : 0.02

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

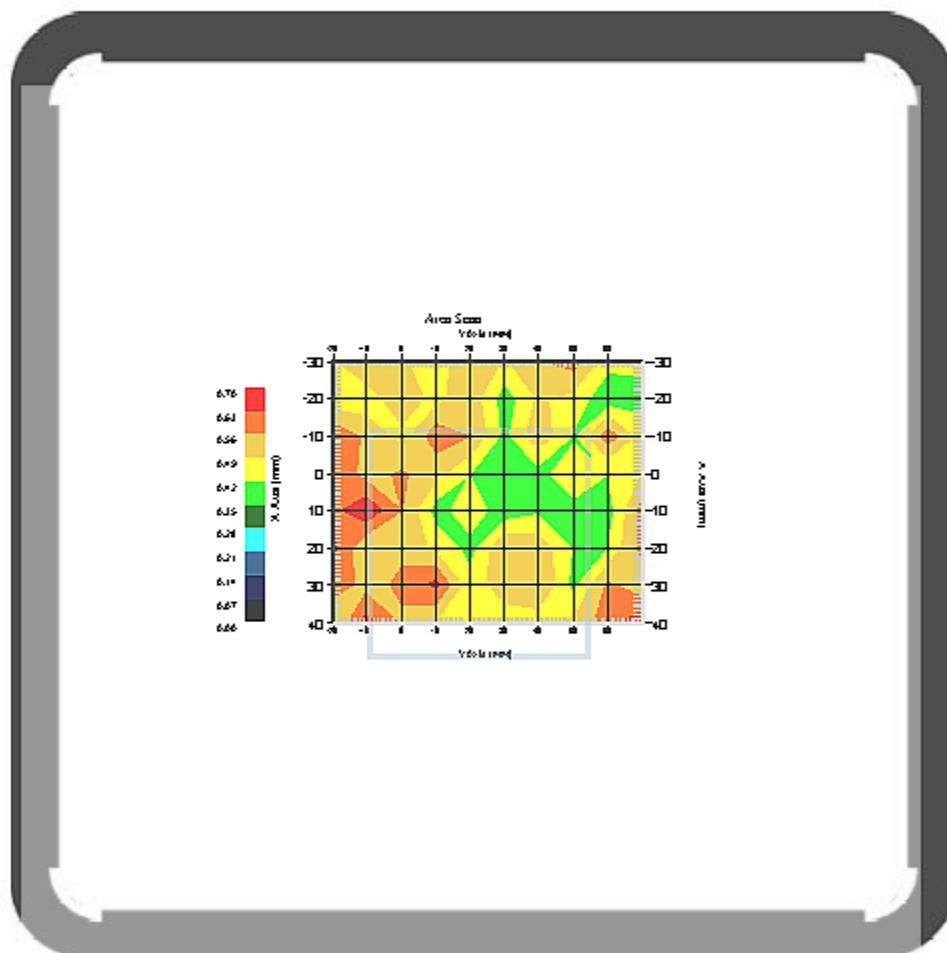
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Mid - 2593



1 gram SAR value : 0.78 W/kg
 10 gram SAR value : 0.63 W/kg
 Area Scan Peak SAR : 0.69
 Zoom Scan Peak SAR : 1.78

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 08:46:37 AM
End Time : 08-Apr-2005 09:07:14 AM
Scanning Time : 1237 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.45
Power Drift-Finish : 0.45
Power Drift : 0.00

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

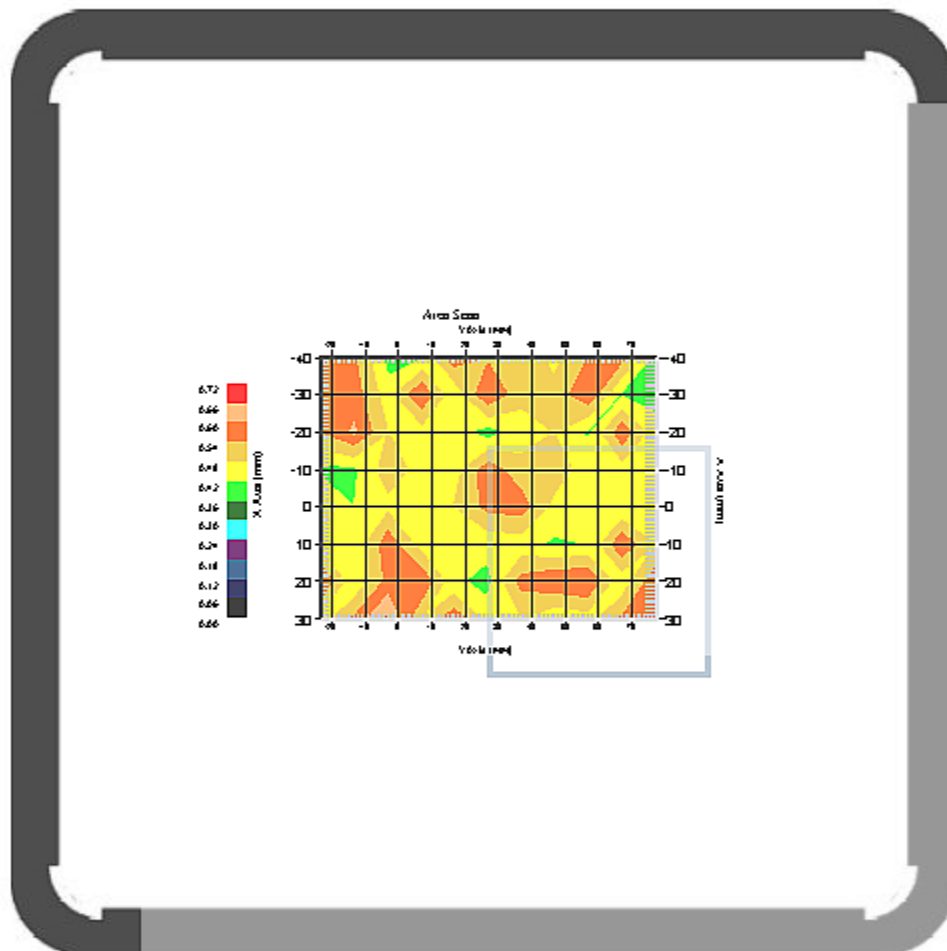
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

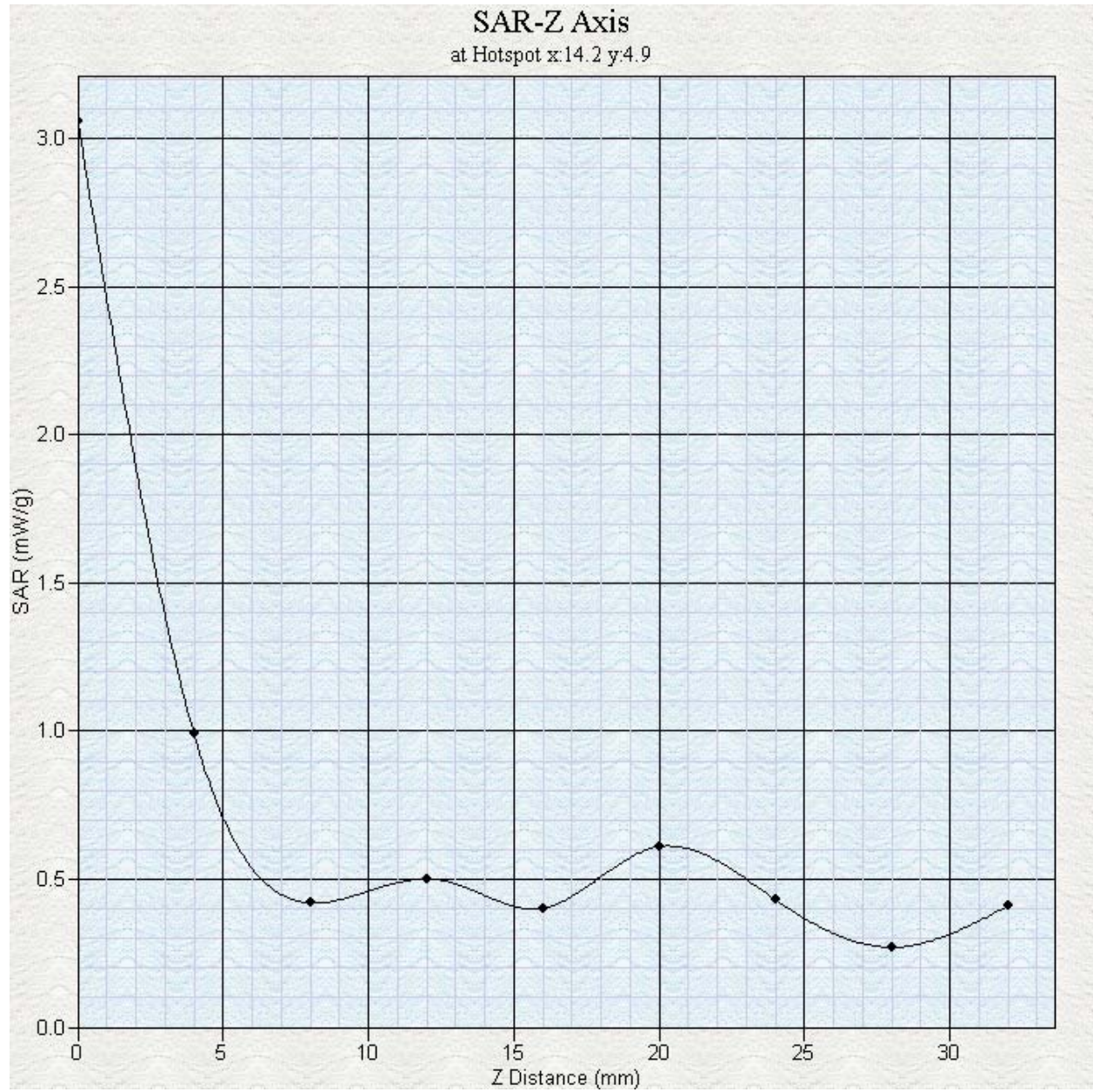
Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 08-Apr-2005
 Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : High - 2683



1 gram SAR value : 0.99 W/kg
 10 gram SAR value : 0.63 W/kg
 Area Scan Peak SAR : 0.67
 Zoom Scan Peak SAR : 3.06



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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 01:59:12 PM
End Time : 06-Apr-2005 02:21:43 PM
Scanning Time : 1351 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 80
Width : 70
Depth : 20
Antenna Type : External
Power Drift-Start : 0.22
Power Drift-Finish : 0.37
Power Drift : 0.15

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

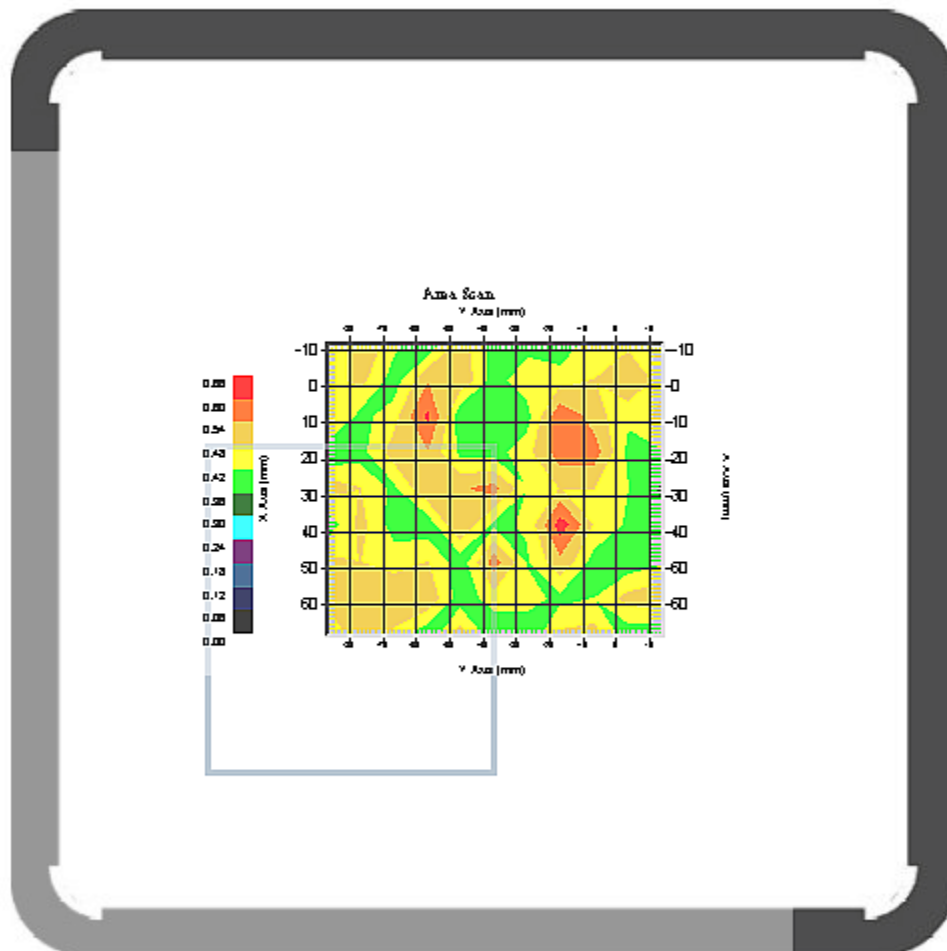
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 06-Apr-2005
 Set-up Time : 10:55:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Low - 2500



1 gram SAR value : 0.64 W/kg
 10 gram SAR value : 0.51 W/kg
 Area Scan Peak SAR : 0.63
 Zoom Scan Peak SAR : 1.62

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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 11:46:54 AM
End Time : 06-Apr-2005 12:07:49 AM
Scanning Time : 1255 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 80
Width : 70
Depth : 20
Antenna Type : External
Power Drift-Start : 0.36
Power Drift-Finish : 0.43
Power Drift : 0.07

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

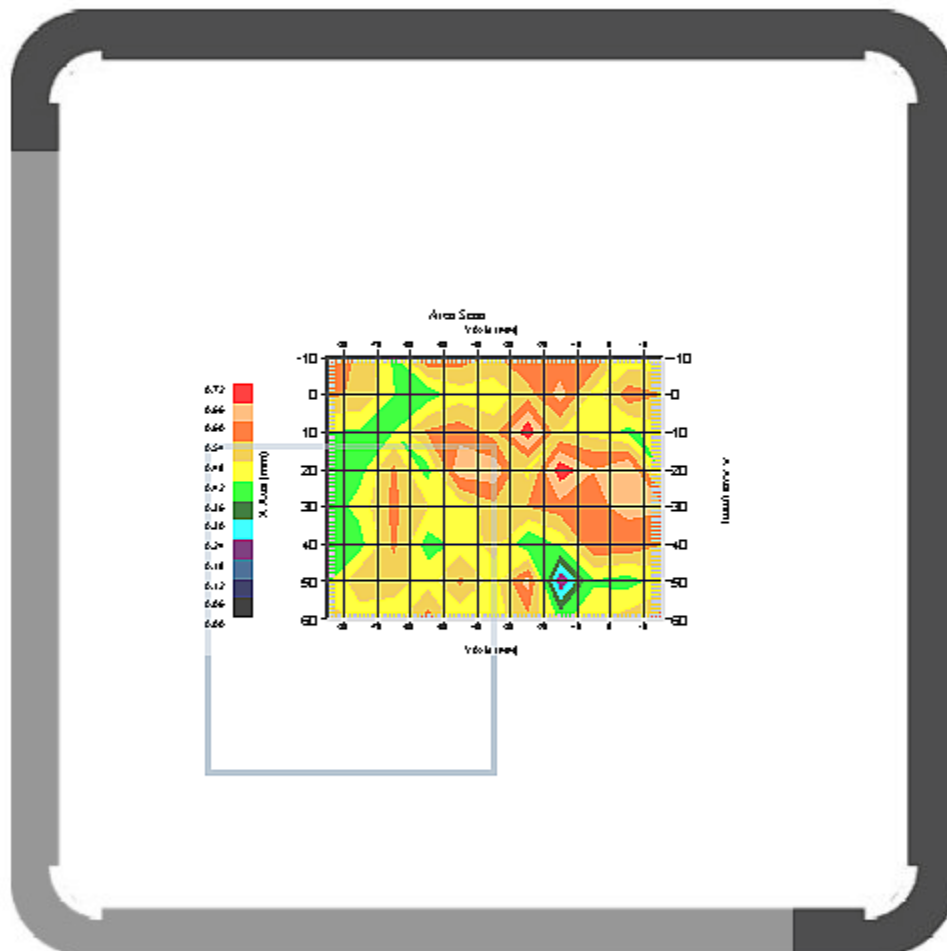
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 06-Apr-2005
 Set-up Time : 10:55:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Mid - 2593



1 gram SAR value : 0.70 W/kg
 10 gram SAR value : 0.56 W/kg
 Area Scan Peak SAR : 0.71
 Zoom Scan Peak SAR : 1.74

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 10:31:31 AM
End Time : 07-Apr-2005 10:53:50 AM
Scanning Time : 1339 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 80
Width : 70
Depth : 20
Antenna Type : External
Power Drift-Start : 0.59
Power Drift-Finish : 0.60
Power Drift : 0.01

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

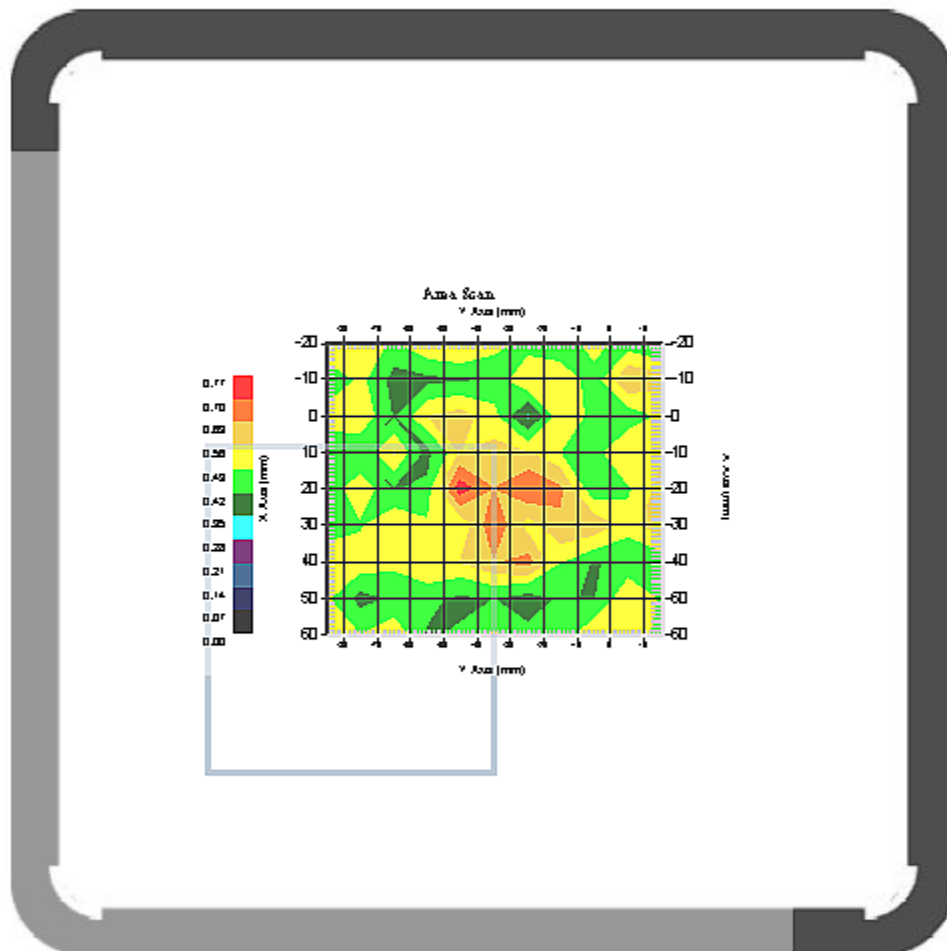
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : High - 2683



1 gram SAR value : 0.71 W/kg
 10 gram SAR value : 0.58 W/kg
 Area Scan Peak SAR : 0.74
 Zoom Scan Peak SAR : 1.85

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 02:58:30 PM
End Time : 07-Apr-2005 03:17:58 PM
Scanning Time : 1168 secs

Product Data
Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.40
Power Drift-Finish : 0.51
Power Drift : 0.11

Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : validation

Tissue Data
Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

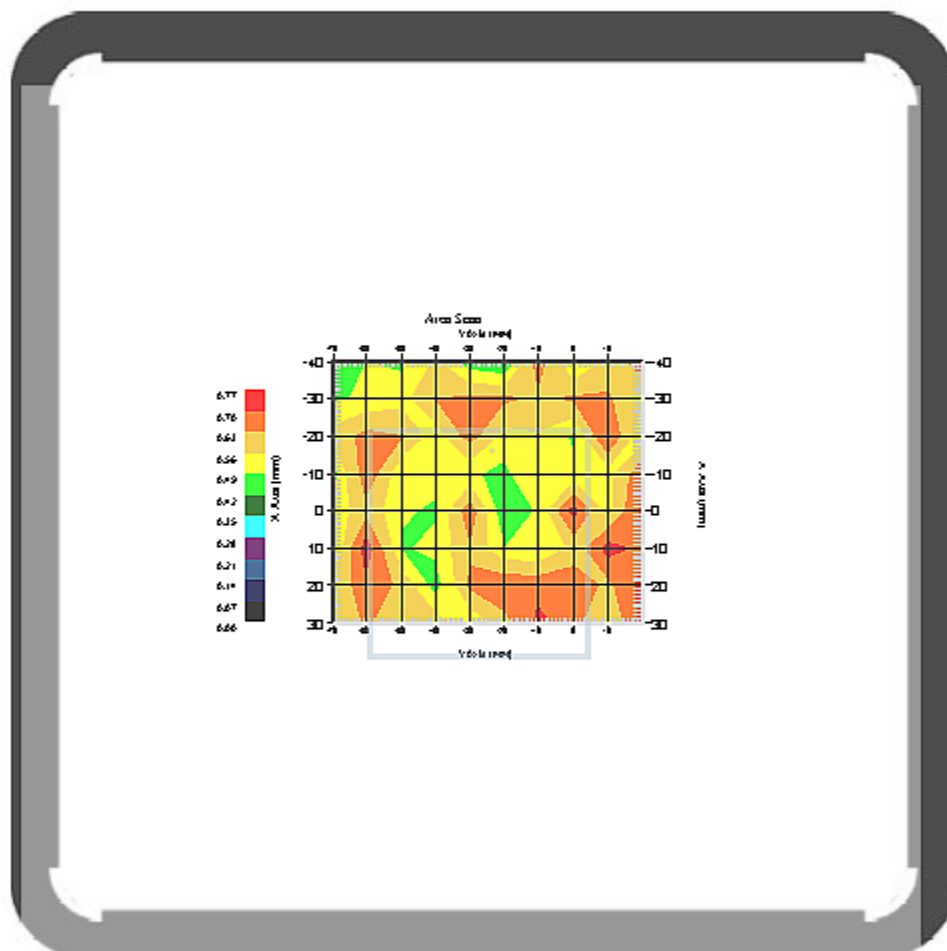
Probe Data
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Low - 2500



1 gram SAR value : 0.67 W/kg
10 gram SAR value : 0.55 W/kg
Area Scan Peak SAR : 0.74
Zoom Scan Peak SAR : 1.45

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 12:45:01 PM
End Time : 07-Apr-2005 01:04:29 PM
Scanning Time : 1168 secs

Product Data
Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.58
Power Drift-Finish : 0.56
Power Drift : 0.02

Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : validation

Tissue Data
Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

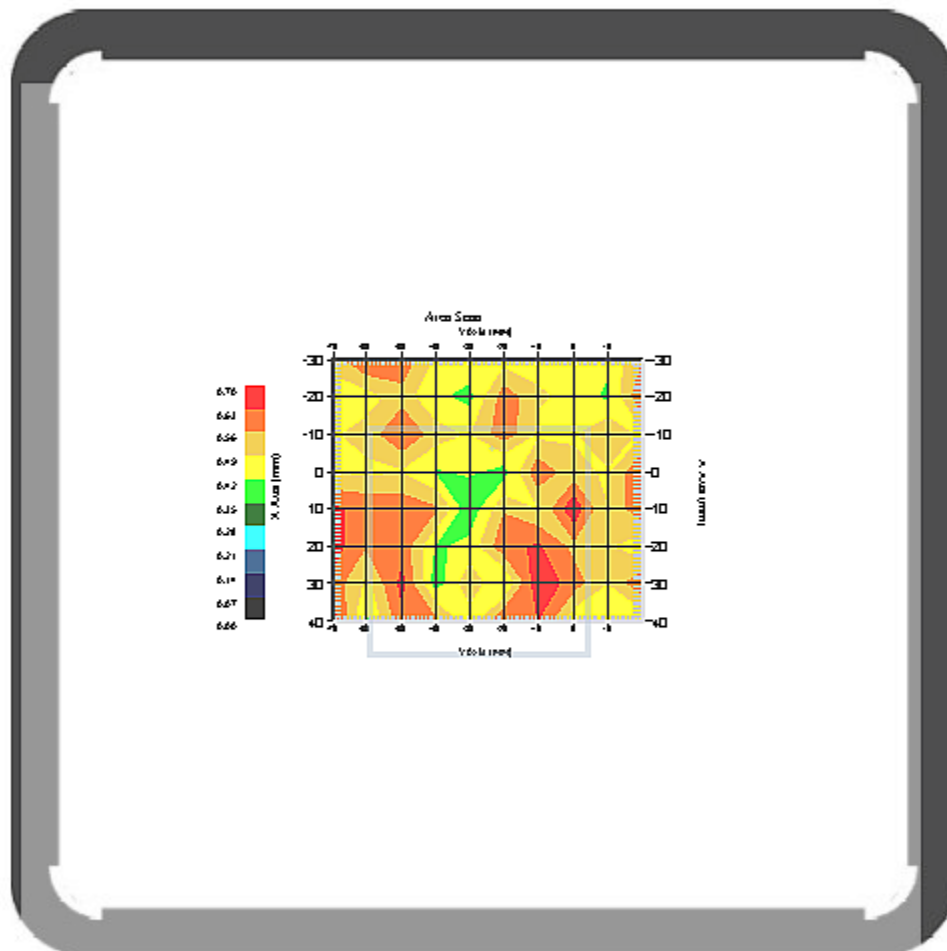
Probe Data
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

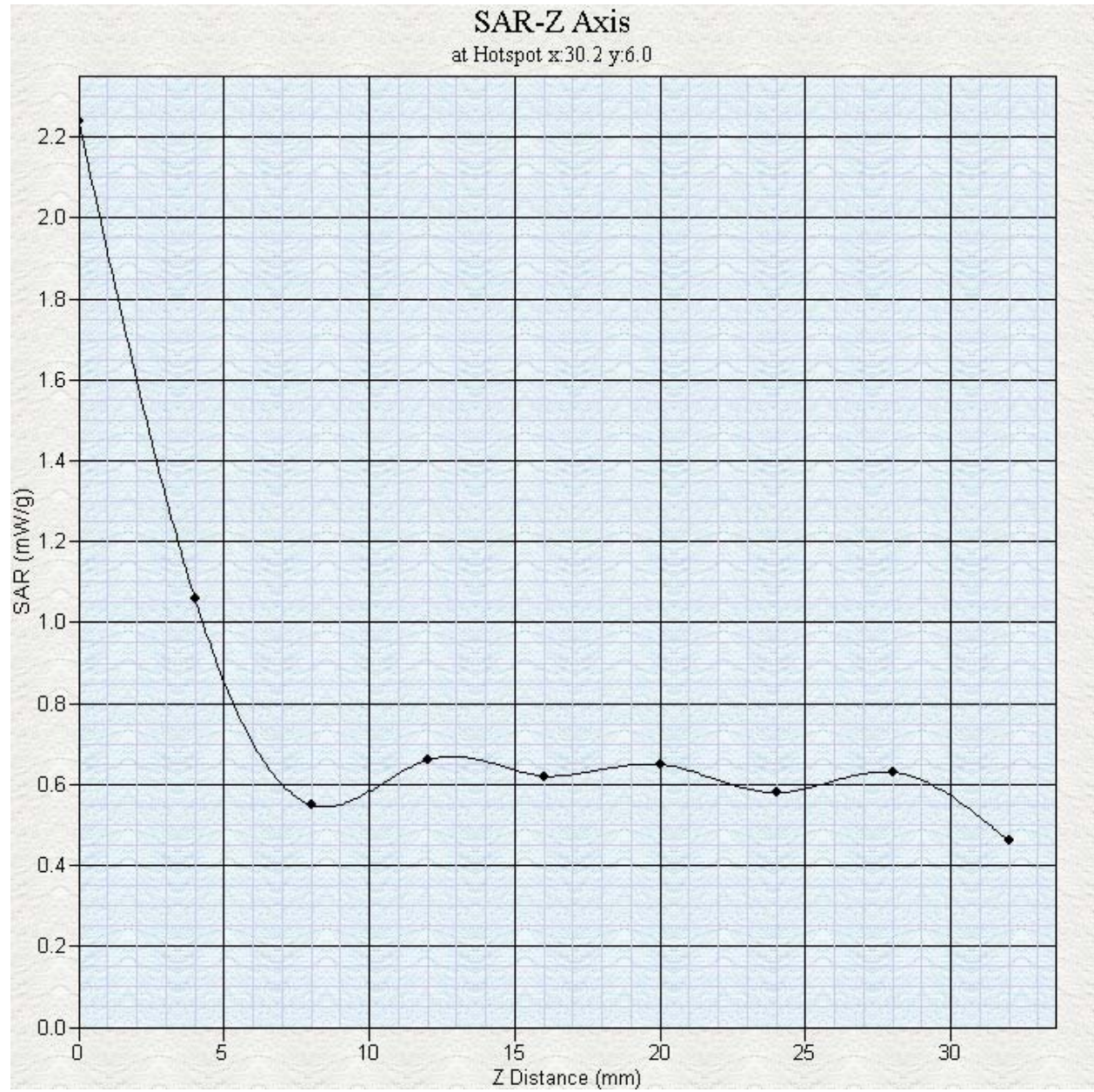
Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2593



1 gram SAR value : 1.01 W/kg
10 gram SAR value : 0.72 W/kg
Area Scan Peak SAR : 0.69
Zoom Scan Peak SAR : 2.24



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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 10:17:20 AM
End Time : 08-Apr-2005 10:38:21 AM
Scanning Time : 1261 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 80
Width : 70
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.58
Power Drift-Finish : 0.35
Power Drift : 0.23

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

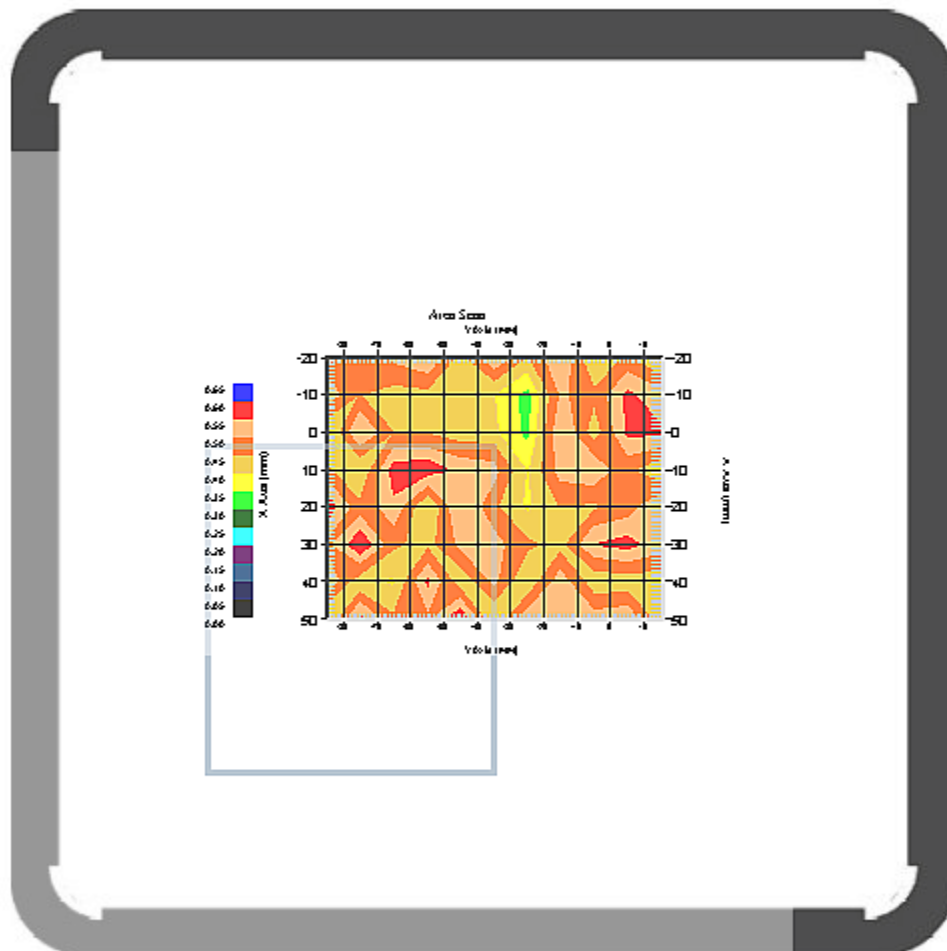
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 08-Apr-2005
 Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : High - 2683



1 gram SAR value : 0.64 W/kg
 10 gram SAR value : 0.56 W/kg
 Area Scan Peak SAR : 0.60
 Zoom Scan Peak SAR : 1.18

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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 11:16:08 AM
End Time : 07-Apr-2005 11:38:35 AM
Scanning Time : 1347 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.55
Power Drift-Finish : 0.36
Power Drift : 0.19

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

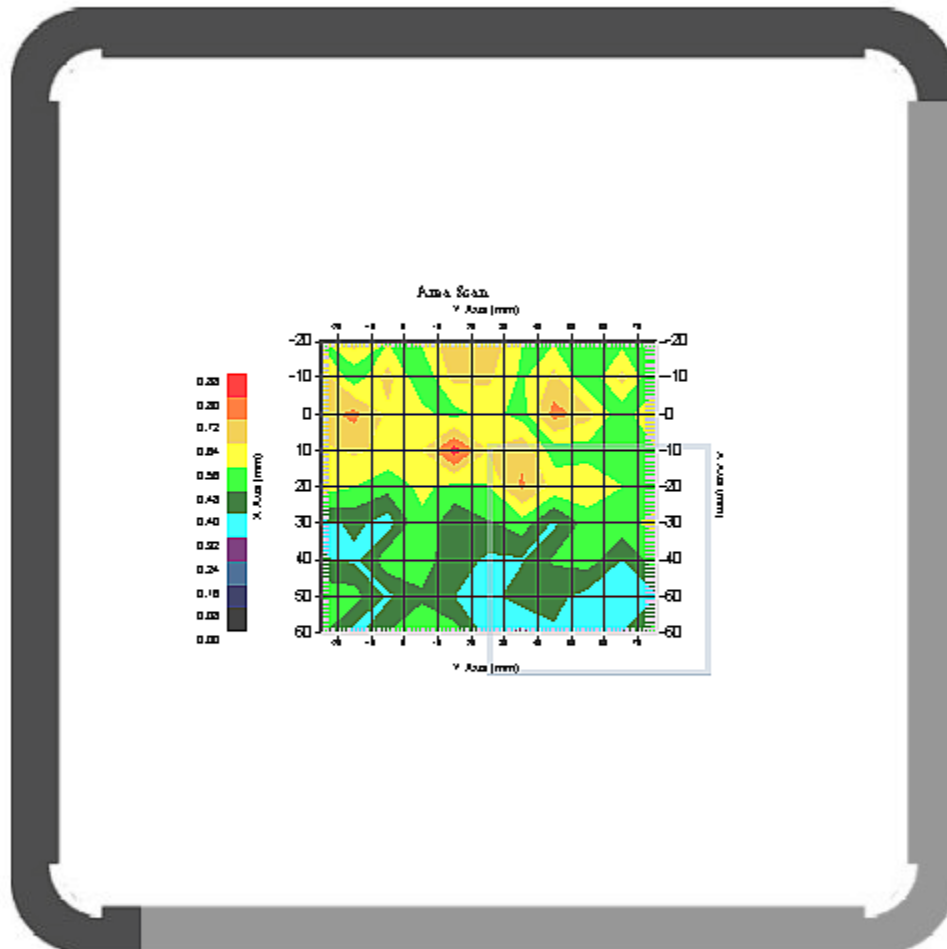
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Low - 2500



1 gram SAR value : 0.65 W/kg
 10 gram SAR value : 0.50 W/kg
 Area Scan Peak SAR : 0.83
 Zoom Scan Peak SAR : 1.64

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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 11:00:32 AM
End Time : 06-Apr-2005 11:21:37 AM
Scanning Time : 1265 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.43
Power Drift-Finish : 0.39
Power Drift : 0.04

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

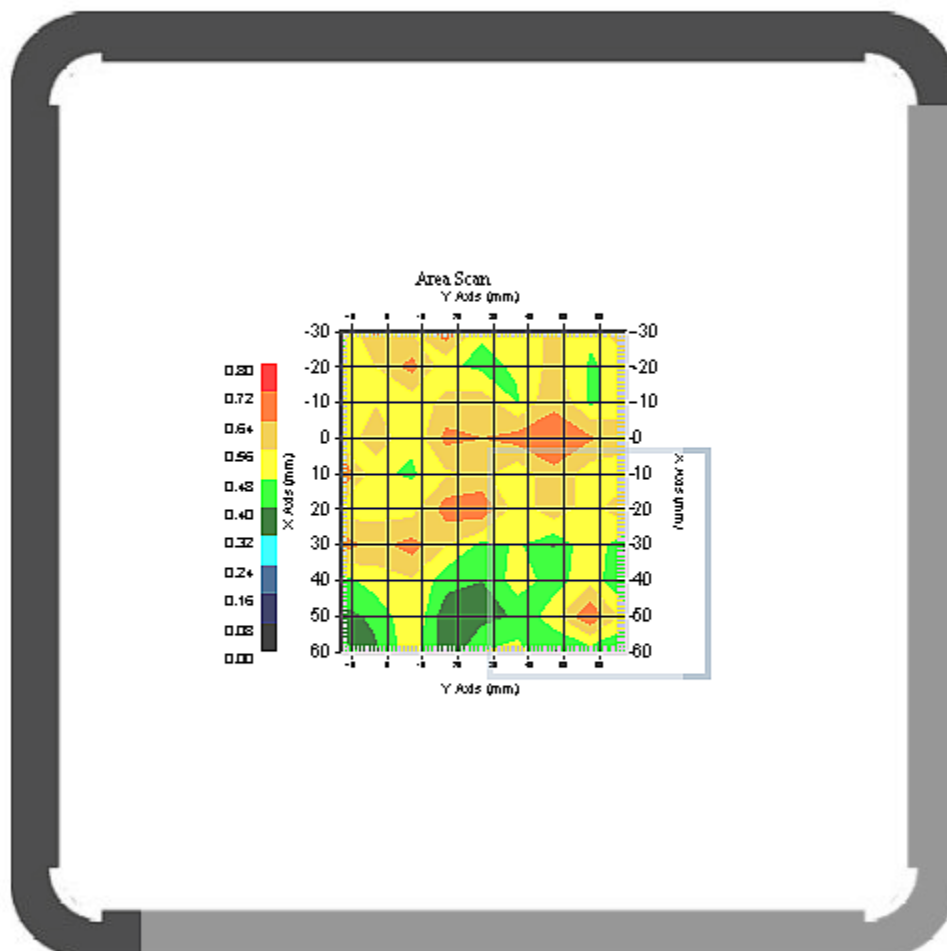
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 06-Apr-2005
 Set-up Time : 10:55:58 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : Mid - 2593



1 gram SAR value : 0.65 W/kg
 10 gram SAR value : 0.57 W/kg
 Area Scan Peak SAR : 0.72
 Zoom Scan Peak SAR : 1.40

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 01:32:21 PM
End Time : 07-Apr-2005 01:54:52 PM
Scanning Time : 1351 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.49
Power Drift-Finish : 0.38
Power Drift : 0.11

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

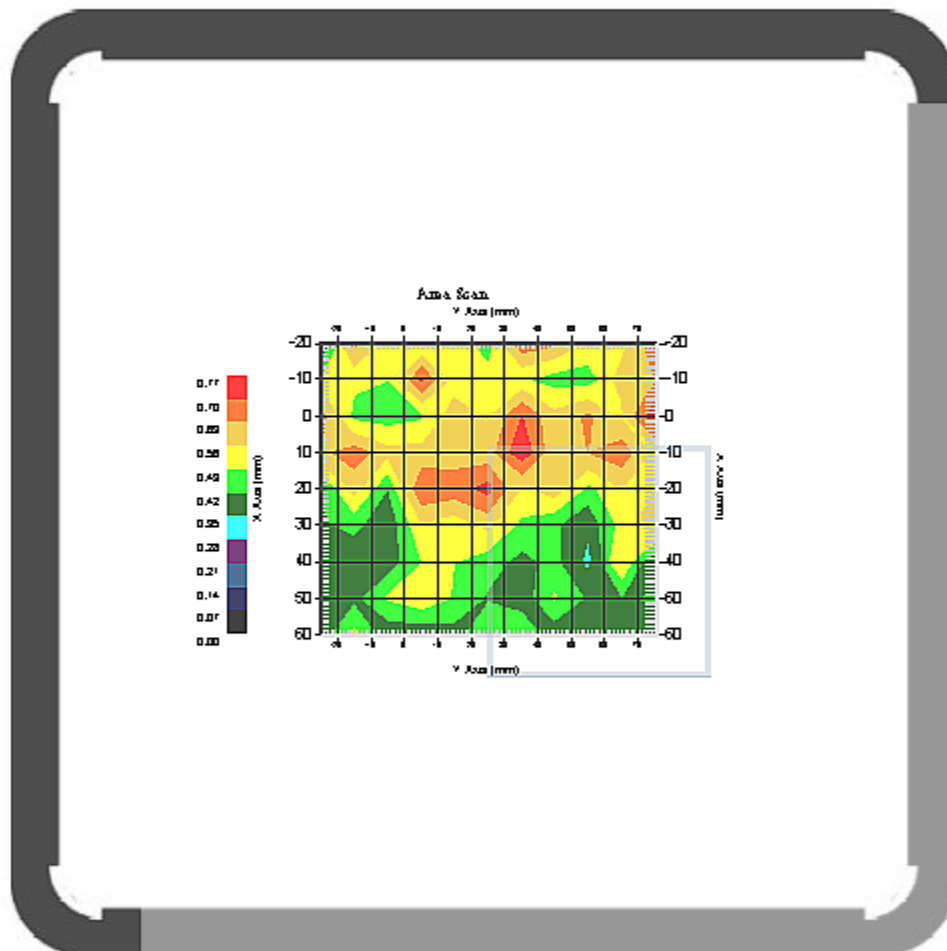
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
 Scan Type : Complete
 Set-up Date : 07-Apr-2005
 Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
 Separation : 0
 Channel : High - 2683



1 gram SAR value : 0.54 W/kg
 10 gram SAR value : 0.44 W/kg
 Area Scan Peak SAR : 0.76
 Zoom Scan Peak SAR : 1.32

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 05:15:49 PM
End Time : 07-Apr-2005 05:35:20 PM
Scanning Time : 1171 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : Prototype
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.41
Power Drift-Finish : 0.51
Power Drift : 0.10

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

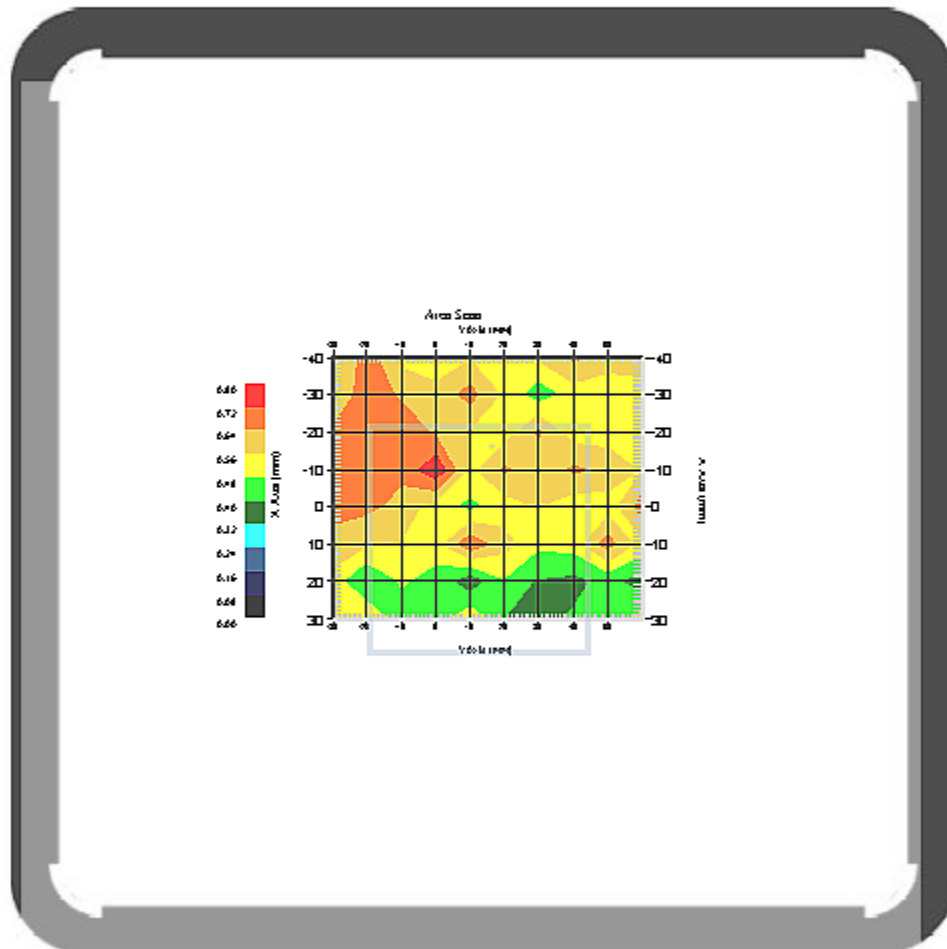
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Low - 2500



1 gram SAR value : 0.60 W/kg
10 gram SAR value : 0.49 W/kg
Area Scan Peak SAR : 0.79
Zoom Scan Peak SAR : 1.08

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 03:43:27 PM
End Time : 07-Apr-2005 04:02:54 PM
Scanning Time : 1167 secs

Product Data
Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.53
Power Drift-Finish : 0.49
Power Drift : 0.05

Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : validation

Tissue Data
Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

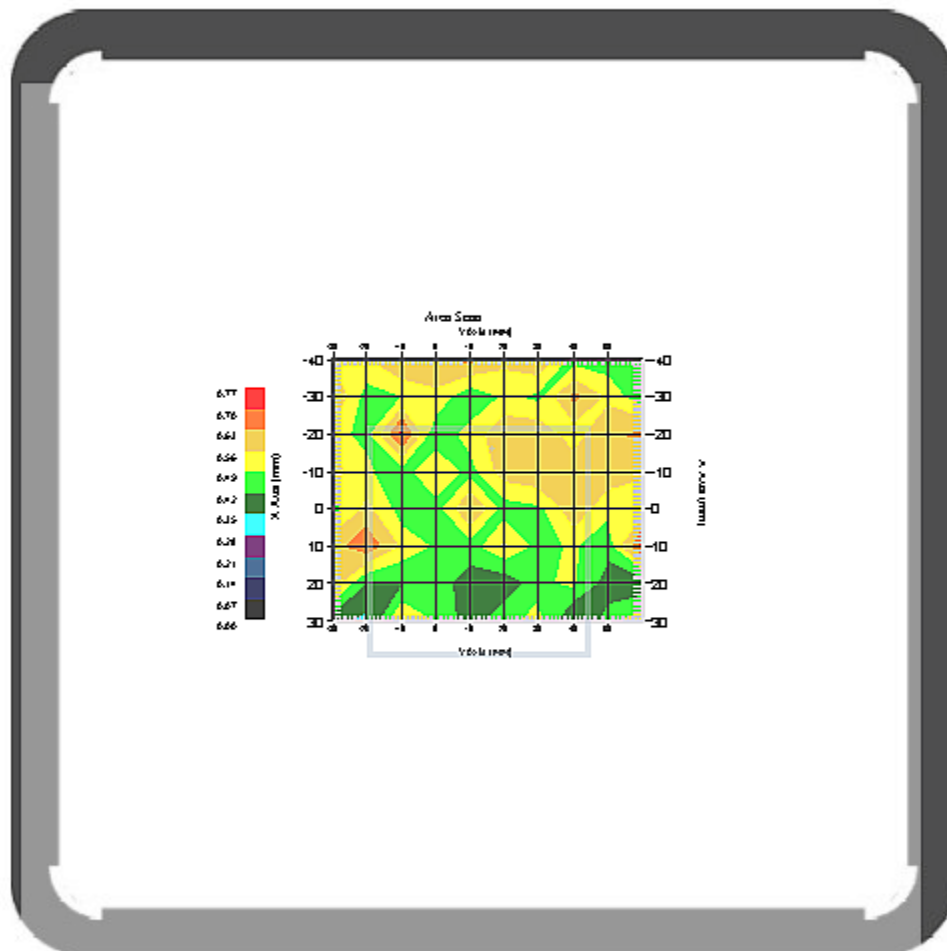
Probe Data
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

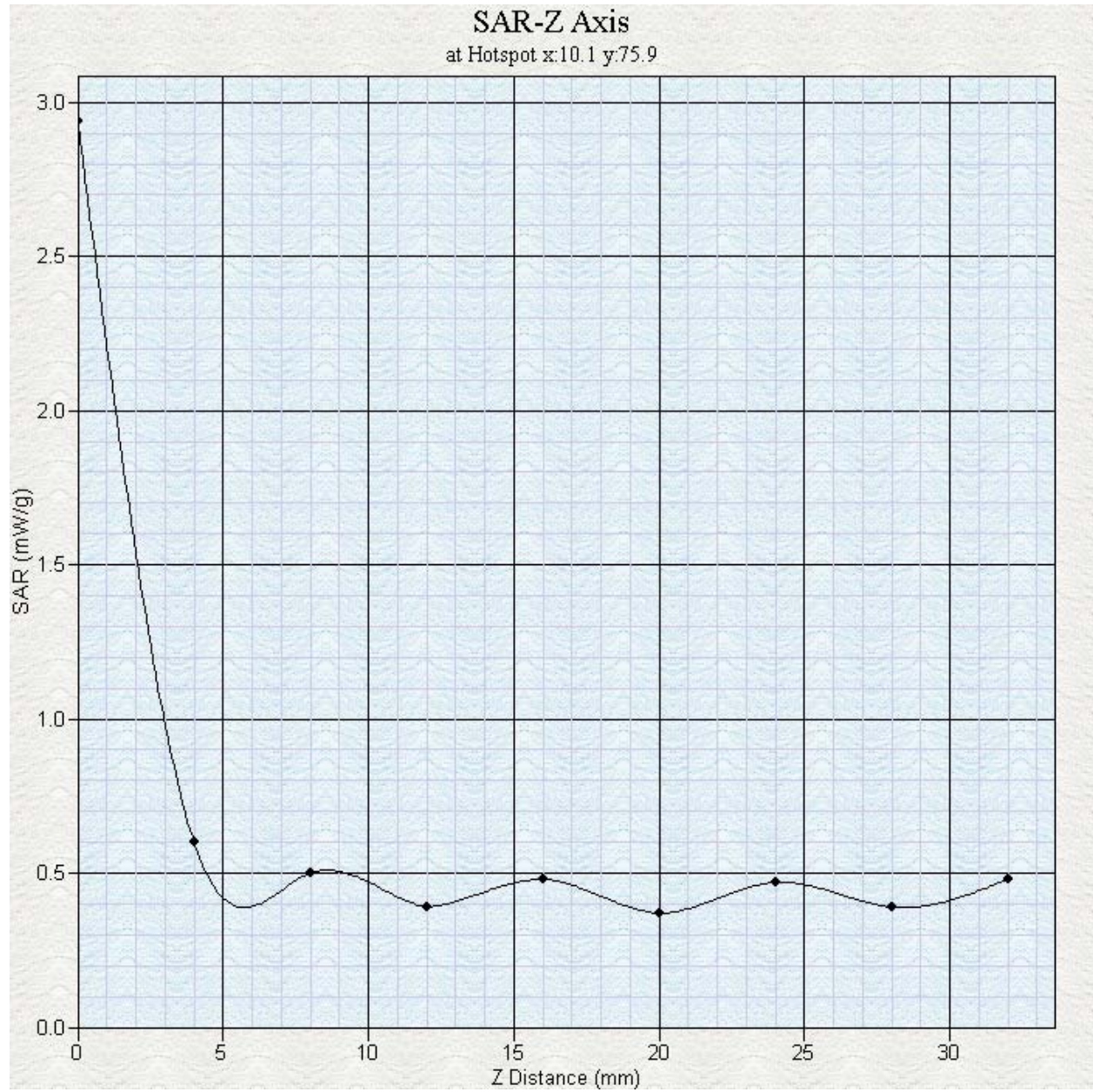
Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2593



1 gram SAR value : 0.76 W/kg
10 gram SAR value : 0.49 W/kg
Area Scan Peak SAR : 0.72
Zoom Scan Peak SAR : 2.94



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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 09:31:08 AM
End Time : 08-Apr-2005 09:52:04 AM
Scanning Time : 1256 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 56
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.65
Power Drift-Finish : 0.40
Power Drift : 0.25

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

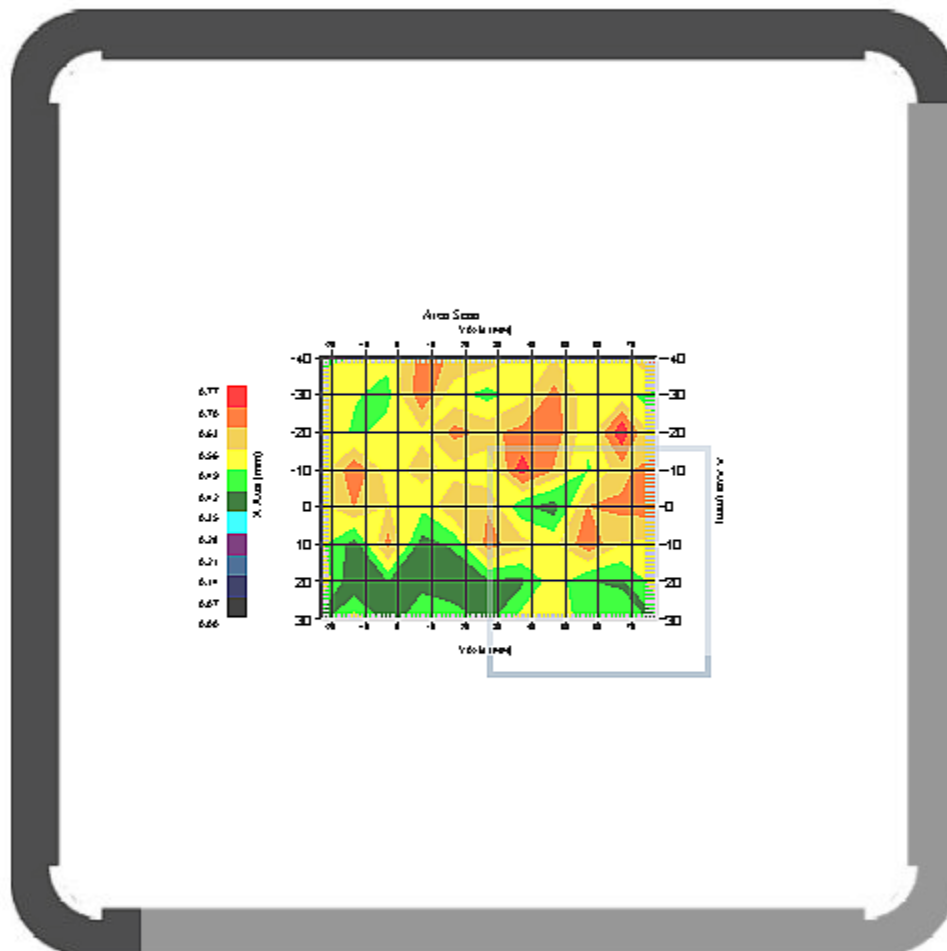
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 08-Apr-2005
Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : High - 2683



1 gram SAR value : 0.55 W/kg
10 gram SAR value : 0.46 W/kg
Area Scan Peak SAR : 0.76
Zoom Scan Peak SAR : 1.47

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	0.3	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 02:47:10 PM
End Time : 06-Apr-2005 03:02:37 PM
Scanning Time : 927 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.32
Power Drift-Finish : 0.35
Power Drift : 0.03

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

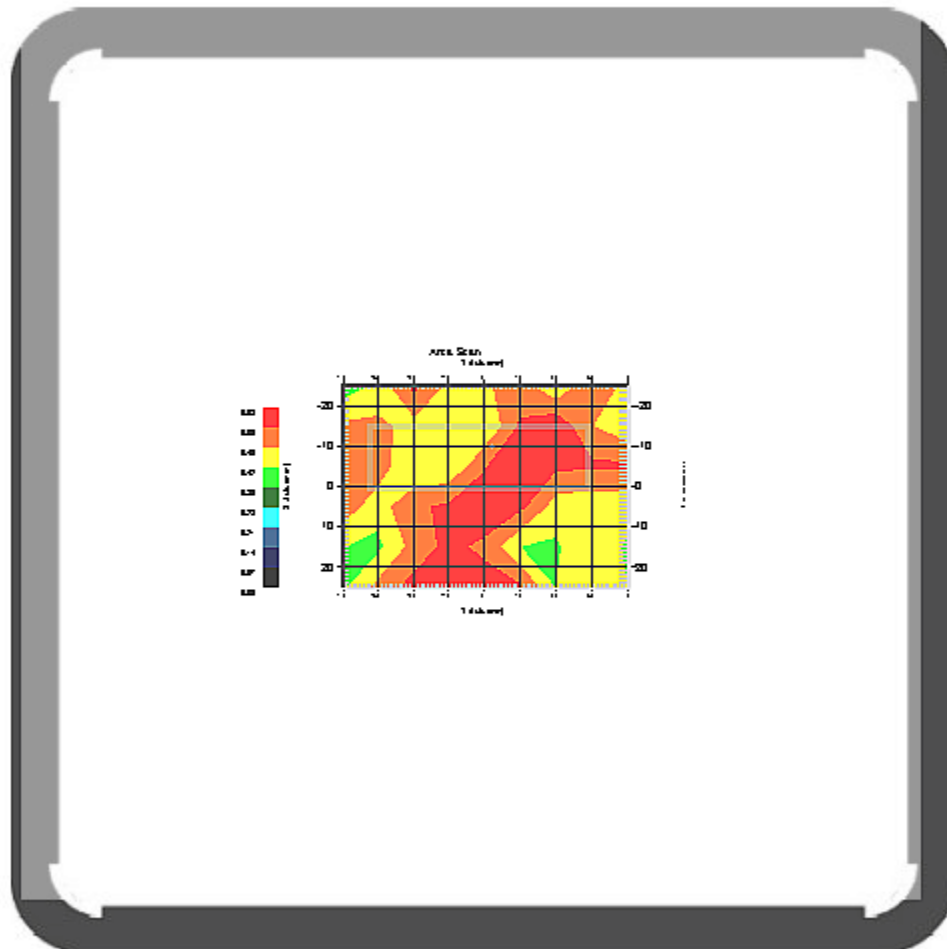
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 06-Apr-2005
Set-up Time : 10:55:58 PM

Other Data

DUT Position : Touch
Separation : 0
Channel : Low - 2500



1 gram SAR value : 0.54 W/kg
10 gram SAR value : 0.42 W/kg
Area Scan Peak SAR : 0.63
Zoom Scan Peak SAR : 1.61

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	0.0	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 06-Apr-2005
Measurement Date : 06-Apr-2005
Starting Time : 06-Apr-2005 01:16:44 PM
End Time : 06-Apr-2005 01:31:10 PM
Scanning Time : 866 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.52
Power Drift-Finish : 0.31
Power Drift : 0.21

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 06-Apr-2005
Temperature : 20 °C
Ambient Temp. : 21 °C
Humidity : 46 RH%
Epsilon : 50.85 F/m
Sigma : 1.89 S/m
Density : 1000 kg/cu. m

Probe Data

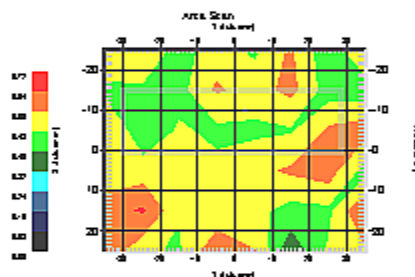
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

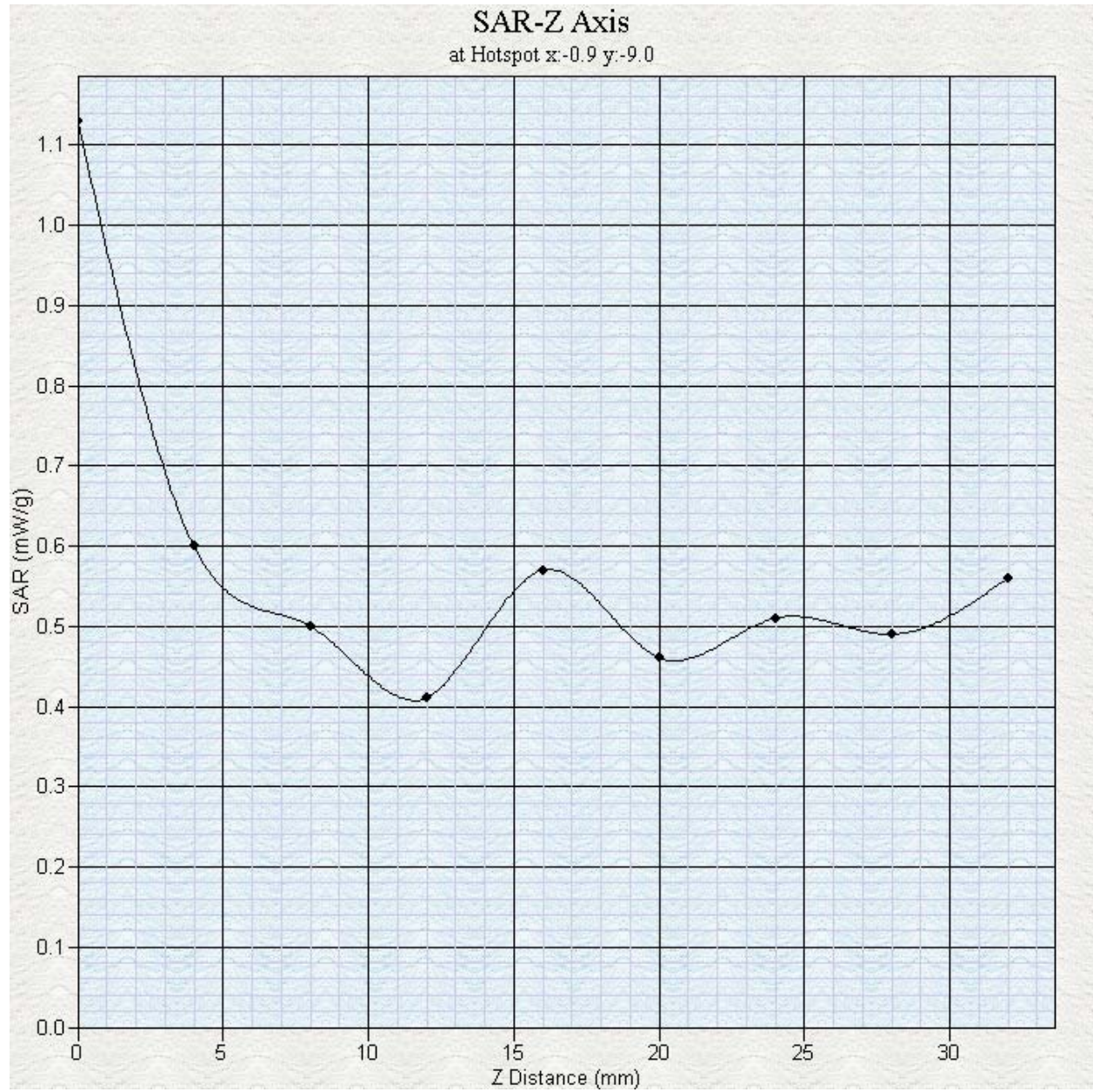
Crest Factor : 1
Scan Type : Complete
Set-up Date : 06-Apr-2005
Set-up Time : 10:55:58 PM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2593



1 gram SAR value : 0.68 W/kg
10 gram SAR value : 0.58 W/kg
Area Scan Peak SAR : 0.65
Zoom Scan Peak SAR : 1.13



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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 07-Apr-2005
Measurement Date : 07-Apr-2005
Starting Time : 07-Apr-2005 09:03:19 AM
End Time : 07-Apr-2005 09:17:54 AM
Scanning Time : 875 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : External
Power Drift-Start : 0.46
Power Drift-Finish : 0.33
Power Drift : 0.13

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 07-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 51.23 F/m
Sigma : 2.01 S/m
Density : 1000 kg/cu. m

Probe Data

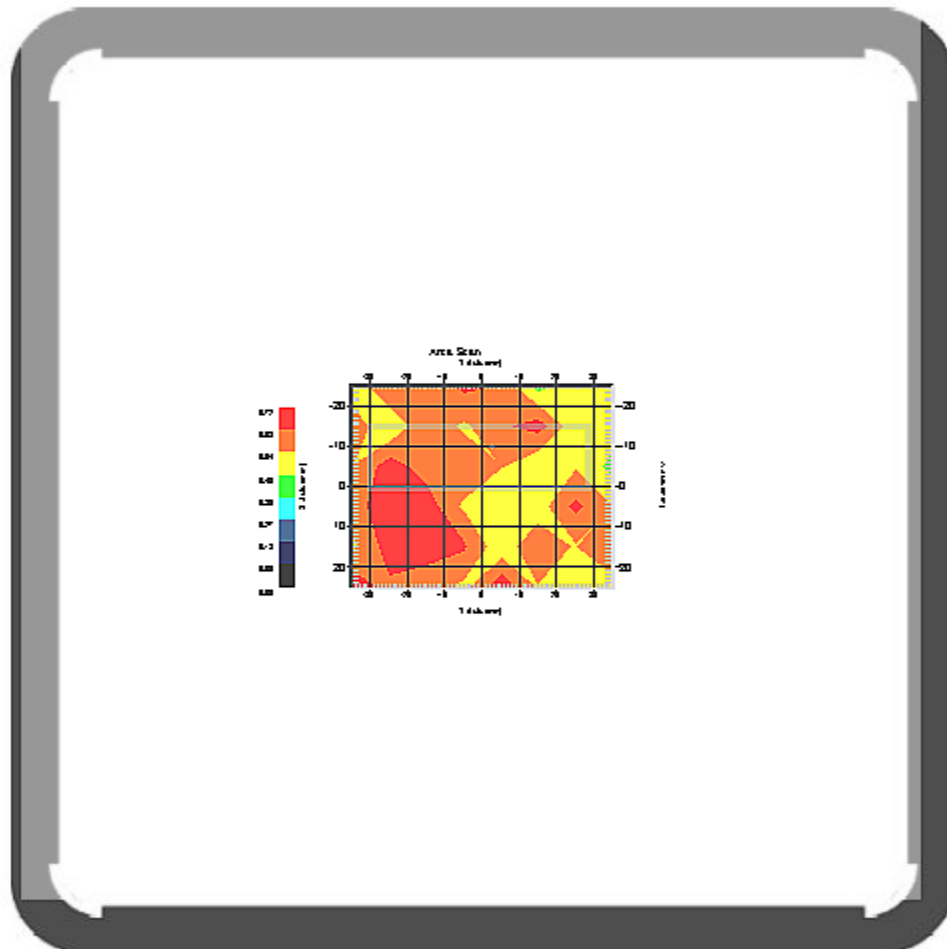
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 07-Apr-2005
Set-up Time : 08:42:46 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : High - 2683



1 gram SAR value : 0.55 W/kg
10 gram SAR value : 0.44 W/kg
Area Scan Peak SAR : 0.71
Zoom Scan Peak SAR : 1.25

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.1	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 11:04:00 AM
End Time : 08-Apr-2005 11:19:15 AM
Scanning Time : 915 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.70
Power Drift-Finish : 0.57
Power Drift : 0.13

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

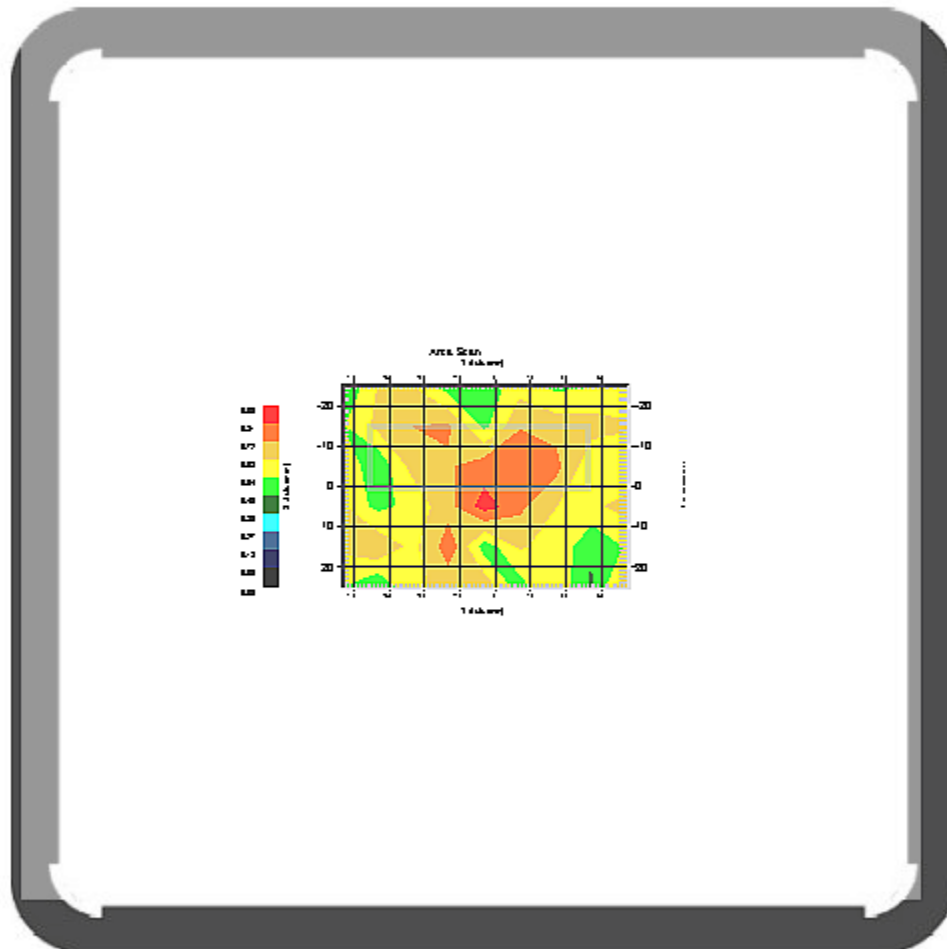
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 08-Apr-2005
Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Low - 2500



1 gram SAR value : 0.66 W/kg
10 gram SAR value : 0.49 W/kg
Area Scan Peak SAR : 0.85
Zoom Scan Peak SAR : 1.79

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 08:00:18 AM
End Time : 08-Apr-2005 08:15:38 AM
Scanning Time : 920 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.42
Power Drift-Finish : 0.52
Power Drift : 0.10

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

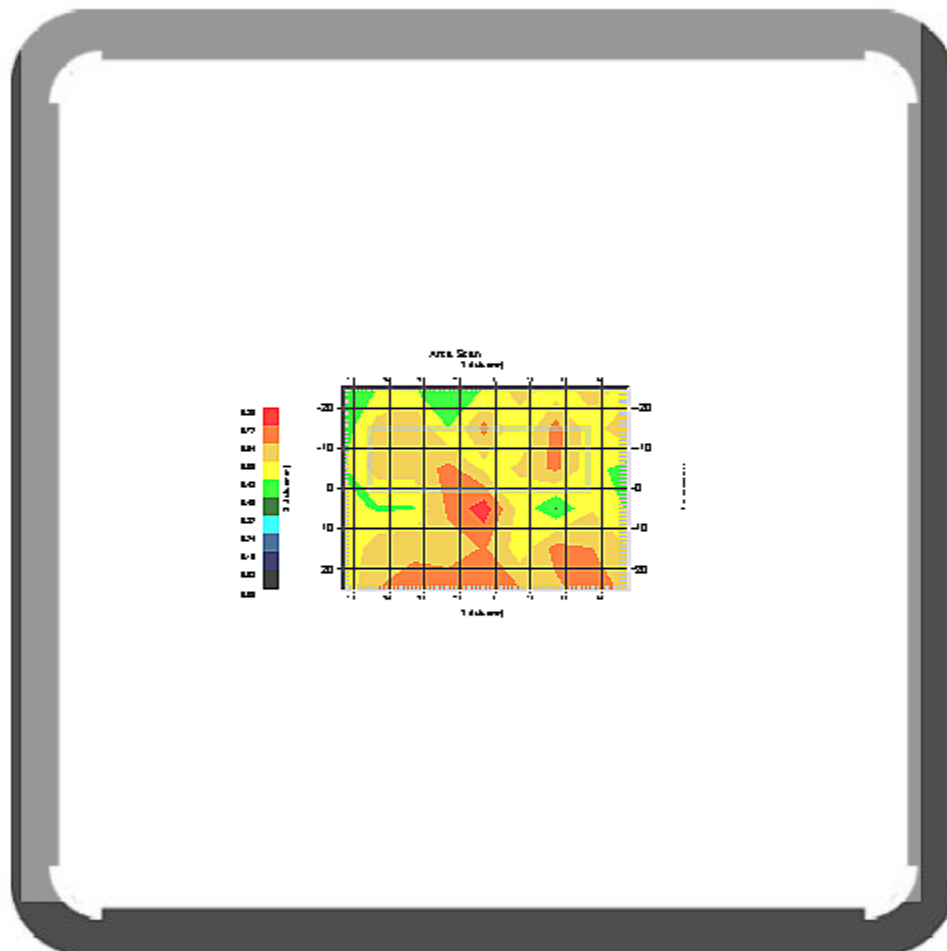
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 08-Apr-2005
Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : Mid - 2593



1 gram SAR value : 0.66 W/kg
10 gram SAR value : 0.54 W/kg
Area Scan Peak SAR : 0.76
Zoom Scan Peak SAR : 1.48

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	0.1	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

SAR Test Report

Operator : Jay
Validation Date : 08-Apr-2005
Measurement Date : 08-Apr-2005
Starting Time : 08-Apr-2005 11:49:17 AM
End Time : 08-Apr-2005 12:04:38 PM
Scanning Time : 921 secs

Product Data

Device Name : Navini Networks
Serial No. : 001
Type : Other
Model : 2.5-2.6 PCM
Frequency : 2500.00 MHz
Max. Transmit Pwr : 0.35 W
Drift Time : 0 min(s)
Length : 15
Width : 54
Depth : 20
Antenna Type : Internal
Power Drift-Start : 0.61
Power Drift-Finish : 0.42
Power Drift : 0.19

Phantom Data

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

Tissue Data

Type : Body
Serial No. : 2450
Frequency : 2450 MHz
Calibration Date : 08-Apr-2005
Temperature : 20 °C
Ambient Temp. : 22 °C
Humidity : 47 RH%
Epsilon : 53.08 F/m
Sigma : 1.96 S/m
Density : 1000 kg/cu. m

Probe Data

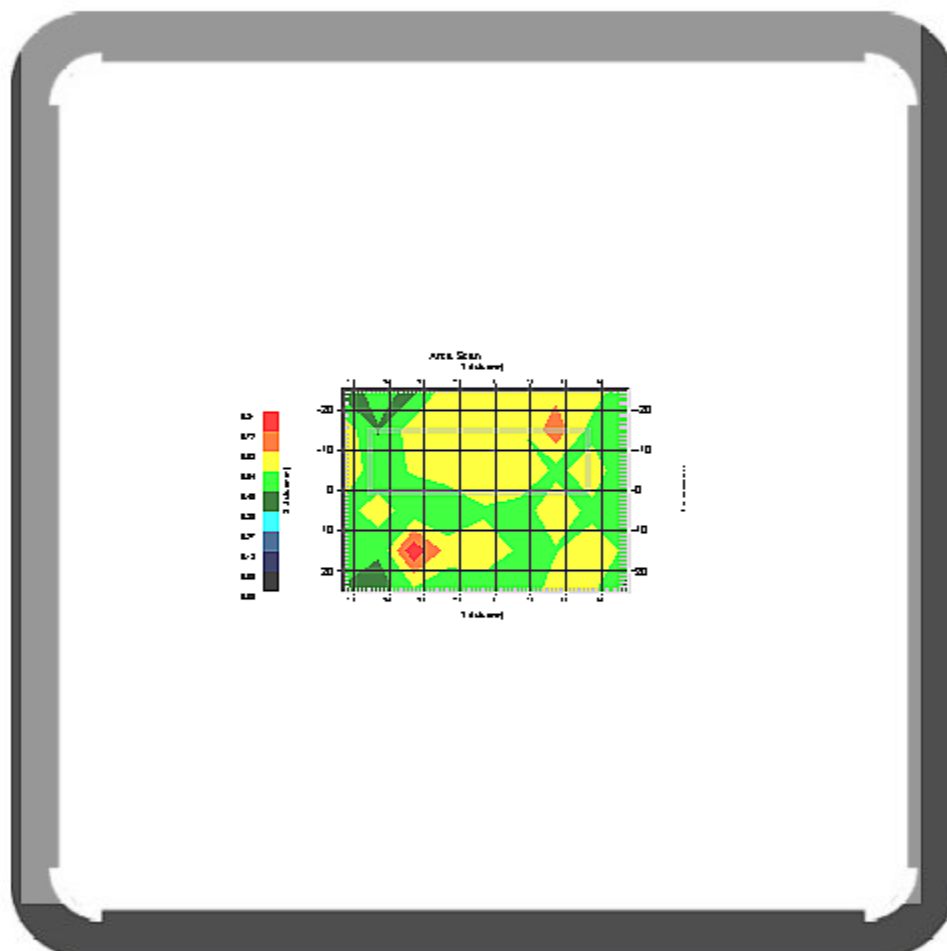
Name : RFEL 217
Model : E020
Type : E-Field Triangle
Serial No. : 217
Calibration Date : 10-Jun-2004
Frequency : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 3.6
Probe Sensitivity : 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{sq. m})$
Compression Point : 95
Offset : 1.56

Measurement Data

Crest Factor : 1
Scan Type : Complete
Set-up Date : 08-Apr-2005
Set-up Time : 07:45:58 AM

Other Data

DUT Position : Touch
Separation : 0
Channel : High - 2683



1 gram SAR value : 0.50 W/kg
10 gram SAR value : 0.42 W/kg
Area Scan Peak SAR : 0.78
Zoom Scan Peak SAR : 1.07

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	0.2	rectangular	•3	1	1	0.0	0.0
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.)	0.2	rectangular	•3	0.7	0.5	0.1	0.1
Liquid Permittivity(target)	2.0	rectangular	•3	0.6	0.5	0.7	0.6
Liquid Permittivity(meas.)	5.3	rectangular	•3	0.6	0.5	1.8	1.5
Combined Uncertainty		RSS				9.3	9.1
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.6	18.2

Appendix C – SAR Test Setup Photos



Figure 1 – Dell Internal Antenna Touch Position



Figure 2 – Dell External Antenna Touch Position

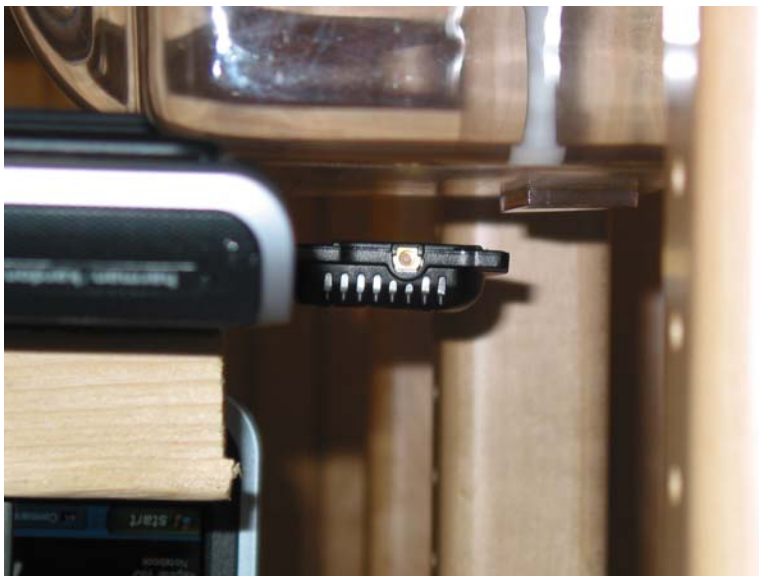


Figure 3 – HP Internal Antenna Touch Position



Figure 4 – HP External Antenna Touch Position



Figure 5 – Toshiba Internal Antenna Touch Position

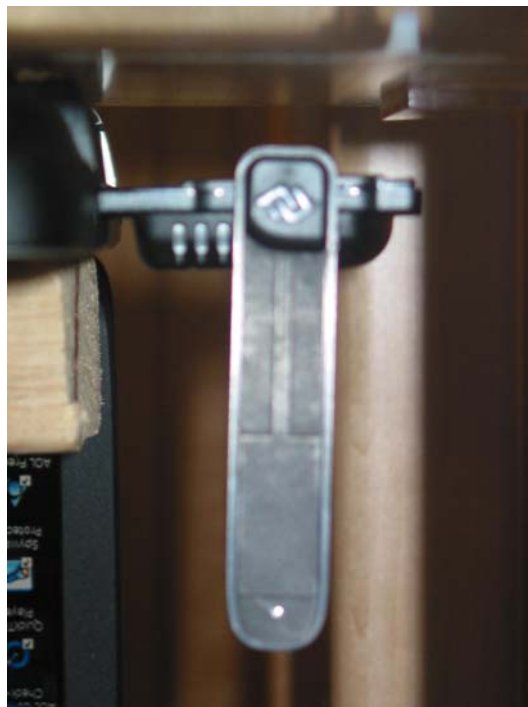


Figure 6 – Toshiba External Antenna Touch Position



Figure 7 – Toshiba Internal Antenna 15 mm Position

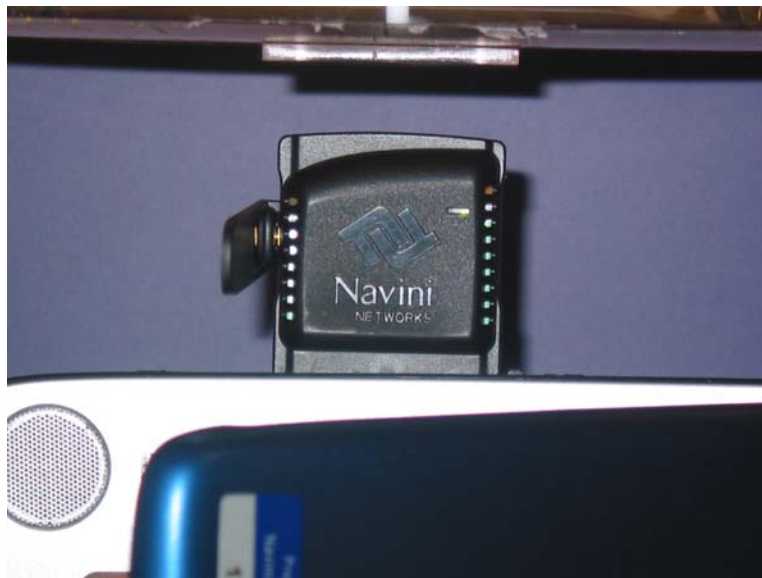


Figure 8 – Toshiba External Antenna 15mm Postion

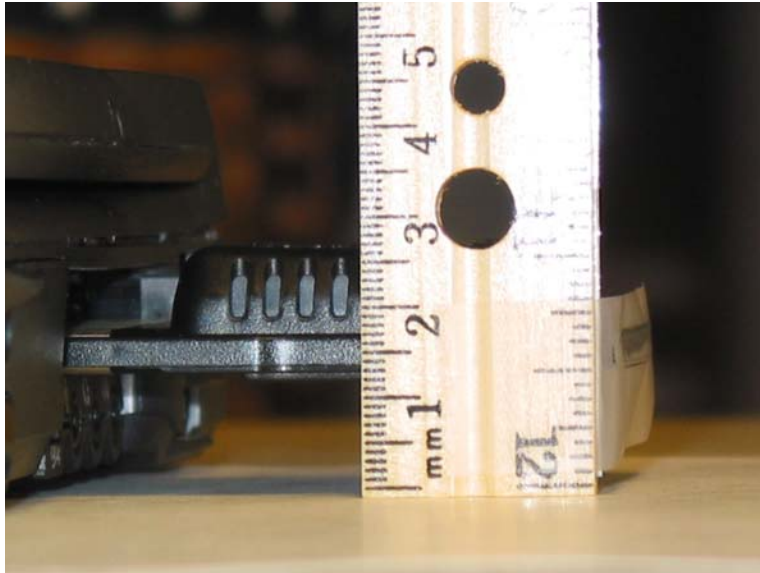


Figure 9 – Dell Measurement from Lap

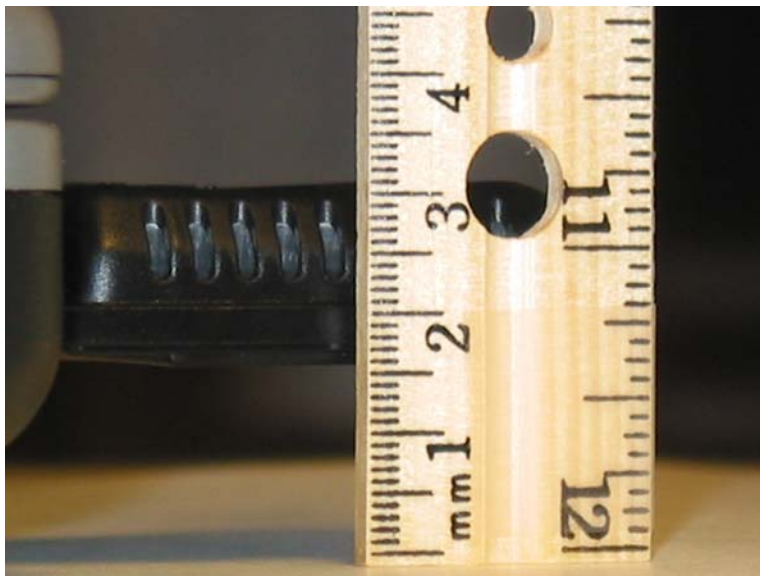


Figure 10 – HP Measurement from Lap

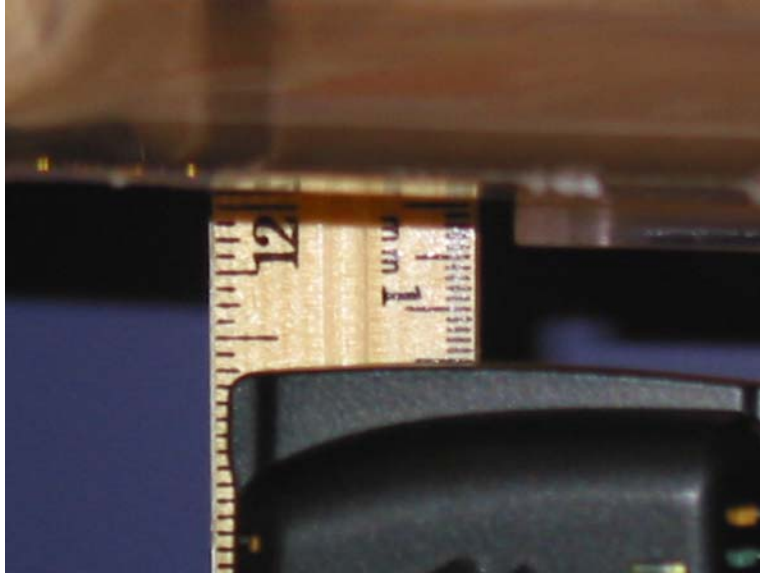


Figure 11 – Toshiba Measurement for 15 mm Test



Figure 12 – Back of Antenna