TEST REPORT

PSB Corporation

Your Ref:

Date: 27 Nov 2001

Our Ref: EMC/R/02318

DID: 7729722

Fax: 7776409

NOTE: This Report is not a Certificate of Quality. It is issued subject to the " Terms and Conditions Governing Technical Services" set out in the "Request for Technical Services" form. The terms and conditions governing the issue of this report are set out overleaf.

FORMAL REPORT ON TESTING IN ACCORDANCE WITH
SAR (Specific Absorption Rate) Requirements
using guidelines established in :

FCC OET Bulletin 65 - Supplement C (Edition 97-01)

OF A

900MHz Spread Spectrum Cordless Phone
[Model : FT901]

TEST FACILITY Telecoms & EMC, Testing Group, PSB Corporation Pte Ltd
1 Science Park Drive, Singapore 118221

PREPARED FOR Raymond Li
World Symbol Ltd
Unit 402, Wing Shan Tower, 173 Des Voeux Road,
Central, Hong Kong.

Tel : 852 28511188 Fax : 852 28513636

MANUFACTURER Shi Xue Song
Shinwa Industries (China) Ltd
8 Ping Nan Zhong Road, Ping Nan Industrial Park,
Zhong Kai No. 4 Road, Hui Zhou City, China.

Tel : 752 2602373 Fax : 752 2602401

JOB NUMBER 56S00436

TEST PERIOD 22 Nov 2001 – 25 Nov 2001

PREPARED BY	**APPROVED BY**
Gary Ng Ah Chye	Teo Swee Hoe
Associate Engineer	Senior Engineer

PSB TEST® Your product quality and safety mark

ACCREDITED LABORATORY SAC-SINGLAS

LA-2001-0212-A
LA-2001-0213-F
LA-2001-0214-E
LA-2001-0215-B
LA-2001-0216-G
LA-2001-0217-G

"The results reported herein, unless otherwise stated have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council – Singapore Laboratory Accreditation Scheme"

This Report is issued under the following conditions:

1. Results of the testing/calibration in the form of a report will be issued immediately after the service has been completed or terminated.

2. Unless otherwise requested, a reported shall contain only technical results. Analysis and interpretation of the results and professional opinion and recommendations expressed thereupon, if required, shall be clearly indicated and additional fee paid for, by the Client.

3. This report is not a Certificate of Quality. It only applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are application to other similar items. In addition, such results must not be used to indicate or imply that PSB Corporation approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that PSB Corporation in any way "guarantees" the later performance of the product/equipment.

4. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client, PSB Corporation therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.

5. Additional copies of the report are available to the Client at an additional fee. No third party can obtain a copy of this report through PSB Corporation, unless the Client has authorised PSB Corporation in writing to do so.

6. PSB Corporation may at its sole discretion add to amend the conditions of the report at the time of issue of the report and such report and such additions or amendments shall be binding on the Client.

7. All copyright in the report shall remain with PSB Corporation and the Client shall, upon payment of PSB Corporation's fees for the carrying out of the tests/calibrations, be granted a license to use or publish the report to the third parties subject to the terms and conditions herein, provided always that PSB Corporation may at its absolute discretion be entitled to impose such conditions on the license as it sees fit.

8. Nothing in this report shall be interpreted to mean that PSB Corporation has verified or ascertained any endorsement or marks from any testing authority or bodies that may be found on that sample.

9. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to PSB Corporation or to the report or results furnished by PSB Corporation in any advertisements or sales promotion.

TEST SUMMARY

PRODUCT DESCRIPTION

TEST RESULTS

ANNEX A - TEST INSTRUMENTATION & GENERAL PROCEDURES

ANNEX B - TEST PHOTOGRAPHS / DIAGRAMS
Test Setup
EUT Photographs

ANNEX C - TISSUE SIMULANT DATA SHEETS

ANNEX D - REFERENCES

The product was tested in accordance with the following standards.

Test Results Summary

Test Standards	Description	Pass / Fail
• FCC OET Bulletin 65-1997 (Supplement C)	SAR Measurement For Face-Hand Held Location	Pass *
• ANSI/IEEE Standard C95.1-1993	SAR Measurement For Waist Position with Belt-Clip Location	Pass *

∗ Based on Spatial Peak Uncontrolled exposure / General population Level :
Brain : 1.60 W/Kg
Body : 1.60 W/Kg

Modifications

No modifications were made.

Description	:	The Equipment Under Test (EUT) is a **900MHz Spread Spectrum Cordless Phone.**
Model Number	:	FT901
Brand Name	:	FITTELS
Radio Type	:	Cordless Phone
Serial Numbers	:	Nil
Frequency Band	:	903.936Mhz – 926.208MHz
Operating Frequencies	:	903.936Mhz – 926.208MHz
Rated Output Power	:	17dBm – 20dBm
Clock / Oscillator Type	:	PLL Type (Crystal Oscillator as reference)
Clock / Oscillator Frequency	:	3.579MHz, 19.20MHz and 10.24MHz.
Antenna Type	:	Integrated Antenna
Signal Type	:	0.5GFSK
Duty Cycle	:	100% at test mode.
Power Supply	:	3.6V DC, 600mAh Ni-Cd Battery.
Accessories	:	1) Belt-Clip Only 2) Headset 3) Base Charger 4) Charger

The measurement results were obtained with the EUT tested in the conditions described in this report (Annex A). Detailed measurement data and plots indicating the maximum SAR location of the EUT are indicated as follow.

Table 1 - Face-Hand Held SAR Test Results

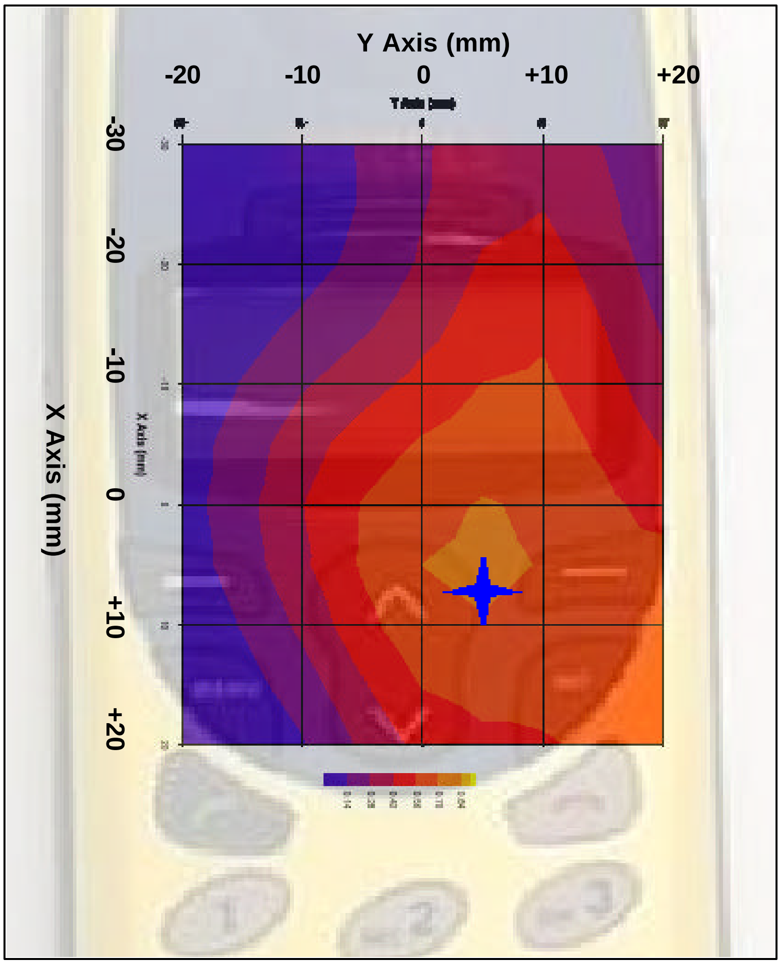
Channel	Frequency (MHz)	Antenna Type	Max. Conducted Rated Power (dBm) (Before SAR Measurement)	Max. Conducted Rated Power (dBm) (After SAR Measurement)	1 cm Voltage (mV)	SAR (W/Kg)
01	903.936	Fixed	18.6	18.6	0.388	0.054
15	914.688	Fixed	18.5	18.5	0.715	0.066
30	926.208	Fixed	18.3	18.3	0.353	0.049

Remarks:

1. Operations were investigated and the worst-case SAR levels, at test mode which the cordless phone transmit the signal of 100% duty cycle at test channels, are reported.
2. A fully charged Battery was used for each mode of operation.
3. The worst-case SAR value was found to be **0.066 W/Kg** at **Channel 15**, which is lower than the maximum limit of 1.60 W/Kg.
4. The SAR limit of 1.60W/Kg (Spatial Peak level for Uncontrolled Exposure / General Population) is based on the Test Standards :
   a) FCC OET Bulletin 65-1997 (Supplement C)
   b) ANSI/IEEE Standard C95.1-1993

Area Scan Plot 1 - Location of RF Energy for Face-Hand Held Position

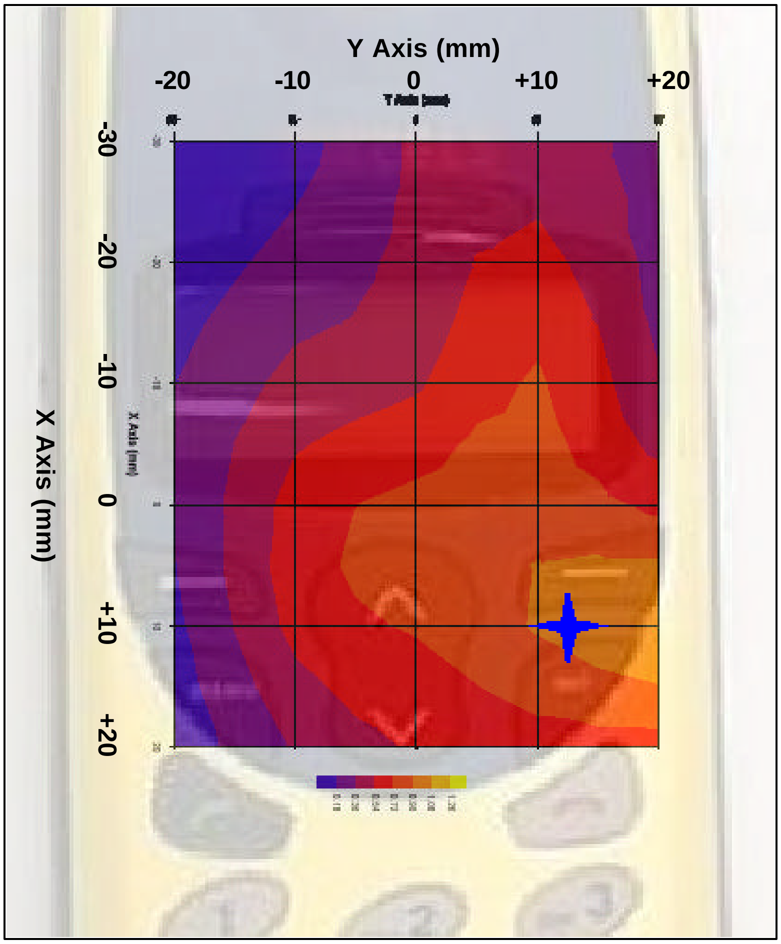
Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
01	903.936	0.054	7	5



Denotes as the RF Energy (i.e. Hot Spot) Location.

Area Scan Plot 2 - Location of RF Energy for Face-Hand Held Position

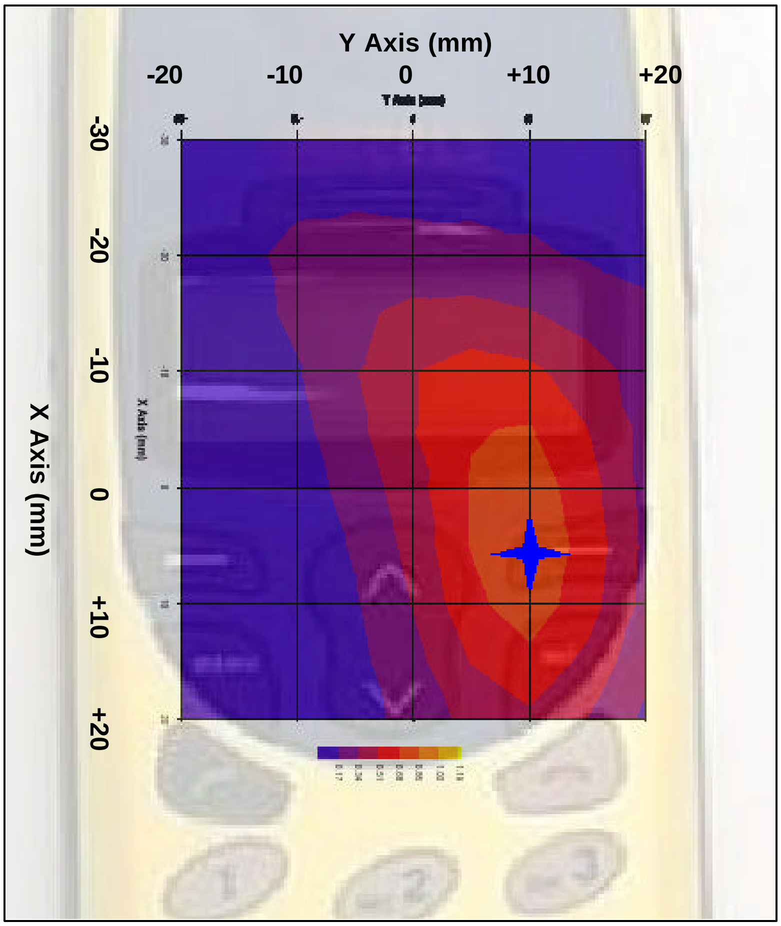
Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
15	914.688	0.066	10	12



Denotes as the RF Energy (i.e. Hot Spot) Location.

Area Scan Plot 3 - Location of RF Energy for Face-Hand Held Position

Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
30	926.208	0.049	5	10



Denotes as the RF Energy (i.e. Hot Spot) Location.

The measurement results were obtained with the EUT tested in the conditions described in this report (Annex A). Detailed measurement data and plots indicating the maximum SAR location of the EUT are indicated as follow.

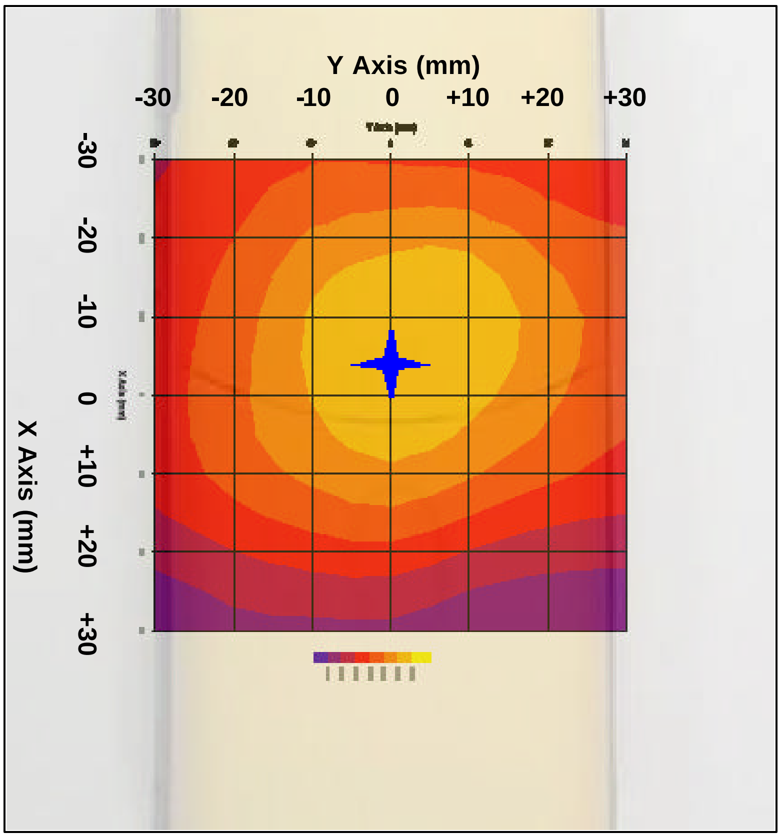
Table 2 - Waist Position with Belt-Clip SAR Test Results

Channel	Frequency (MHz)	Antenna Type	Max. Conducted Rated Power (dBm) (Before SAR Measurement)	Max. Conducted Rated Power (dBm) (After SAR Measurement)	1 cm Voltage (mV)	SAR (W/Kg)
01	903.936	Fixed	18.6	18.6	0.696	0.064
15	914.688	Fixed	18.5	18.5	0.727	0.071
30	926.208	Fixed	18.3	18.3	0.561	0.054

Remarks:
1. Operations were investigated and the worst-case SAR levels, at test mode which the cordless phone transmit the signal of 100% duty cycle at test channels, are reported.
2. A fully charged Battery was used for each mode of operation.
3. The worst-case SAR value was found to be **0.071 W/Kg** at **Channel 15**, which is lower than the maximum limit of 1.60 W/Kg.
4. The SAR limit of 1.60W/Kg (Spatial Peak level for Uncontrolled Exposure / General Population) is based on the Test Standards :
   a) FCC OET Bulletin 65-1997 (Supplement C)
   c) ANSI/IEEE Standard C95.1-1993

Area Scan Plot 1 - Location of RF Energy for Waist Position with Belt-Clip

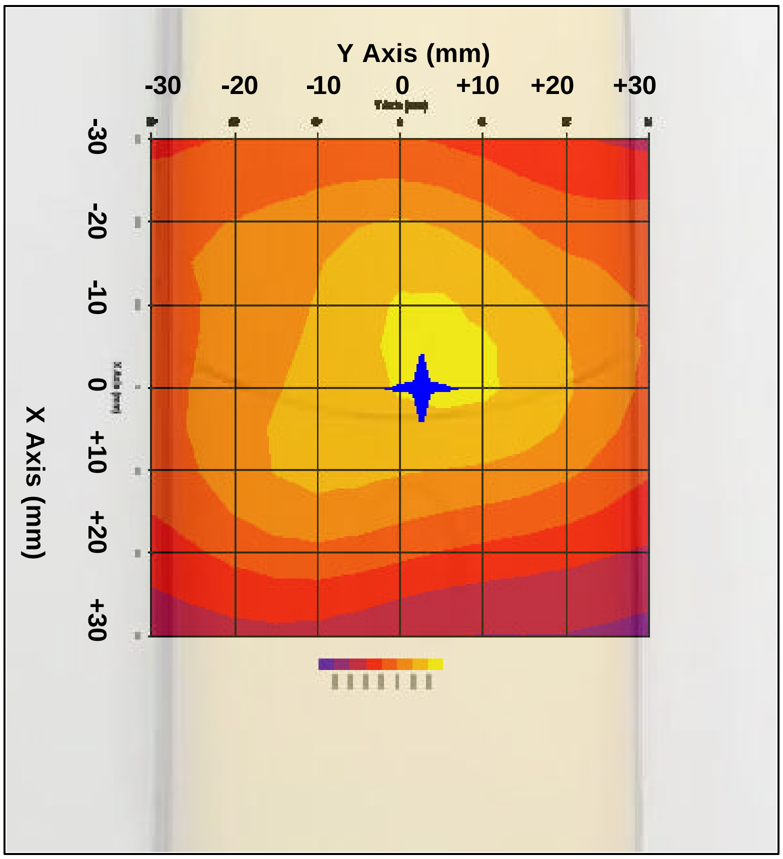
Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
01	903.936	0.064	-5	0



Denotes as the RF Energy (i.e. Hot Spot) Location.

Area Scan Plot 2 - Location of RF Energy for Waist Position with Belt-Clip

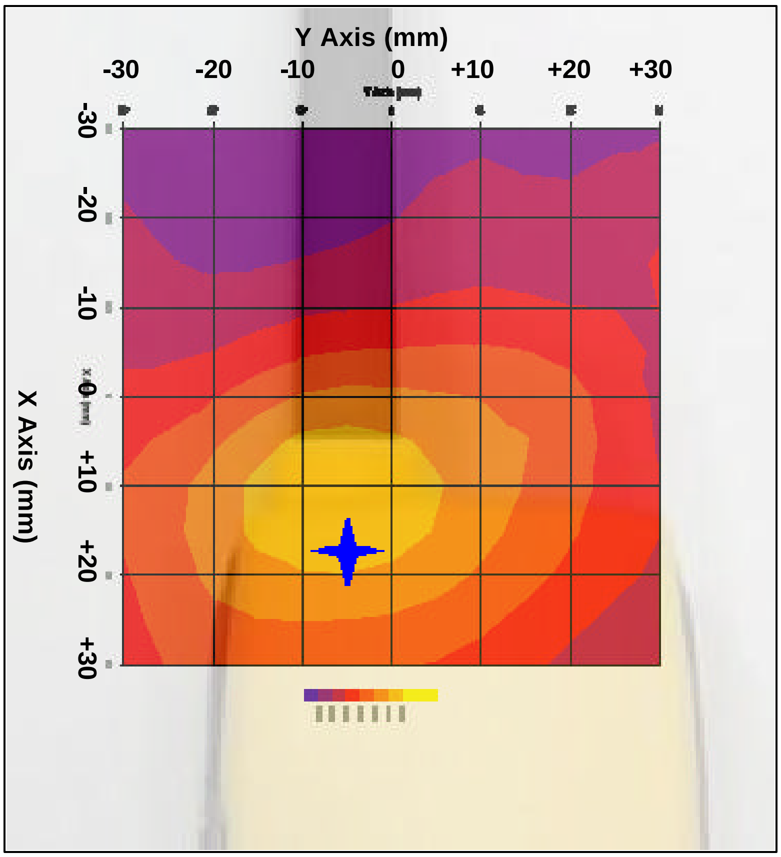
Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
15	914.688	0.071	0	3



Denotes as the RF Energy (i.e. Hot Spot) Location.

Area Scan Plot 3 - Location of RF Energy for Waist Position with Belt-Clip

Channel	Frequency (MHz)	SAR (1 gram) (100% Duty Cycle) (W/Kg)	Max. Field Location	
			X Axis (mm)	Y Axis (mm)
30	926.208	0.054	17	-5



Denotes as the RF Energy (i.e. Hot Spot) Location.

Measurement Uncertainty

Standards Covered Are:

WGMTE 96/4 - Secretary SC211/B

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

Industry Canada RSS 102

The laboratory test procedure, and this uncertainty analysis, may be used to cover all standards above.

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

Table I. Estimated SAR Measurement Uncertainty

All test measurement carried out are traceable to national standards. The uncertainty of measurement at a confidence level of 95%, with a coverage of 2, is ± 27.14%

ANNEX A

TEST INSTRUMENTATION
&
GENERAL PROCEDURE

A.1 General Test Procedure

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

A.2 Test Setup

Phantom

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

Simulated tissue

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

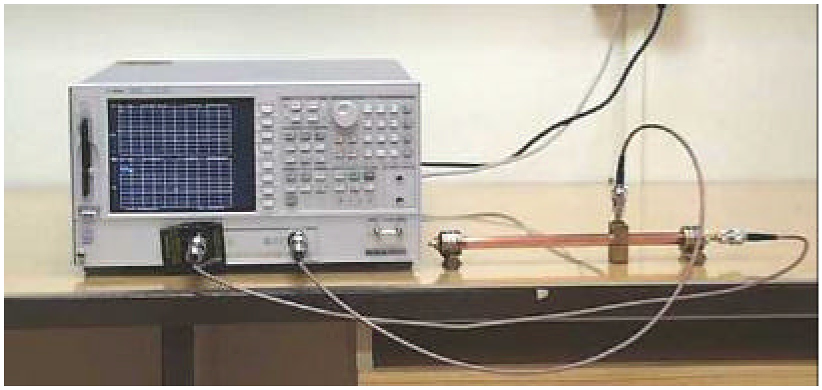
This simulated tissue is mainly composed of water, sugar and salt. At higher frequencies, in order to achieve the proper conductivity, the solution does not contain salt. Also, at these frequencies, D.I. water and alcohol is preferred.
Tissue Density : Approximately 1.25 g/cm^3

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

- **Measurement of Electrical Characteristics of Simulated Tissue**
  1) Agilent 8753ES, S-Parameter Network Analyzer (30KHz – 6GHz)
  2) Slotted Coaxial Waveguide

- **Description of the slotted coaxial waveguide**
  The cylindrical waveguide is constructed with copper tube of about 30 to 40 cm of length, generally 12.5 mm diameter, with connectors at both ends. Inside of this tube, a conductive rod about 6.3 mm is coaxial supported by the two ends connectors (radiator). A slot 3 mm wide start at the beginning of the tube to almost the two third of the tube length. The outer edge of the slotted tube is marked in centimeters. For frequency below 1GHz, 1 centimeter per step. For higher frequency above 1 GHz, 0.5 centimeter per step. A saddle piece containing the sampling probe is inserted in the slot so the tip of the probe is close but not in contact with the inner conductor (radiator).
  To measure the electrical characteristics of the liquid simulated tissue, which fill the coaxial waveguide, select CW frequency and measure amplitude and phase with the Network Analyzer for every point in the slot (typically 11). An effort is made to keep the results dielectric constant and conductivity within 5 % of published data.

Electrical Characteristics
Measurement Setup



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

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

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

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

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

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

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

$$\varepsilon_{r} = \frac{\varepsilon_{re}}{\sqrt{(1 + S^{2})}}$$

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

where;

A is the amplitude attenuation in dB

è is the phase change in degrees for 5 cm of wave propagation in the slotted line

f is the frequency of interest in Hz

Conversion Factor and SAR Value Calculation

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

- **Calibration is performed by two steps:**
  1) Determination of free space E-field from amplified probe outputs in a test RF field. This calibration is performed in a TEM cell when the frequency is below 1 GHz and in a waveguide or some other methodologies above 1 GHz. For the free space calibration, we place the probe in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. This reading equate to $1mW/cm^2$ if that power density is available in the correspondent cavity.

  2) Correlation of the measured free space E-field, to temperature rise in a dielectric medium. E-field temperature correlation calibration is performed in a planar phantom filled with the appropriate simulated tissue.

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

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

where:

t = exposure time (30 seconds),
C = heat capacity of tissue (brain or muscle),
T = temperature increase due to RF exposure.

The heat capacity used for brain simulated tissue is 2.7 joules/^{0}C/g and 3.0 joules/^{0}C/g for muscle.

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

$$SAR = \frac{|E|^2 \cdot s}{r}$$

where:

ó = Simulated tissue conductivity,
ð = Tissue density (1.25 g/cm^3 for simulated tissue)

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

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

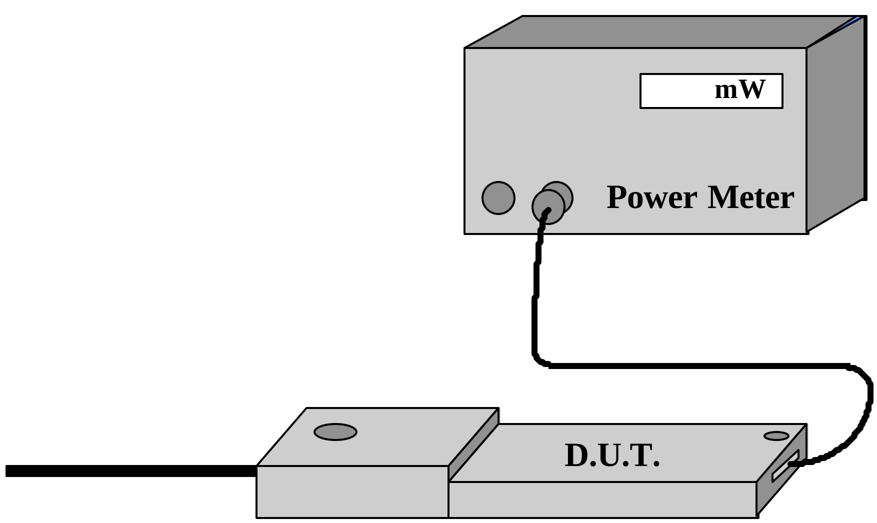
- **Interpolation and Gram Averaging**
  The voltage, (1 cm) above the phantoms surface (E_{tot} 1 cm), is needed to calculate the exposure over one gram of tissue. This SAR value that estimates the average over 1 gram of tissue, is obtained by taking the integral over 1 cm^2 surface of the measured field along the exponential decay curve of the energy density with depth.

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

EUT's Output Power Measurement

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

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



Measured Power Measured Power + Cable and Switching Mechanism Loss

Positioning of EUT

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

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

A.3 SAR Test Instrumentation

SAR Measurement System -- S/N: 9912002

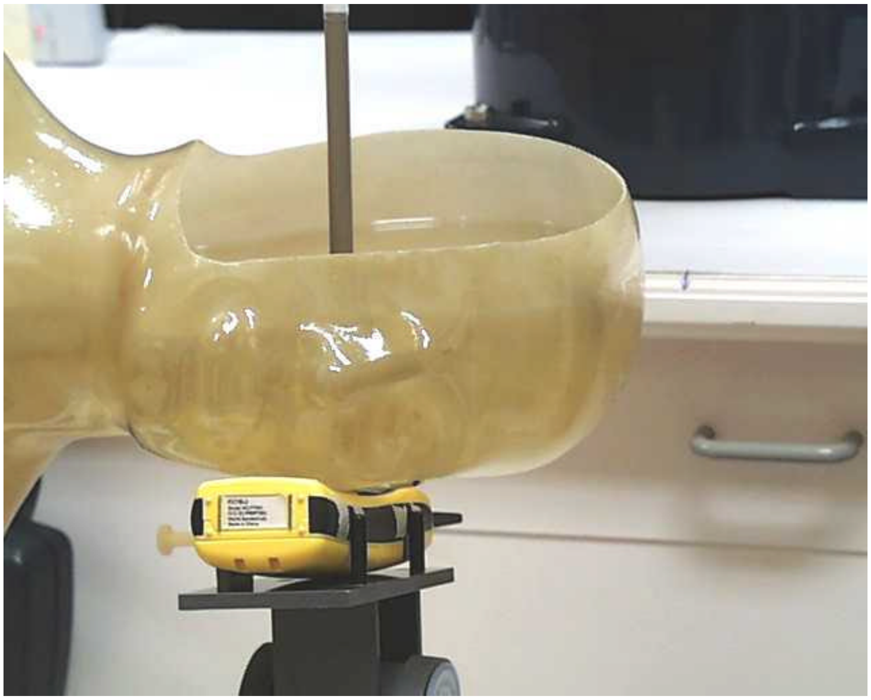
- ***Positioning Equipment***
  Type : 3D Near Field Scanner using 6-axis robot
  Location Repeatability : 0.1mm
  Speed 180 °/sec
  AC motors
- ***Computer***
  Type : 700 MHz Pentium III
  Memory : 256MB SDRAM
  Operating System : Windows NT 4.0
  Monitor : 17" LCD
- *Probe*
  Sensor : E-Field, 3Ch
  Spatial Resolution : 0.1 cm^3
  Isotropic Response : ± 0.25 dB
  Dynamic Range : 2 kW/g to 100 mW/g
- *Phantom & Tissue*
  Tissue: Simulated Tissue with electrical characteristics similar to those of the human at normal body temperature (23 ± 1 °C)
  Shell : Fiberglass human shell shaped (1.5 mm thick)
  Model: Models Head and shoulder (left and right ear, or face)
  Half Full Body, open back (Face-Hand held, Waist)

Instrument	Model	S/N	Cal Date
Boonton RF Power Meter (Dual Channel)	4532	97701	Mar 2002
Boonton Power Sensor	51075	30574	Mar 2002
Boonton Power Sensor	51075	32079	Mar 2002
Agilent Spectrum Analyzer	8564E	3831U02087	Apr 2002
Agilent Network Analyzer	8753D	MY40001026	May 2002
Anritsu RF Signal Generator	68347C	04306	Dec 2001
Amplifier Research Power Amplifier	25W1000B	27226	N/A
Agilent Dual Directional Coupler	HP778D	18286	N/A

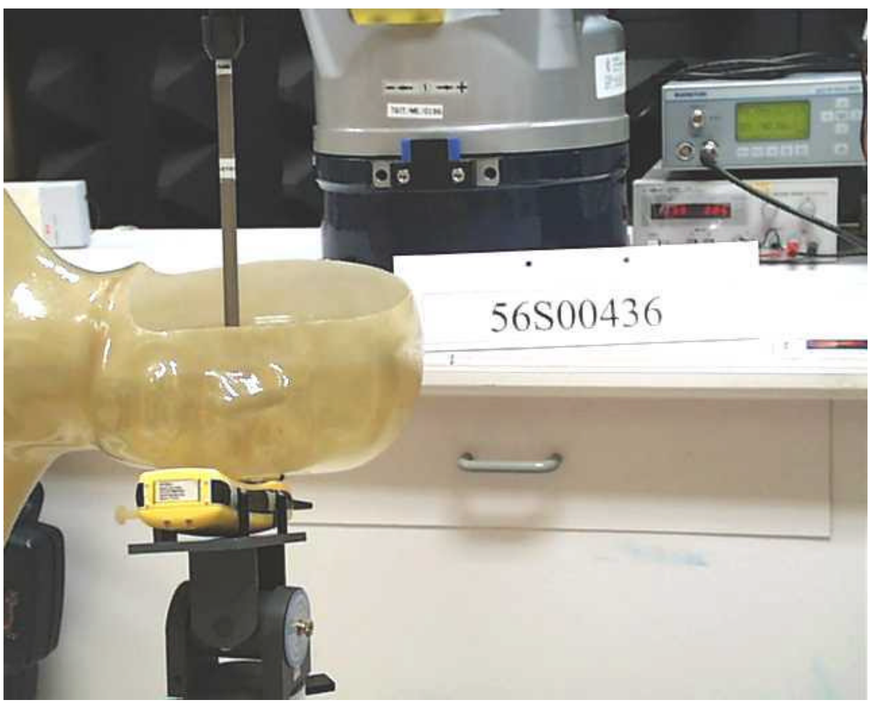
ANNEX B

TEST SETUP PHOTOGRAPHS

Face-Hand Held SAR Test Setup Photographs

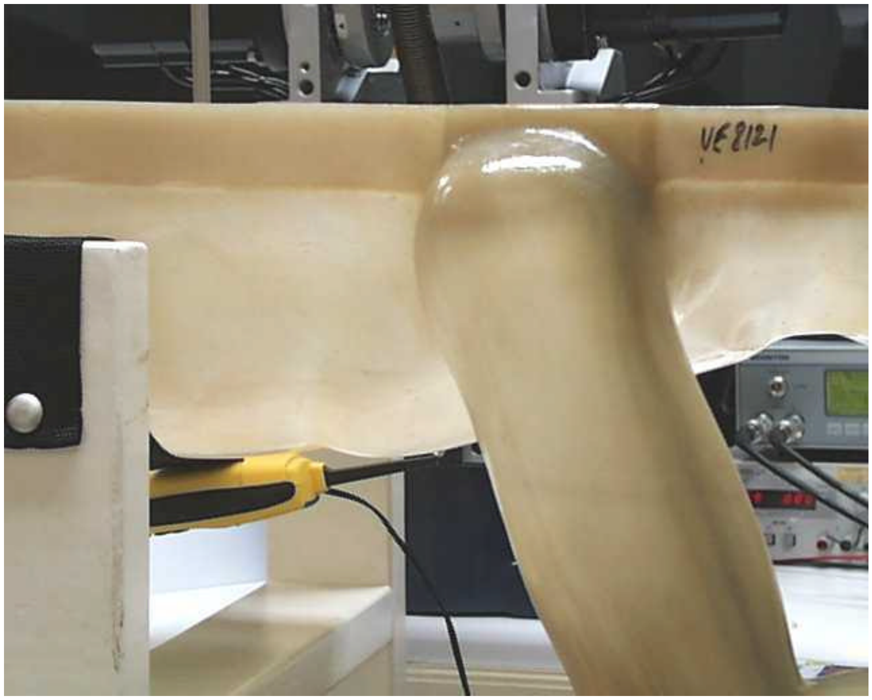


Close-up View



General View

Waist Position with Belt-Clip (Body-Worn) SAR Test Setup Photographs



Close-up View

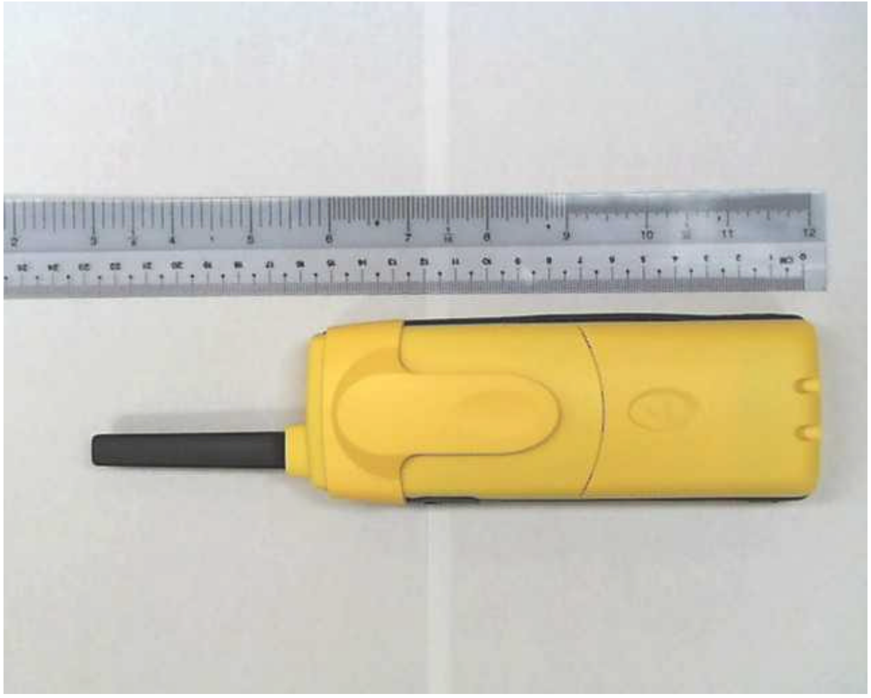
General View

PICTURE OF THE TEST SETUP

SAR Measurement System

EUT Views

Front of EUT



Rear of EUT

EUT Views

Left of EUT

Right of EUT

EUT Views

EUT with Accessories

ANNEX C

TISSUE SIMULANT DATA SHEETS

Type of Tissue	Brain	Muscle
Target Frequency (MHz)	900MHz	900MHz
Target Dielectric Constant	41.5	55.0
Target Conductivity (S/m)	0.97	1.05
Composition (by weight)	Water (40.69%) Sugar (58.35%) Salt (0.92%) HEC (0%) Bactericide (0.03%)	Water (55.07%) Sugar (44.06%) Salt (0.83%) HEC (0%) Bactericide (0.05%)
Measured Dielectric Constant	40.9	56.6
Measured Conductivity (S/m)	0.95	1.05
Probe Name	PSB_Triangular Probe_E1	PSB_Triangular Probe_E2
Probe Orientation	Isotropic	Isotropic
Probe Offset (mm)	3.0	3.0
Sensor Factor	10.8	10.8
Conversion Factor	0.8027	0.6138
Calibration Date (MM/DD/YY)	20 Nov 2001	21 Nov 2001

Brain Tissue at 900MHz

Tested By: NAC **Date:** 15-Nov-01

Frequency: 900 MHz

Composition					
Tap Water	DI Water	Sugar	Salt	HEC	Bactericide
26500.00 g	0.00 g	38000.00 g	600.00 g	0.00 g	20.00 g
40.69 %	0.00 %	58.35 %	0.92 %	0.00 %	0.03 %

Mixture: Brain

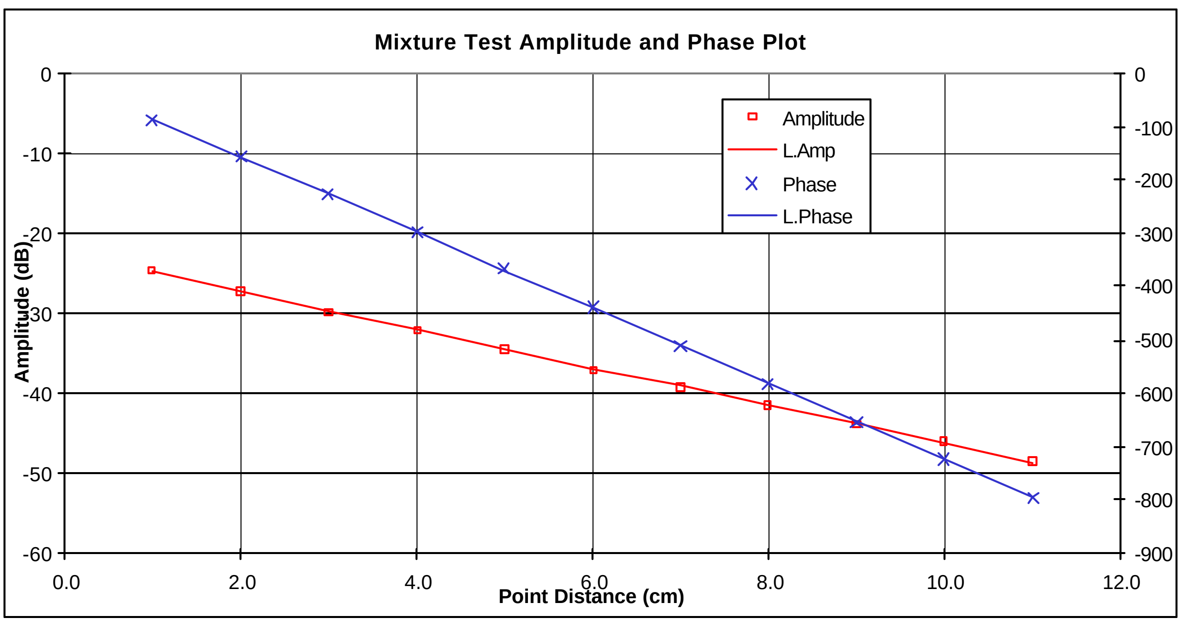
# of Points: 11 **Point Dist:** 1 cm **Temperature:** 25 °C

Point	Amplitude	Phase
1	-24.70	-87.00
2	-27.30	-156.00
3	-29.80	133.00
4	-32.10	61.00
5	-34.50	-8.00
6	-37.00	-80.00
7	-39.20	-150.00
8	-41.50	139.00
9	-43.90	67.00
10	-46.10	-3.00
11	-48.40	-75.00

-49.9	
-51.6	-2.359090909
-53.5	-22.61818182
-55.3	-70.83636364
-56.9	-14.89090909

Omega:	5654866776	rad/sec
Epsilon 0:	8.85E-14	F/m
mu:	1.26E-08	H/m
alpha avg:	-0.271600378	Np/cm
beta avg:	-1.236327776	rad/cm

Results:		**Target**	**Low Limit**	**High Limit**	**% Off Target**
D. Const:	**40.9**	41.5	39.425	43.575	-1.48
Cond:	**0.95**	0.97	0.9215	1.0185	-2.60



Muscle Tissue at 900MHz

Tested By: NAC **Date:** 22-Nov-01

Frequency: 900 MHz

Composition					
Tap Water	DI Water	Sugar	Salt	HEC	Bactericide
35000.00 g	0.00 g	28000.00 g	525.00 g	0.00 g	30.00 g
55.07 %	0.00 %	44.06 %	0.83 %	0.00 %	0.05 %

Mixture: Muscle

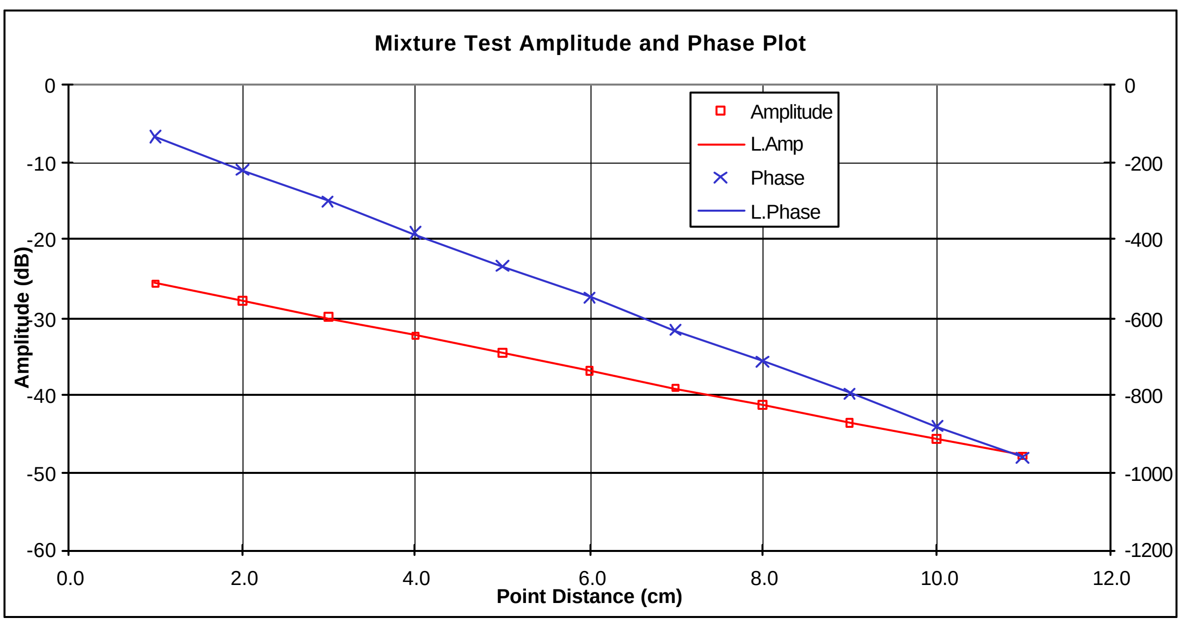
# of Points: 11 **Point Dist:** 1 cm **Temperature:** 25 °C

Point	Amplitude	Phase
1	-25.60	-136.00
2	-27.80	140.00
3	-29.90	58.00
4	-32.30	-24.00
5	-34.50	-106.00
6	-36.80	170.00
7	-39.10	88.00
8	-41.30	5.00
9	-43.50	-77.00
10	-45.70	-159.00
11	-47.90	116.00

-49.9	
-51.6	-2.240909091
-53.5	-23.31818182
-55.3	-82.62727273
-56.9	-53.78181818

Omega:	5654866776	rad/sec
Epsilon 0:	8.85E-14	F/m
mu:	1.26E-08	H/m
alpha avg:	-0.257994193	Np/cm
beta avg:	-1.442117961	rad/cm

Results:		**Target**	**Low Limit**	**High Limit**	**% Off Target**
D. Const:	**56.6**	55.0	52.25	57.75	2.84
Cond:	**1.05**	1.05	0.9975	1.1025	-0.27



ANNEX D

REFERENCES

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

Publications	Year	Title
FCC OET Bulletin 65	1997	"Evaluating Compliance with FCC Guidelines for Human Exposure to radio Frequency Fields"
IEEE Standard 1528-200X	2000	"Product Performance Standards Relative to the safe Use of Electromagnetic Energy"
ANSI/IEEE C95.3	1992	"Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave"
ANSI/IEEE C95.1	1992	"Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300GHz"
ACA, Radio Communications (EMR Human Exposure)	2000 (No.2)	"Radiocommunication (Electromagnetic Radiation – Human Exposure)"