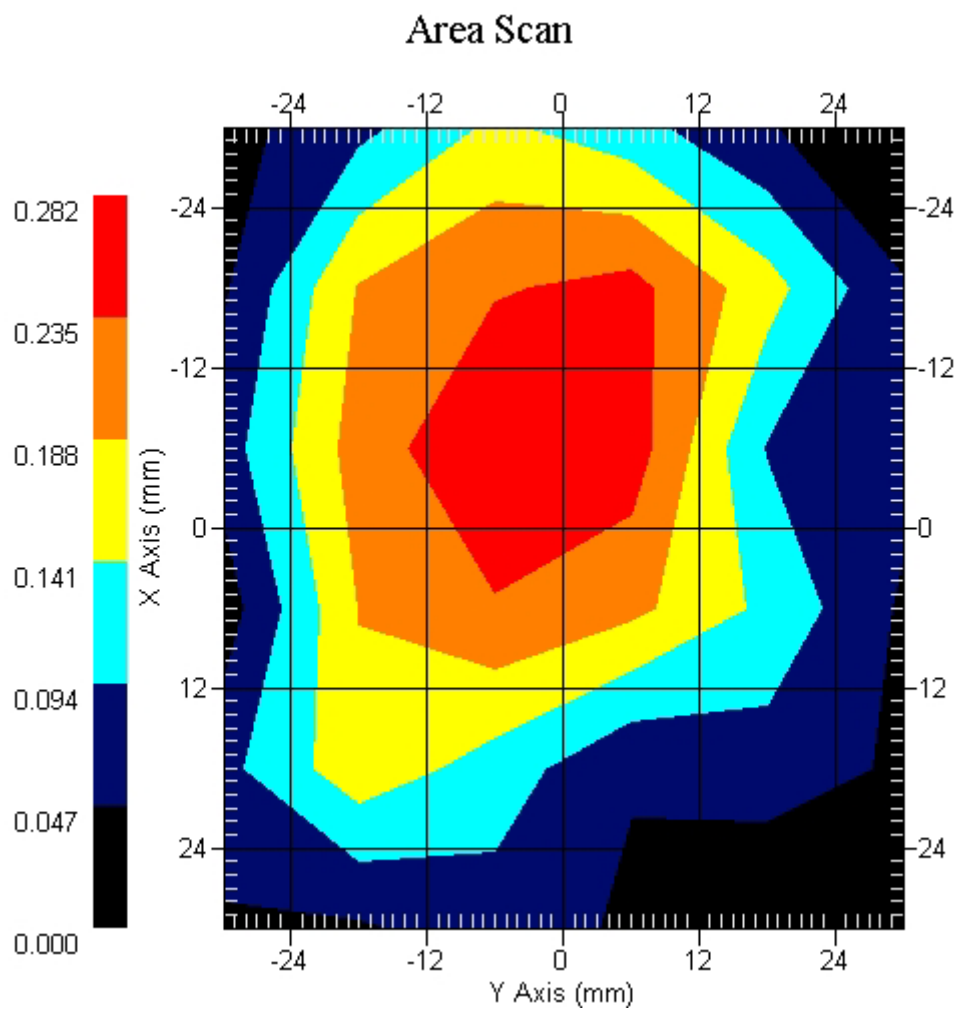


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ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report

Report Date : 09-Jun-2008
Measurement Date : 09-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 1900.00 MHz
Max. Transmit Pwr : 1 W
Drift Time : 0 min(s)
Length : 107.2 mm
Width : 51.2 mm
Depth : 14.9 mm

Phantom Data

Type : SAM-Right
Size (mm) : 280 x 280 x 280
Location : Right

Tissue Data

Type : HEAD
Serial No. : 324-H
Frequency : 1900.00 MHz
Last Calib. Date : 09-Jun-2008
Temperature : 20.20 °C
Ambient Temp. : 21.10 °C
Humidity : 50.00 RH%
Epsilon : 40.22 F/m
Sigma : 1.42 S/m
Density : 1000.00 kg/cu. m

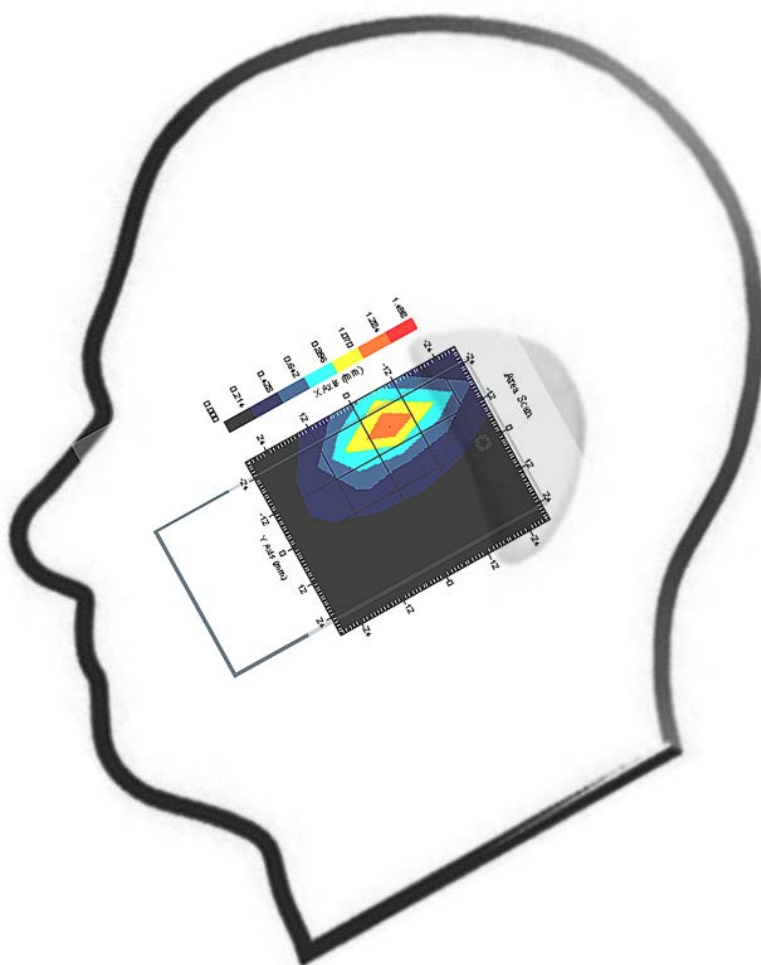
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 1900.00 MHz
Duty Cycle Factor: 8
Conversion Factor: 5.5
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

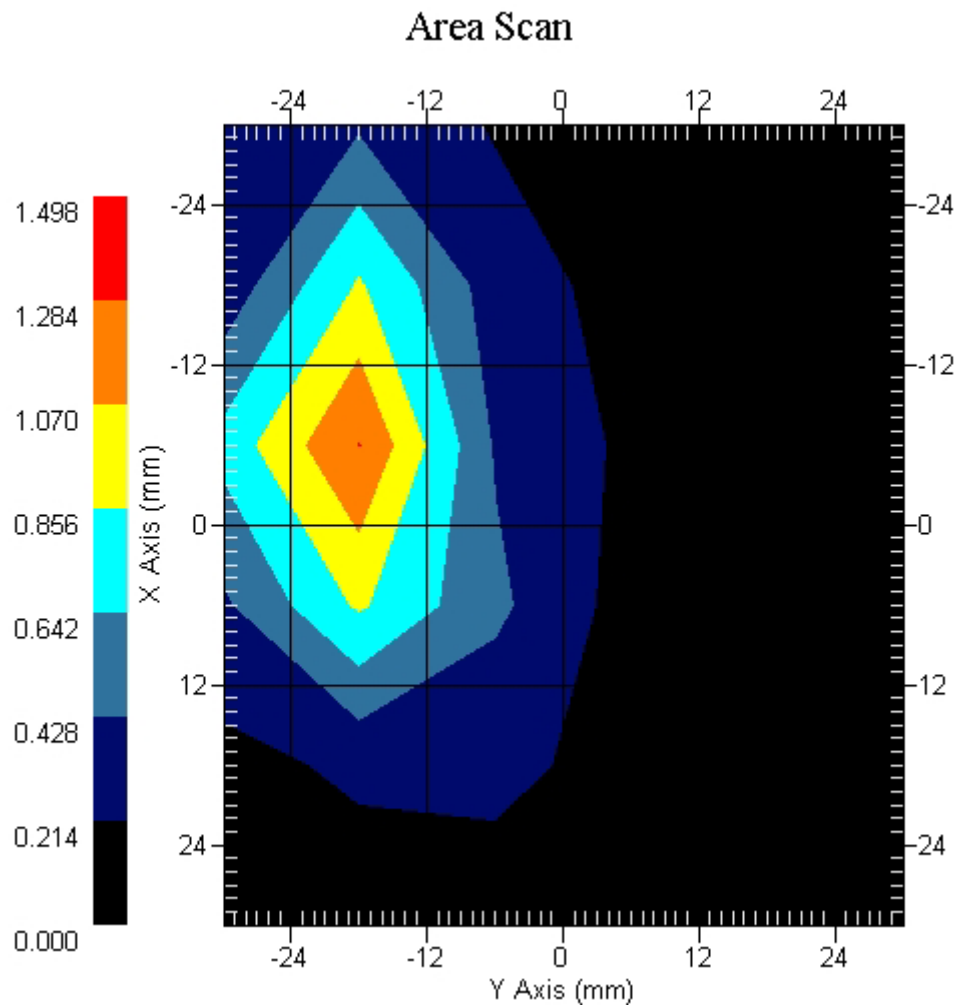
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.156 W/kg
 Power Drift-Finish: 0.150 W/kg
 Power Drift (%) : -3.846

DUT Position : Touch
 Channel : 512



1 gram SAR value : 0.992 W/kg
 10 gram SAR value : 0.556 W/kg
 Area Scan Peak SAR : 1.287 W/kg
 Zoom Scan Peak SAR : 1.882 W/kg

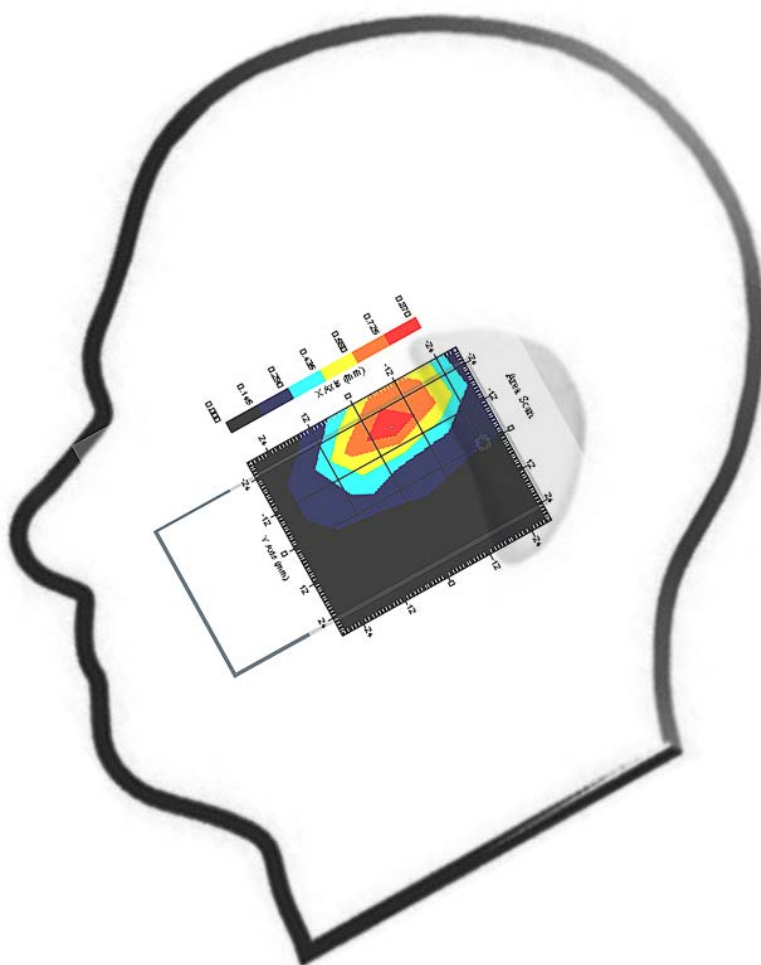
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Measurement Data

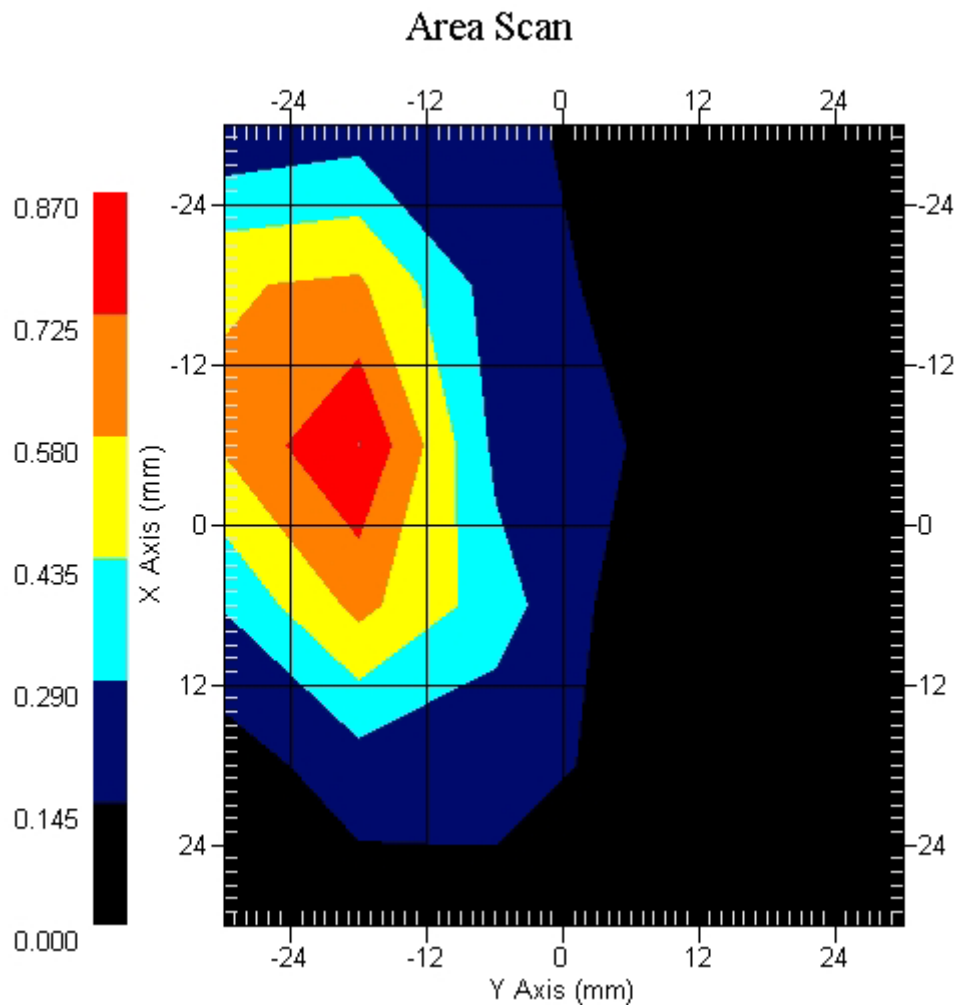
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.141 W/kg
 Power Drift-Finish: 0.136 W/kg
 Power Drift (%) : -3.741

DUT Position : Touch
 Channel : 661



1 gram SAR value : 0.857 W/kg
 10 gram SAR value : 0.423 W/kg
 Area Scan Peak SAR : 0.902 W/kg
 Zoom Scan Peak SAR : 1.735 W/kg

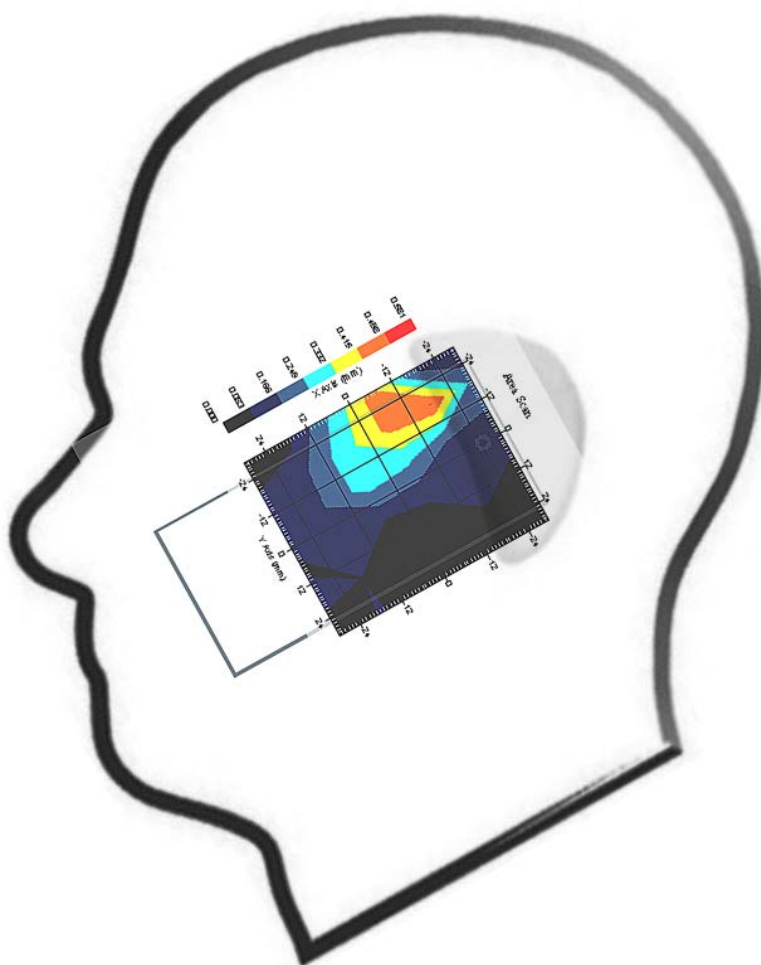
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Measurement Data

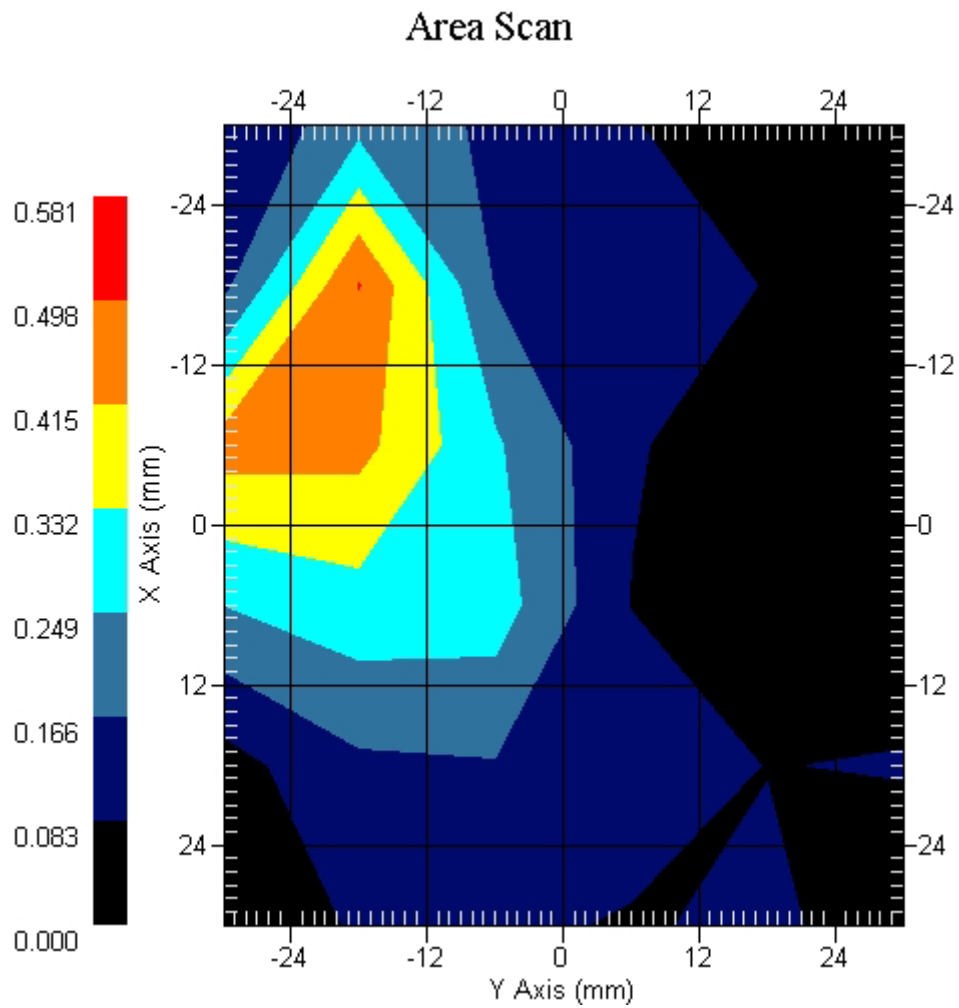
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.120 W/kg
 Power Drift-Finish: 0.117 W/kg
 Power Drift (%) : -2.500

DUT Position : Touch
 Channel : 810



1 gram SAR value : 0.612 W/kg
 10 gram SAR value : 0.318 W/kg
 Area Scan Peak SAR : 0.682 W/kg
 Zoom Scan Peak SAR : 1.171 W/kg

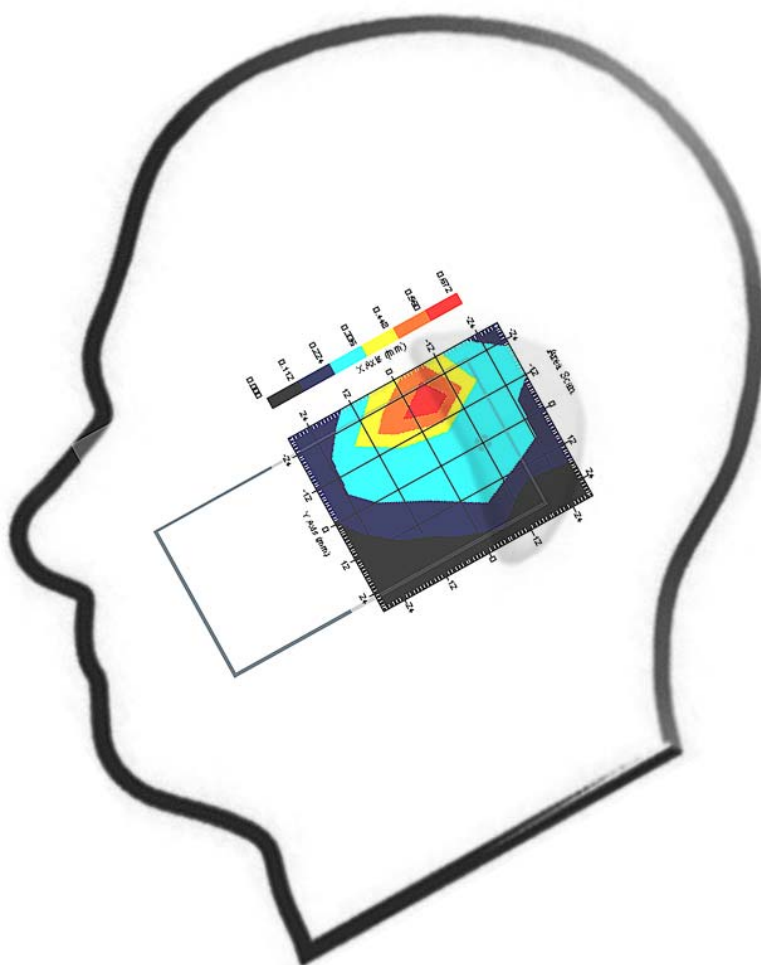
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Measurement Data

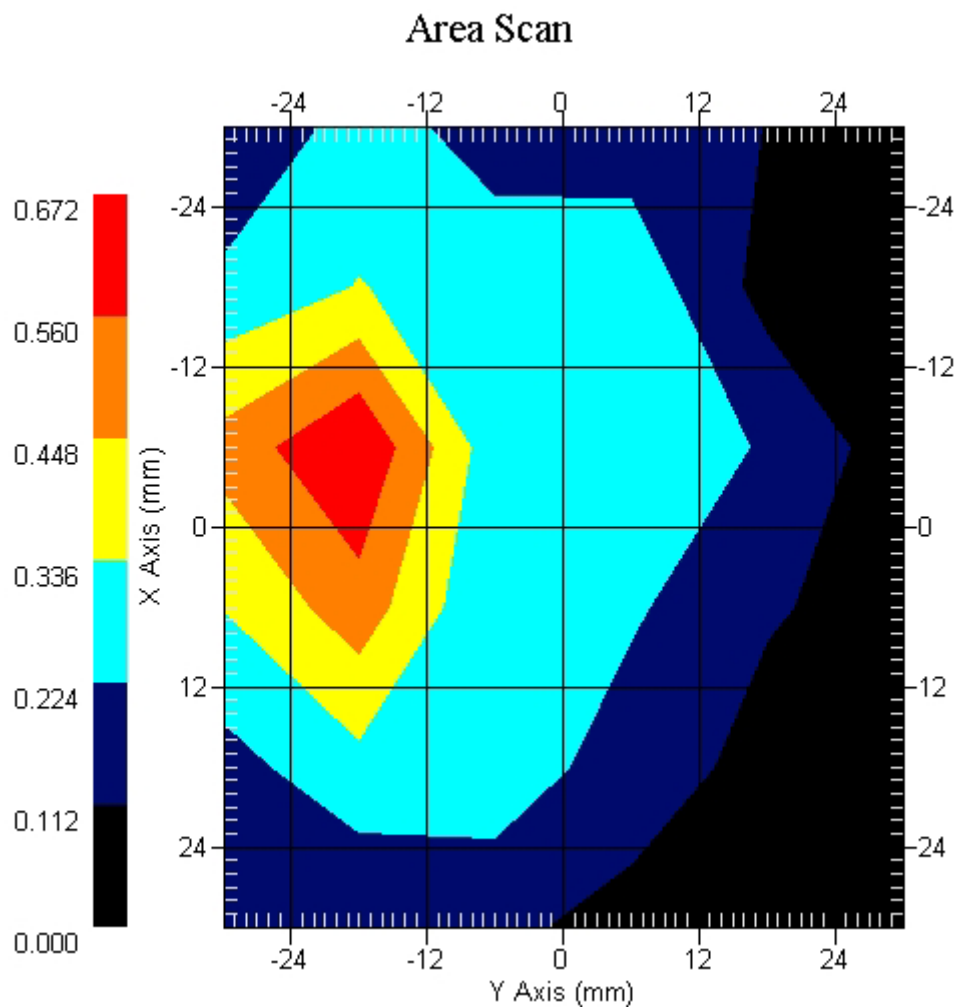
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.176 W/kg
 Power Drift-Finish: 0.181 W/kg
 Power Drift (%) : 2.840

DUT Position : 15° Tilt
 Channel : 512



1 gram SAR value : 0.574 W/kg
 10 gram SAR value : 0.366 W/kg
 Area Scan Peak SAR : 0.670 W/kg
 Zoom Scan Peak SAR : 1.025 W/kg

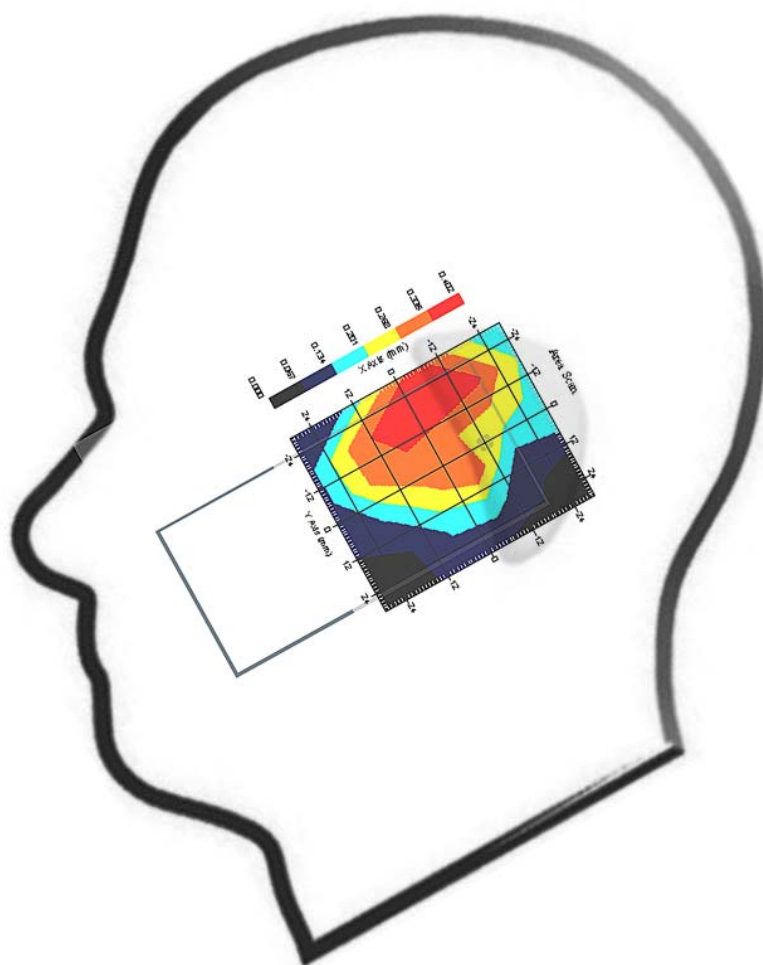
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Measurement Data

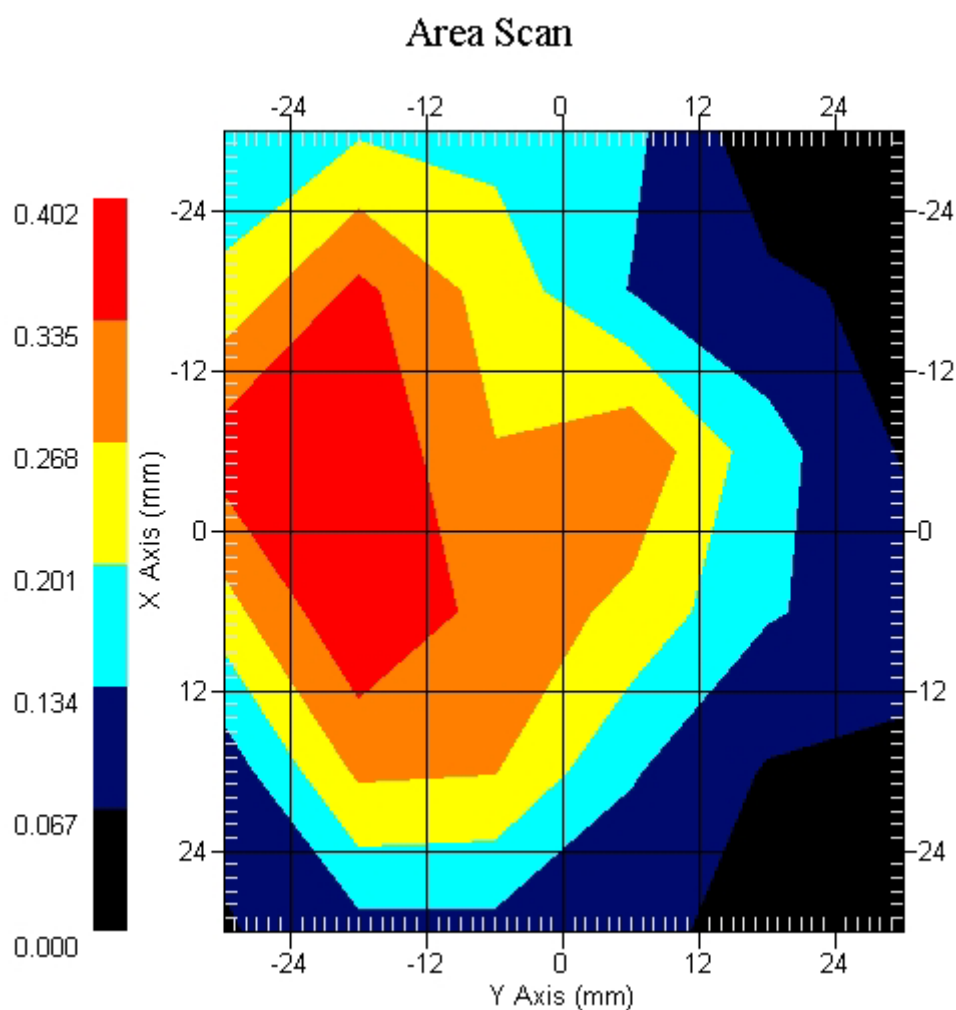
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.275 W/kg
 Power Drift-Finish: 0.280 W/kg
 Power Drift (%) : 1.818

DUT Position : 15° Tilt
 Channel : 661



1 gram SAR value : 0.323 W/kg
 10 gram SAR value : 0.265 W/kg
 Area Scan Peak SAR : 0.400 W/kg
 Zoom Scan Peak SAR : 0.586 W/kg

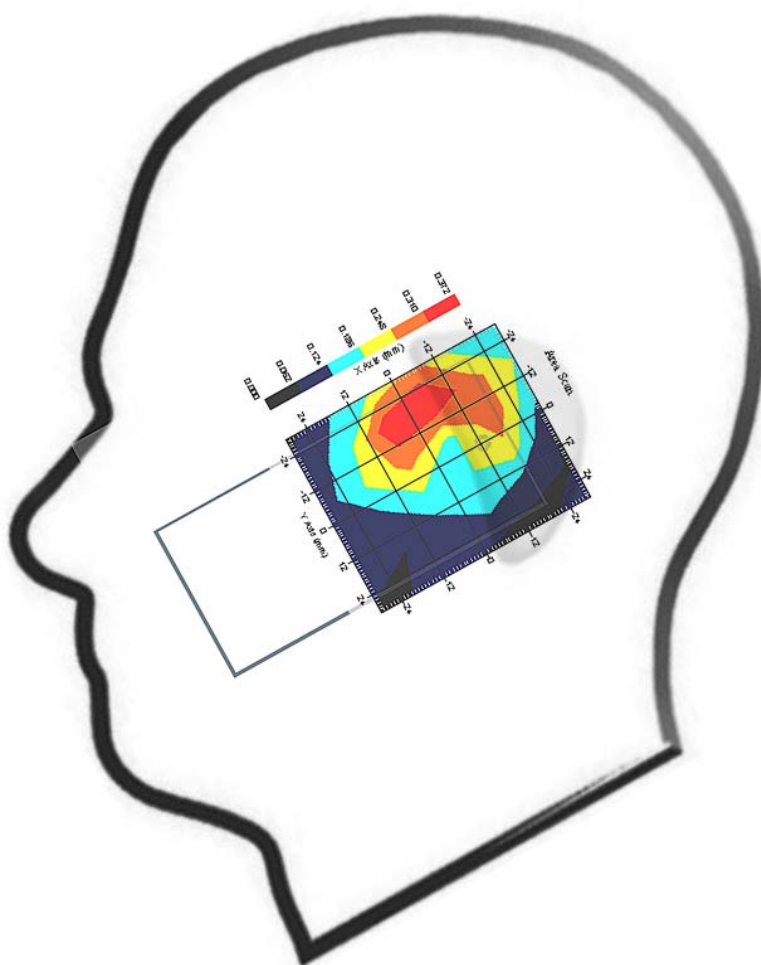
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Measurement Data

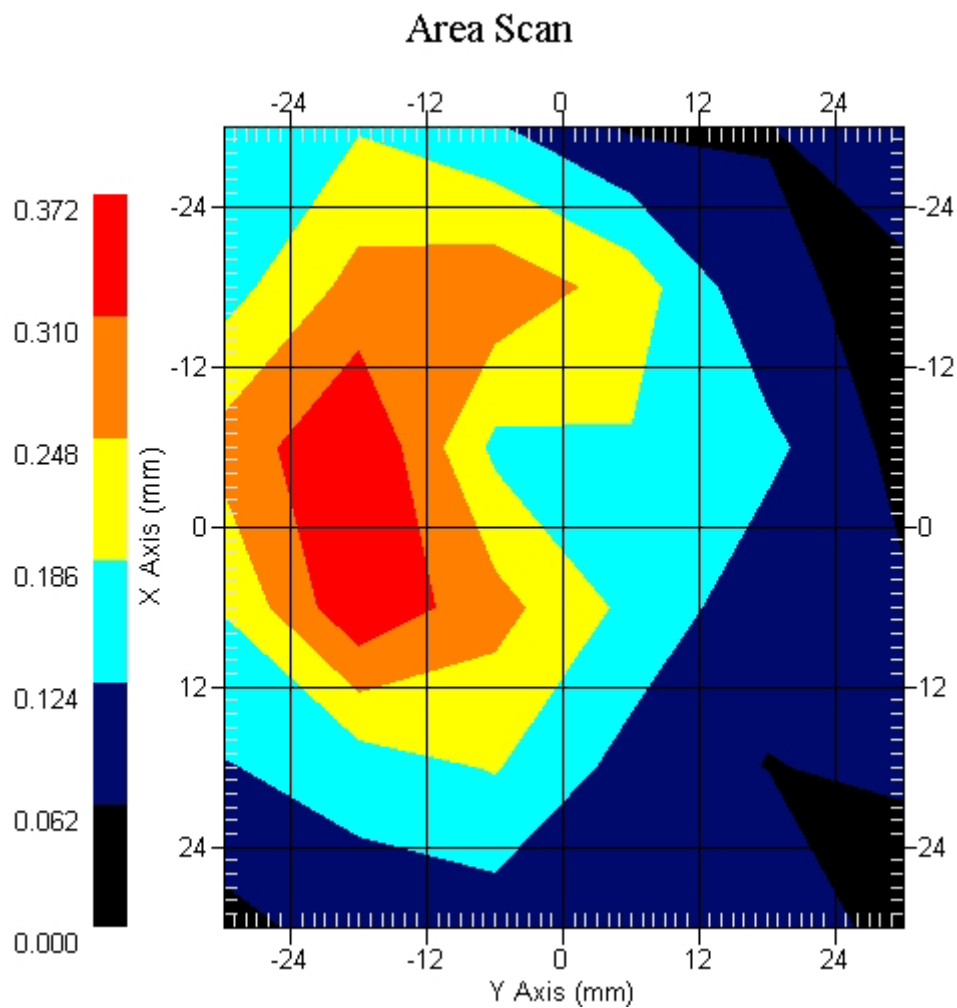
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.202 W/kg
 Power Drift-Finish: 0.199 W/kg
 Power Drift (%) : -1.485

DUT Position : 15° Tilt
 Channel : 810



1 gram SAR value : 0.293 W/kg
 10 gram SAR value : 0.224 W/kg
 Area Scan Peak SAR : 0.370 W/kg
 Zoom Scan Peak SAR : 0.532 W/kg

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ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report

Report Date : 09-Jun-2008
Measurement Date : 09-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 1900.00 MHz
Max. Transmit Pwr : 1 W
Drift Time : 0 min(s)
Length : 107.2 mm
Width : 51.2 mm
Depth : 14.9 mm

Phantom Data

Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Location : Center

Tissue Data

Type : BODY
Serial No. : 324-B
Frequency : 1900.00 MHz
Last Calib. Date : 09-Jun-2007
Temperature : 20.20 °C
Ambient Temp. : 21.10 °C
Humidity : 50.00 RH%
Epsilon : 53.45 F/m
Sigma : 1.53 S/m
Density : 1000.00 kg/cu. m

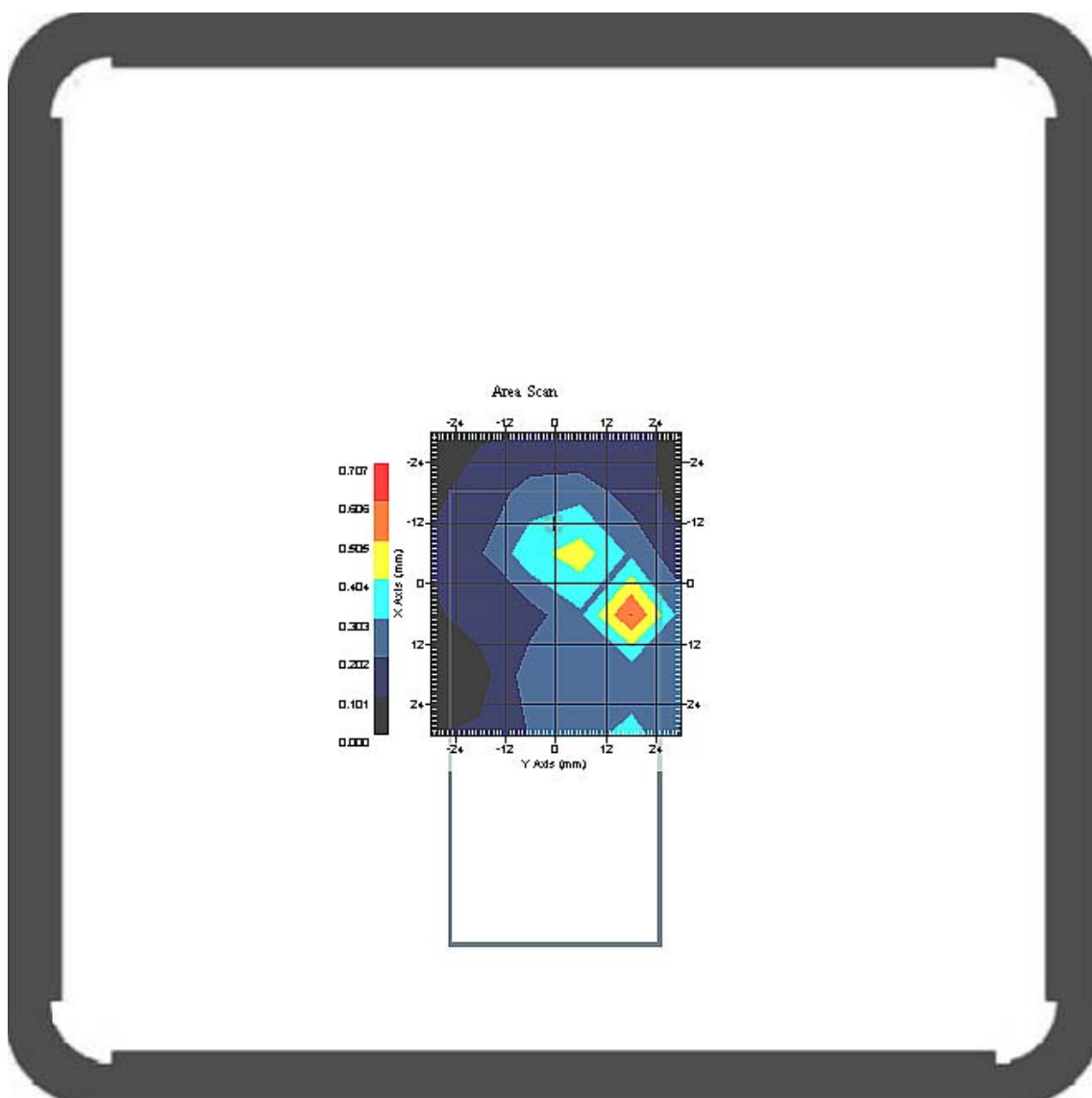
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 1900.00 MHz
Duty Cycle Factor: 8
Conversion Factor: 5.75
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

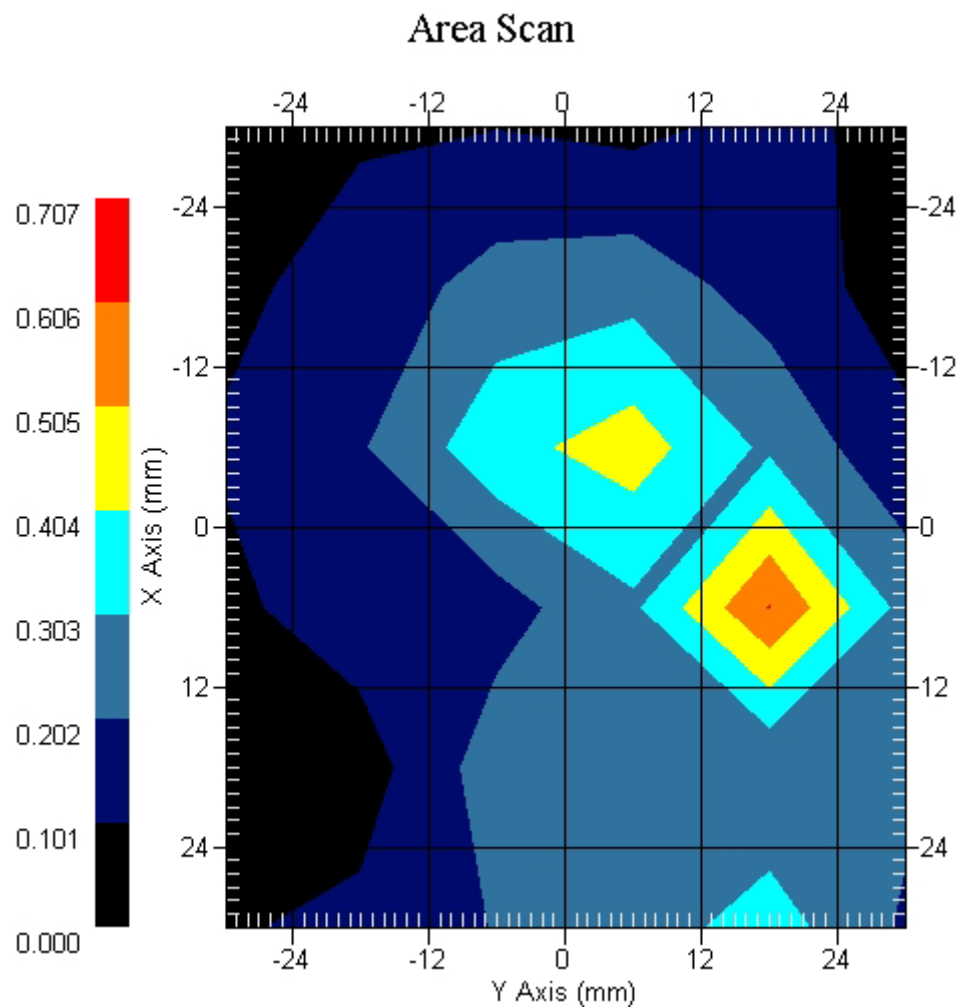
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.287 W/kg
 Power Drift-Finish: 0.298 W/kg
 Power Drift (%) : 3.832

DUT Position : Touch
 Channel : 512



1 gram SAR value : 0.499 W/kg
 10 gram SAR value : 0.245 W/kg
 Area Scan Peak SAR : 0.608 W/kg
 Zoom Scan Peak SAR : 0.910 W/kg

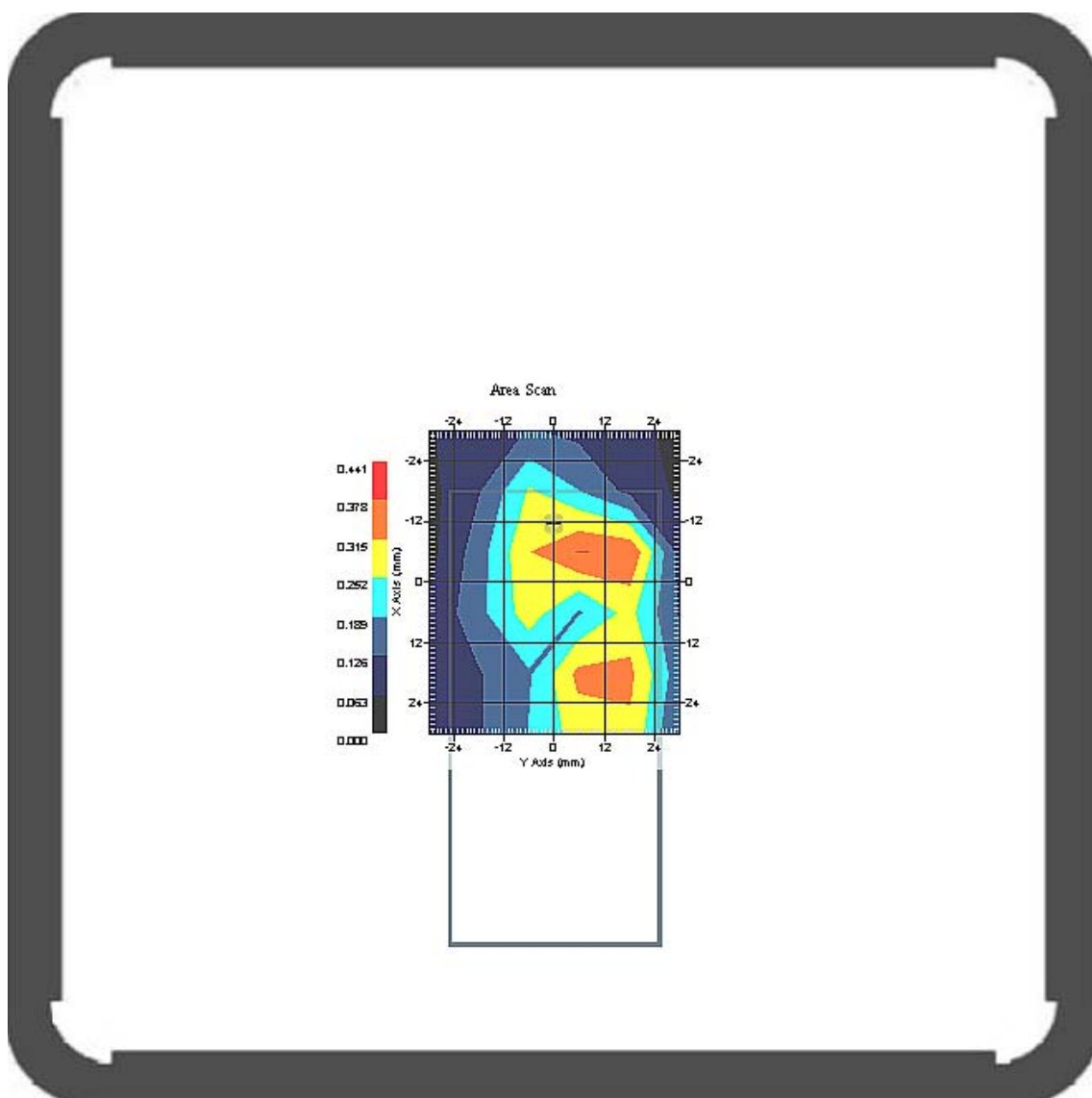
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Measurement Data

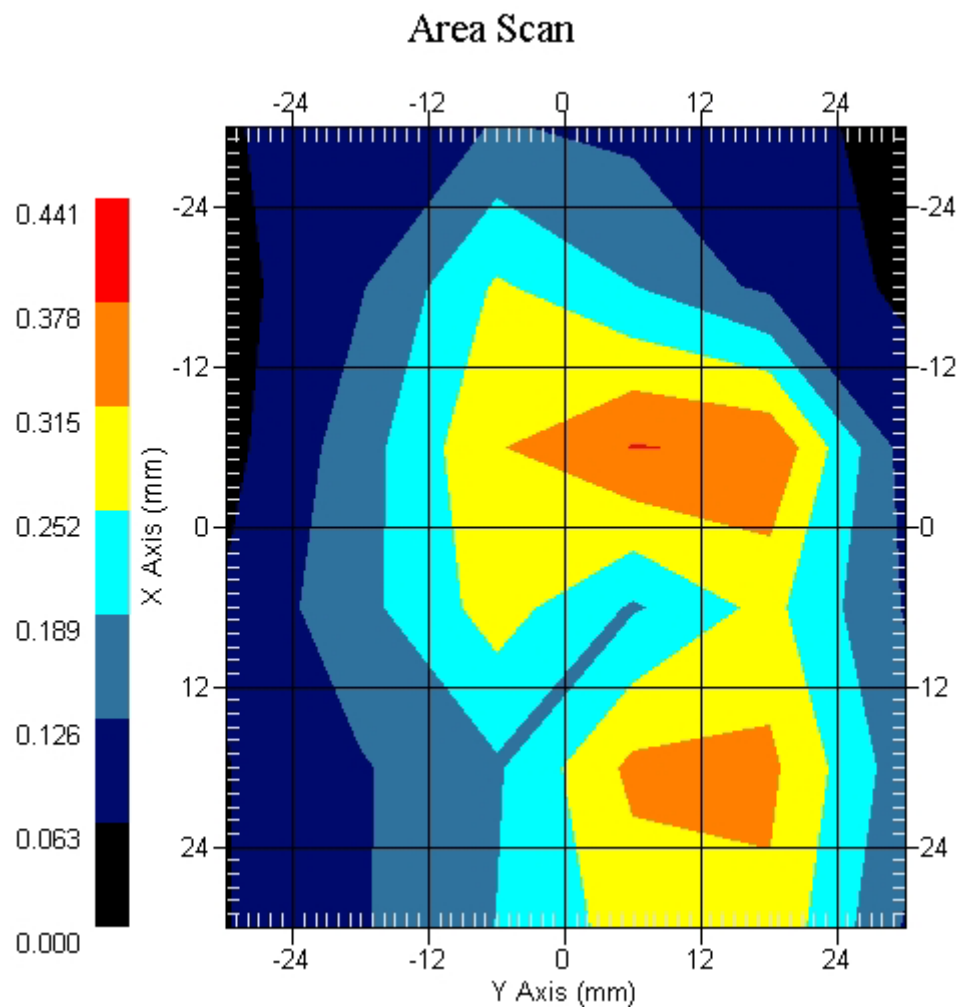
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.306 W/kg
 Power Drift-Finish: 0.313 W/kg
 Power Drift (%) : 2.287

DUT Position : Touch
 Channel : 661



1 gram SAR value : 0.389 W/kg
 10 gram SAR value : 0.197 W/kg
 Area Scan Peak SAR : 0.380 W/kg
 Zoom Scan Peak SAR : 0.768 W/kg

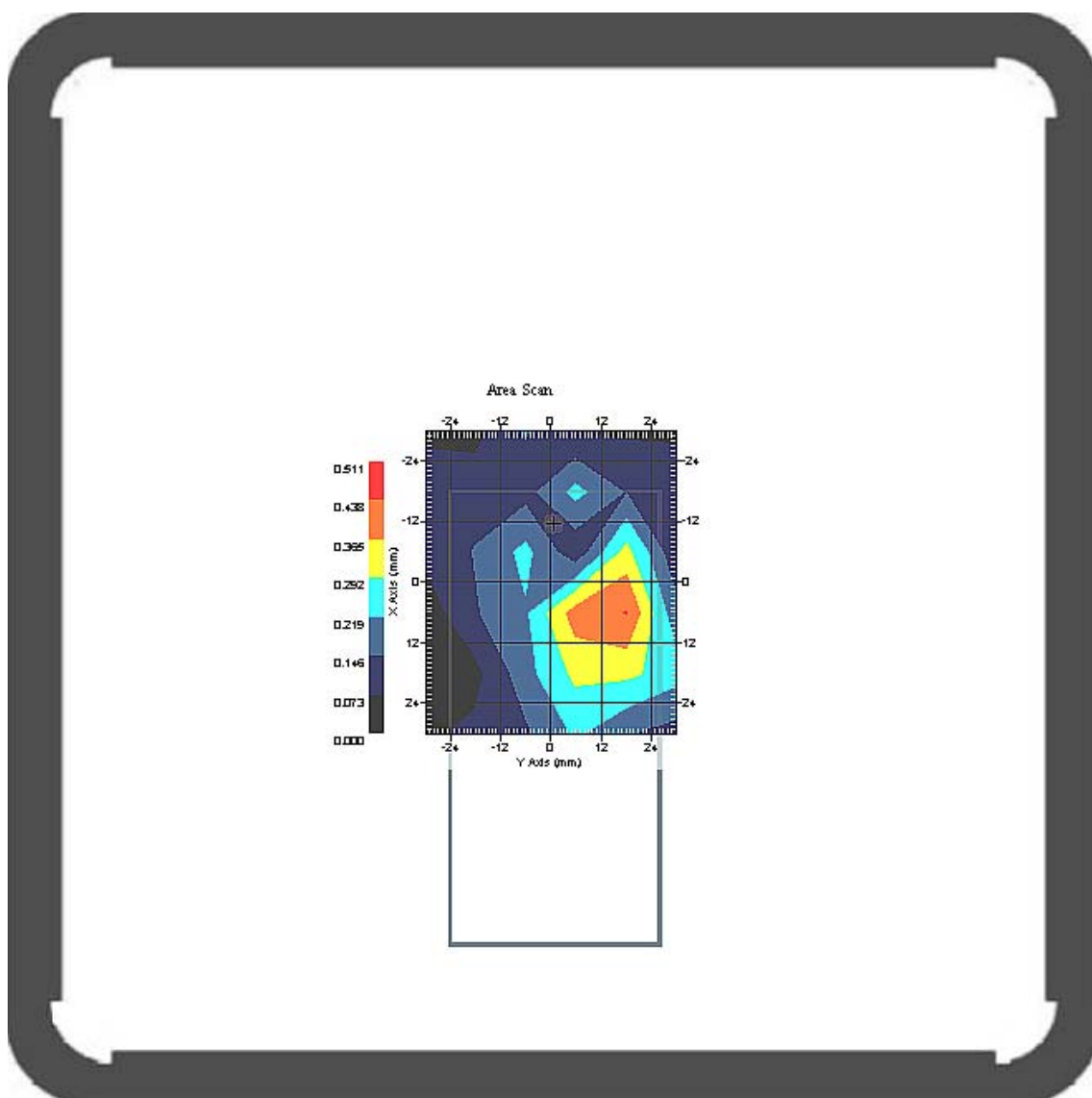
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Measurement Data

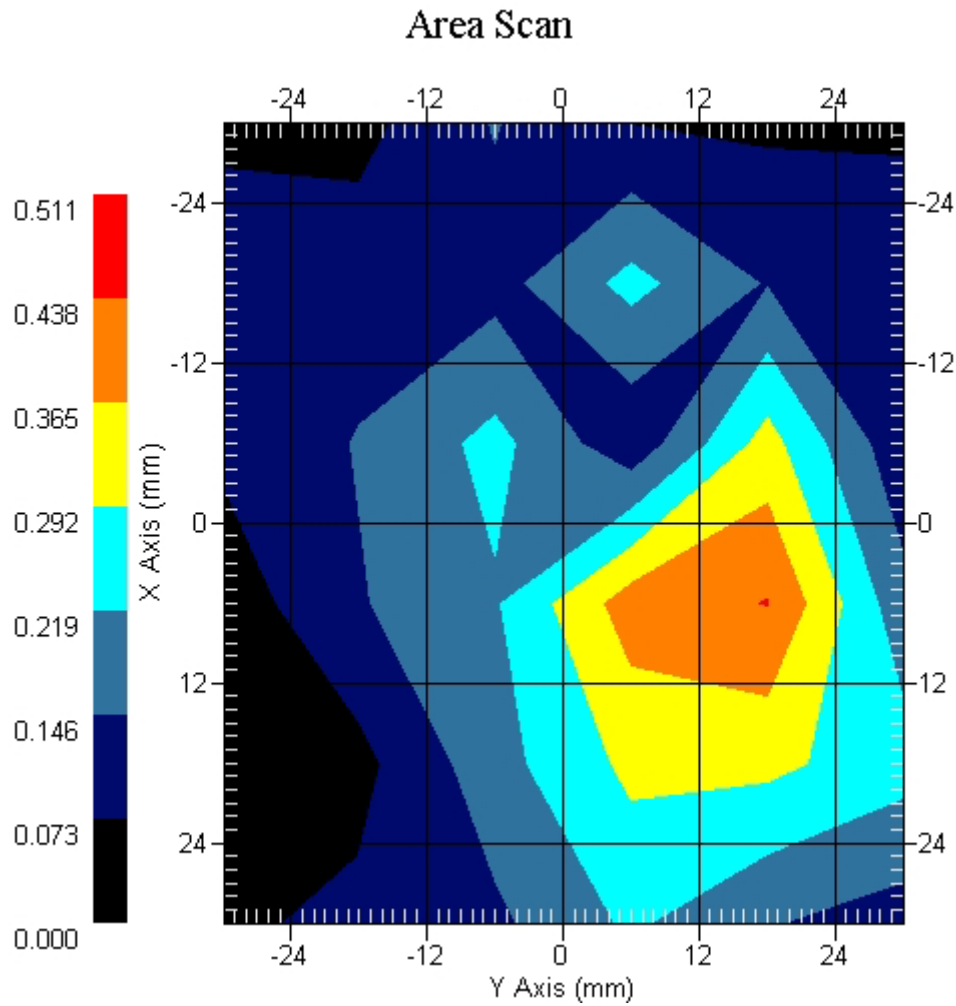
Crest Factor : 8
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.288 W/kg
 Power Drift-Finish: 0.295 W/kg
 Power Drift (%) : 2.430

DUT Position : Touch
 Channel : 810



1 gram SAR value : 0.438 W/kg
 10 gram SAR value : 0.152 W/kg
 Area Scan Peak SAR : 0.440 W/kg
 Zoom Scan Peak SAR : 0.811 W/kg

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ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report-PCS 1900 GPRS

Report Date : 12-Jun-2008

Measurement Date : 12-Jun-2008

Product Data

Device Name : E-TEN
 Type : Std Form Cell Phone
 Model : X610
 Frequency : 1900.00 MHz
 Max. Transmit Pwr : 1 W
 Drift Time : 0 min(s)
 Length : 107.2 mm
 Width : 51.2 mm
 Depth : 14.9 mm
 Antenna Type : Internal

Phantom Data

Type : Uni-Phantom
 Size (mm) : 280 x 280 x 200
 Location : Center

Tissue Data

Type : BODY
 Serial No. : 324-B
 Frequency : 1900.00 MHz
 Last Calib. Date : 12-Jun-2007
 Temperature : 20.20 °C
 Ambient Temp. : 21.10 °C
 Humidity : 48.00 RH%
 Epsilon : 53.36 F/m
 Sigma : 1.54 S/m
 Density : 1000.00 kg/cu. m

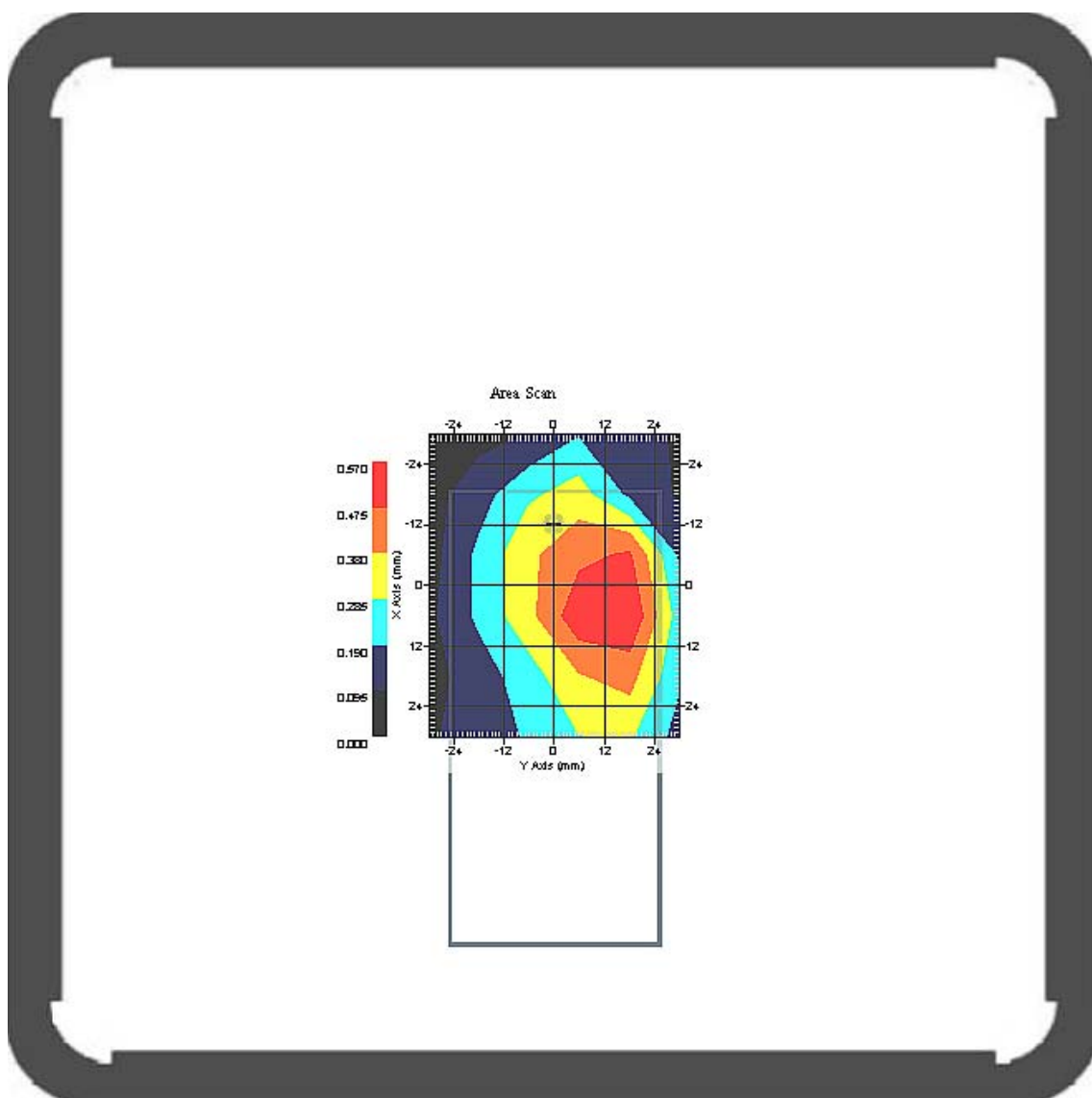
Probe Data

Name : Probe 264
 Model : E020
 Type : E-Field Triangle
 Serial No. : 264
 Last Calib. Date : 20-Aug-2007
 Frequency : 1900.00 MHz
 Duty Cycle Factor: 4
 Conversion Factor: 5.75
 Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
 Compression Point: 95.00 mV
 Offset : 1.56 mm

Measurement Data

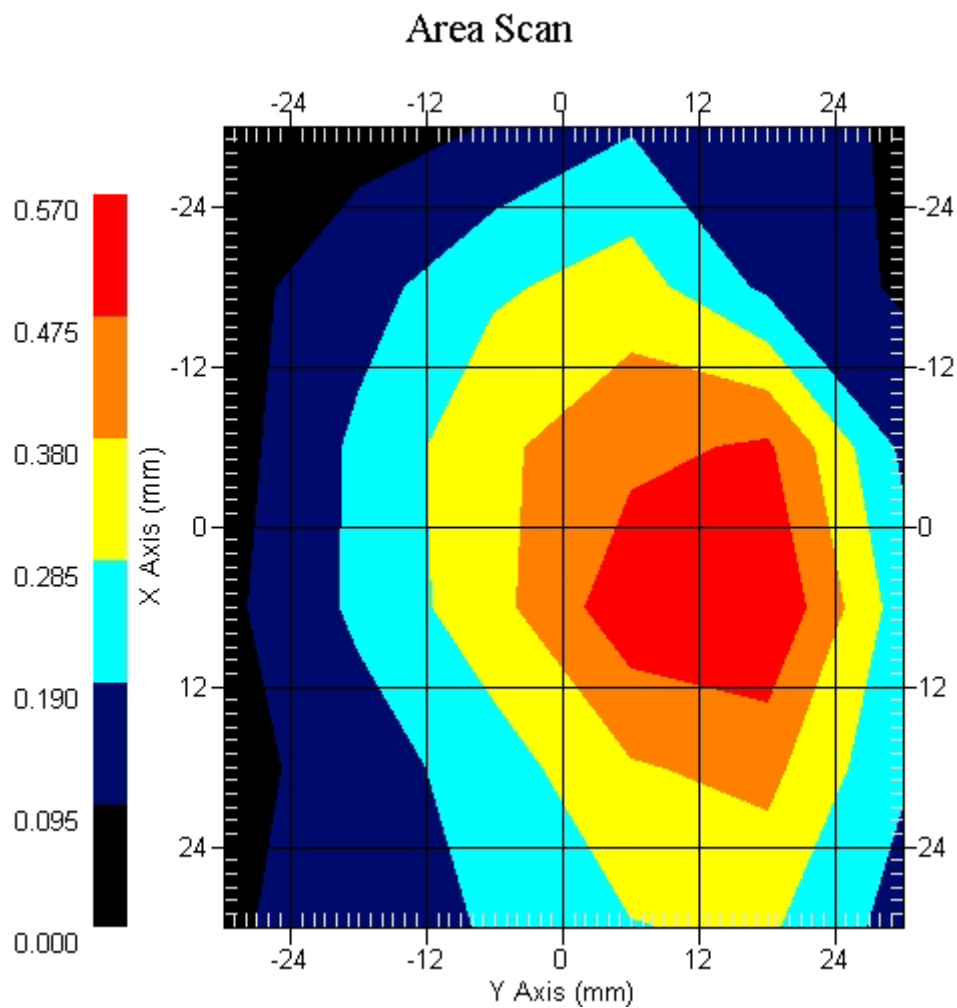
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.369 W/kg
 Power Drift-Finish: 0.378 W/kg
 Power Drift (%) : 2.438

DUT Position : Touch
 Channel : 512



1 gram SAR value : 0.542 W/kg
 10 gram SAR value : 0.395 W/kg
 Area Scan Peak SAR : 0.570 W/kg
 Zoom Scan Peak SAR : 0.904 W/kg

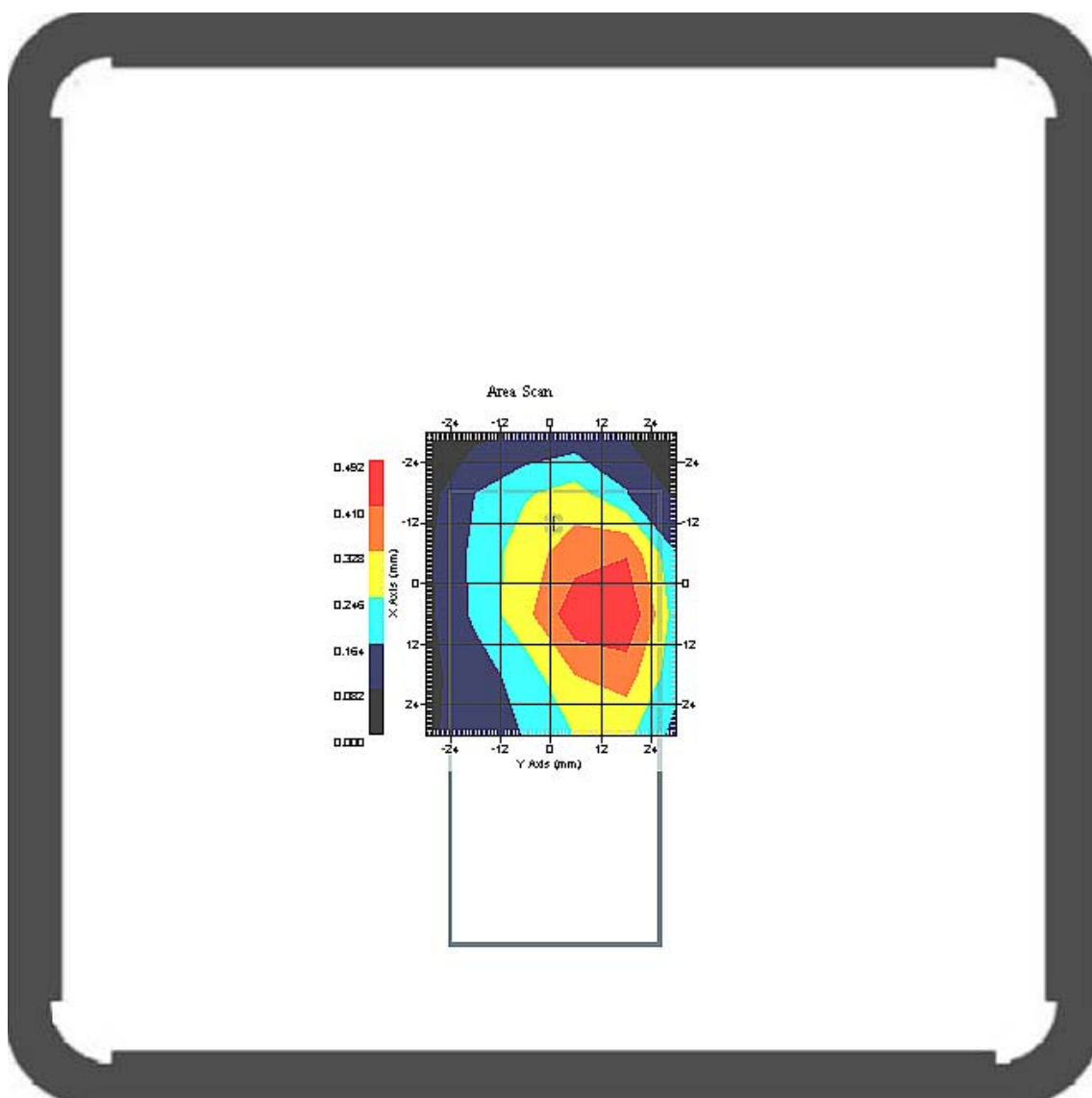
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Measurement Data

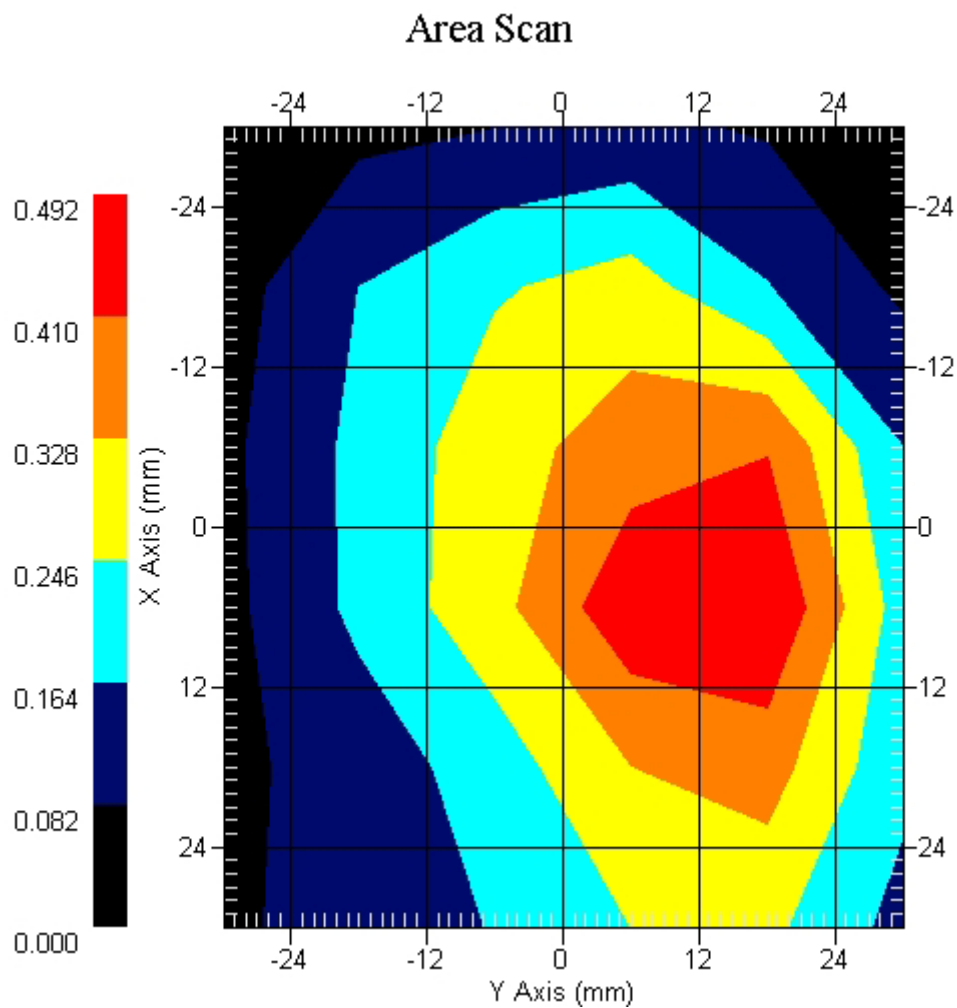
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.274 W/kg
 Power Drift-Finish: 0.281 W/kg
 Power Drift (%) : 2.554

DUT Position : Touch
 Channel : 661



1 gram SAR value : 0.485 W/kg
 10 gram SAR value : 0.271 W/kg
 Area Scan Peak SAR : 0.491 W/kg
 Zoom Scan Peak SAR : 0.830 W/kg

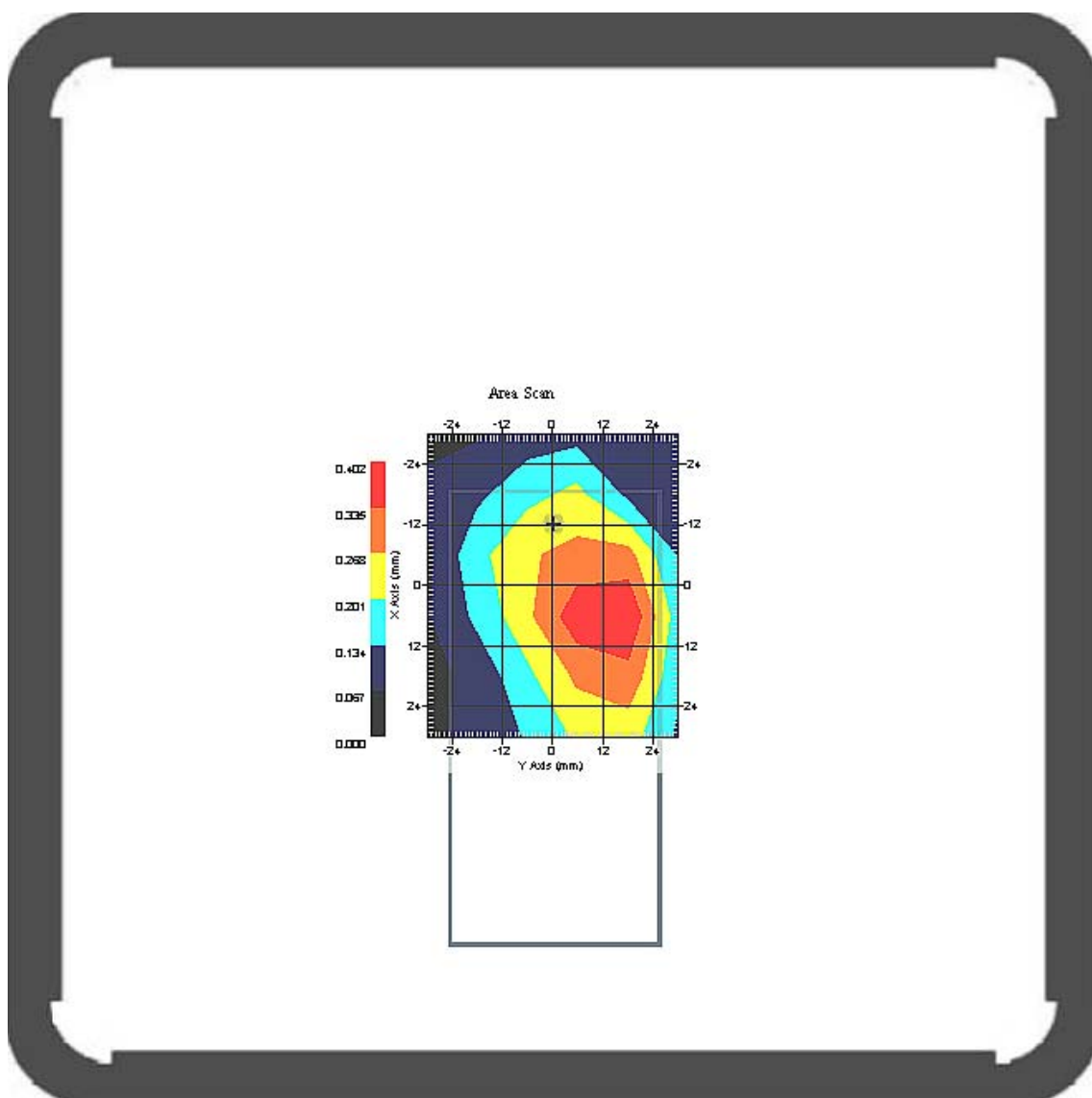
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Measurement Data

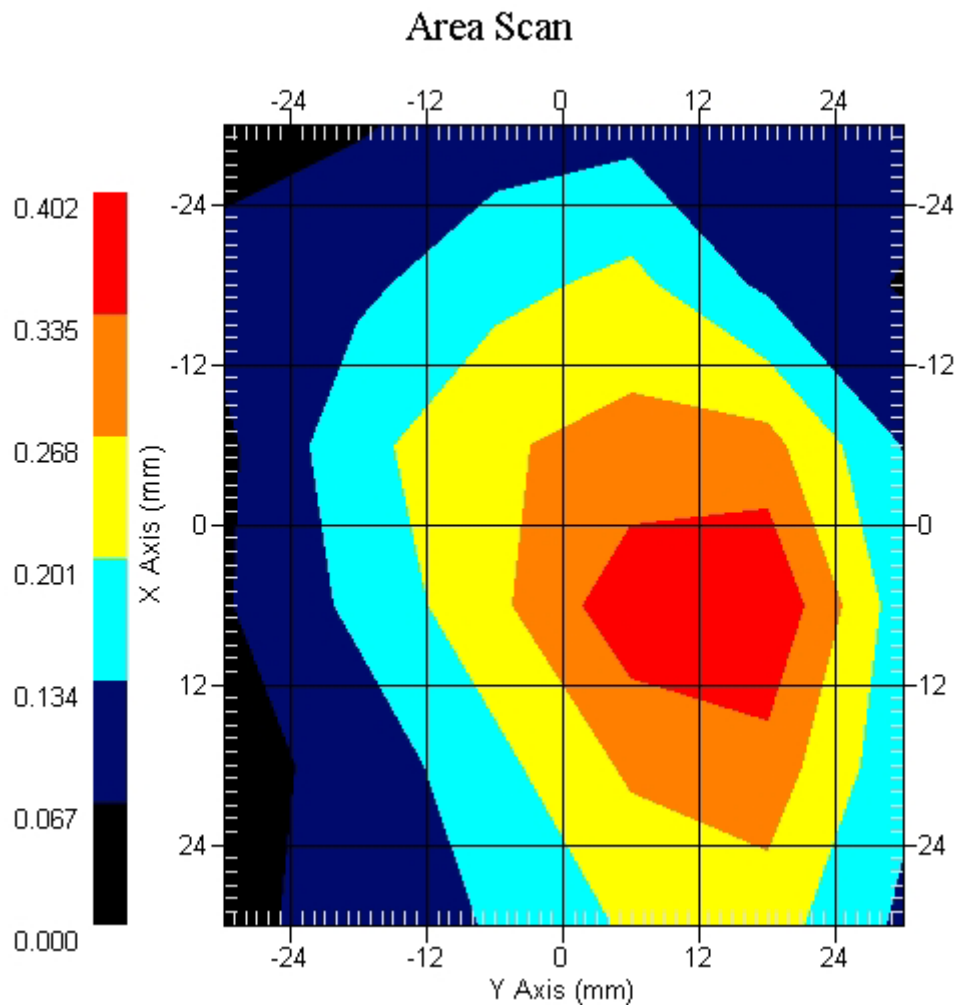
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.245 W/kg
 Power Drift-Finish: 0.256 W/kg
 Power Drift (%) : 4.582

DUT Position : Touch
 Channel : 810



1 gram SAR value : 0.362 W/kg
 10 gram SAR value : 0.207 W/kg
 Area Scan Peak SAR : 0.400 W/kg
 Zoom Scan Peak SAR : 0.741 W/kg

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ALSAS-10U VER 2.3.6 APREL Laboratories
SAR Test Report-PCS 1900 EGPRS

Report Date : 12-Jun-2008
Measurement Date : 12-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 1900.00 MHz
Max. Transmit Pwr : 1 W
Drift Time : 0 min(s)
Length : 107.2 mm
Width : 51.2 mm
Depth : 14.9 mm
Antenna Type : Internal

Phantom Data

Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Location : Center

Tissue Data

Type : BODY
Serial No. : 324-B
Frequency : 1900.00 MHz
Last Calib. Date : 12-Jun-2007
Temperature : 20.20 °C
Ambient Temp. : 21.10 °C
Humidity : 48.00 RH%
Epsilon : 39.72 F/m
Sigma : 1.54 S/m
Density : 1000.00 kg/cu. m

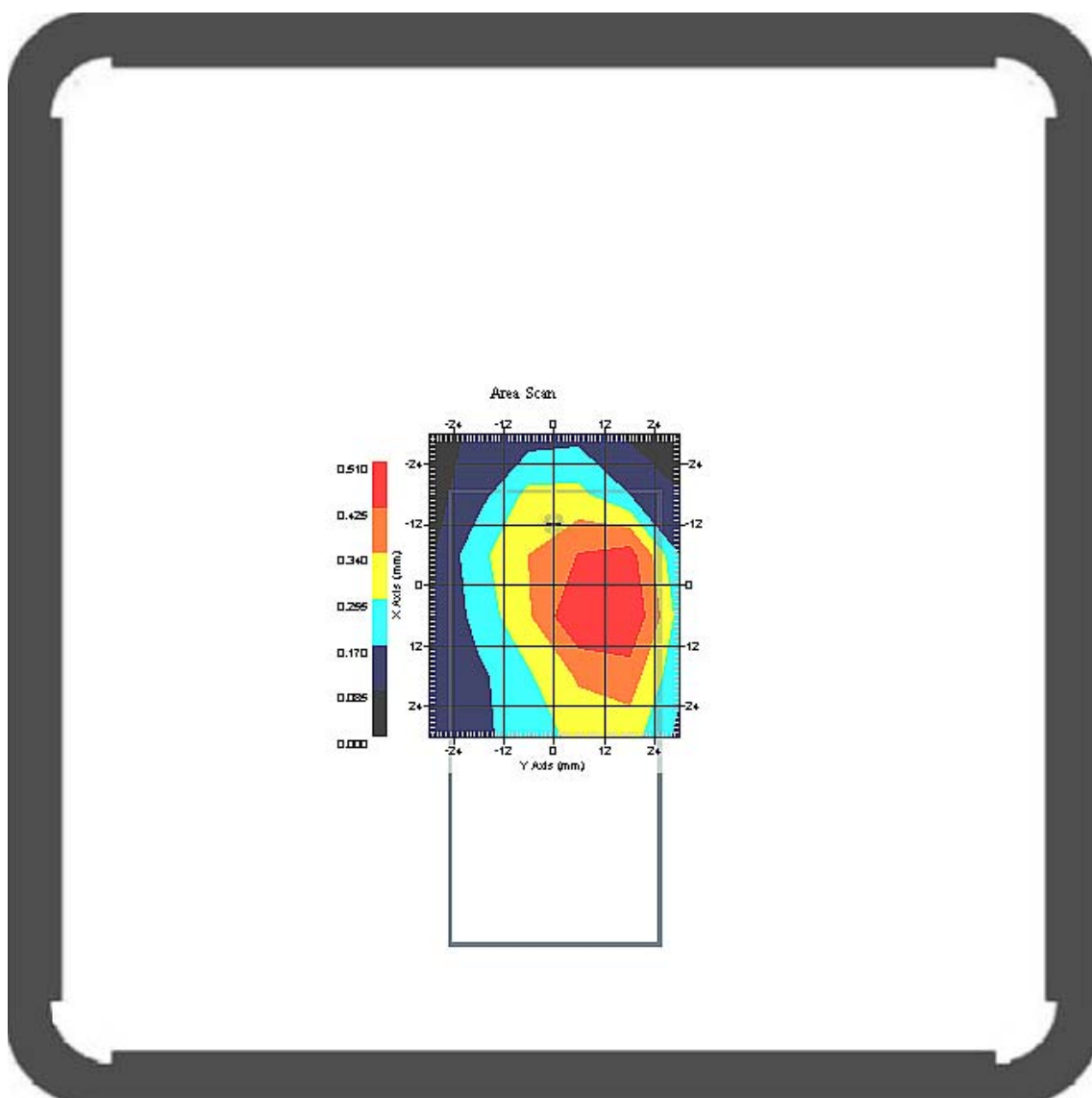
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 1900.00 MHz
Duty Cycle Factor: 4
Conversion Factor: 5.75
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

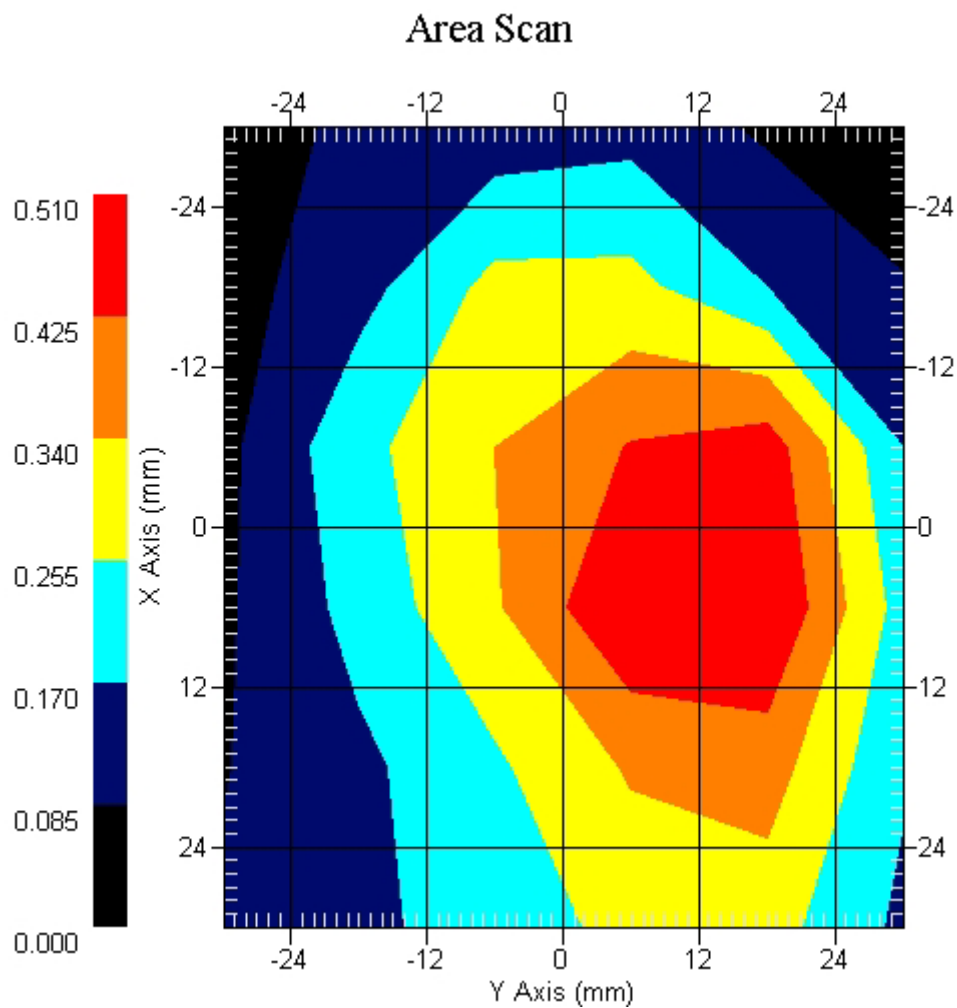
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.353 W/kg
 Power Drift-Finish: 0.344 W/kg
 Power Drift (%) : -2.544

DUT Position : Touch
 Channel : 512



1 gram SAR value : 0.483 W/kg
 10 gram SAR value : 0.282 W/kg
 Area Scan Peak SAR : 0.512 W/kg
 Zoom Scan Peak SAR : 0.903 W/kg

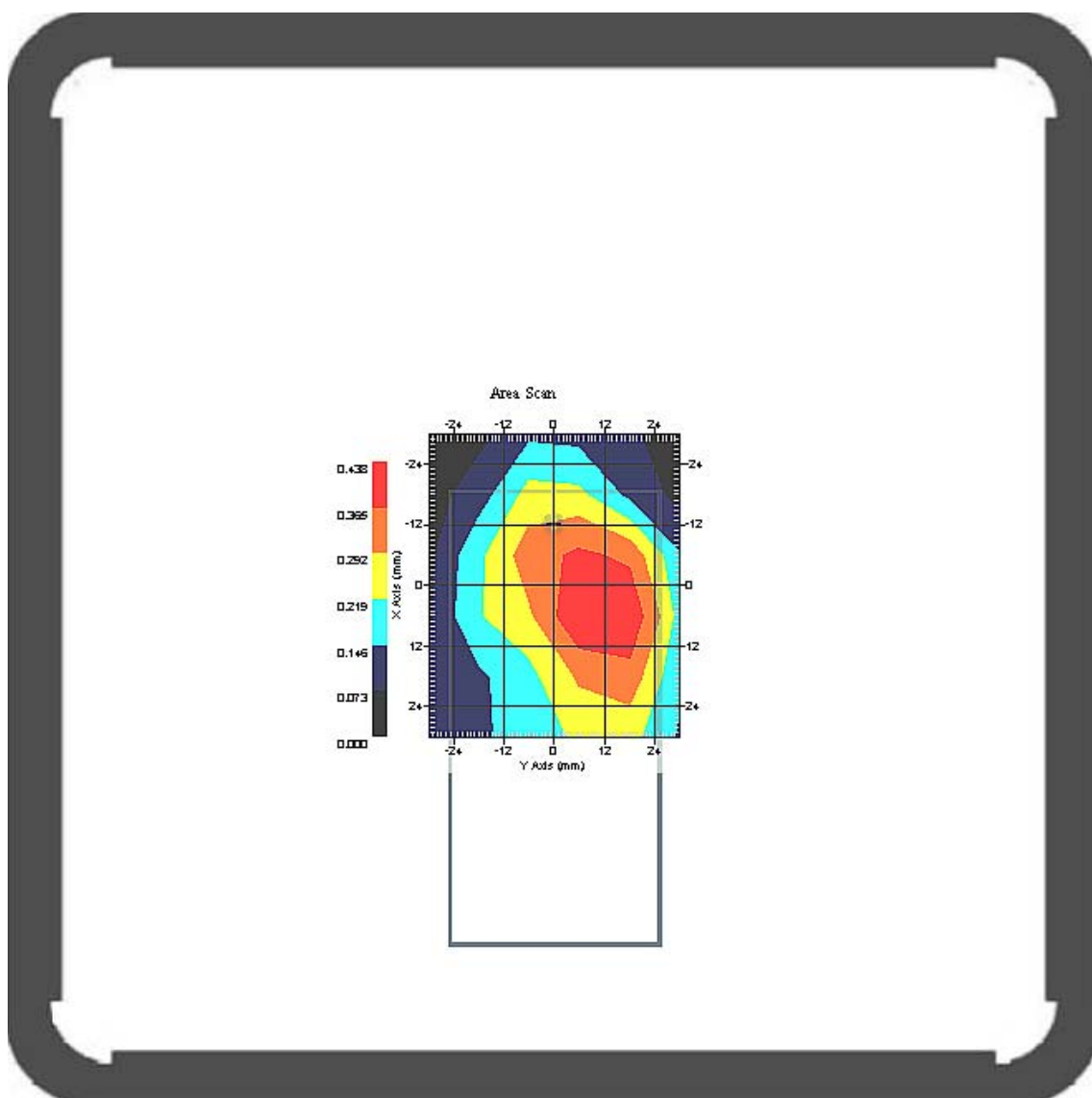
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Measurement Data

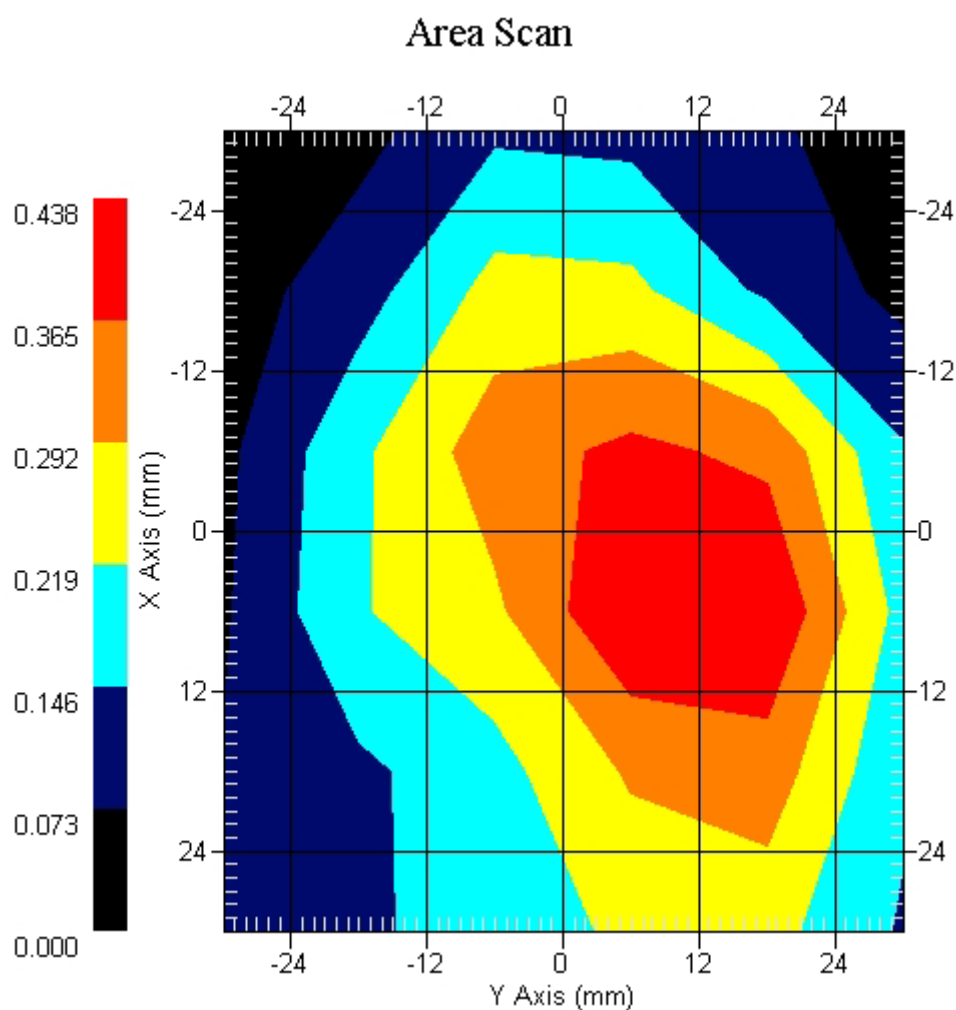
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.268 W/kg
 Power Drift-Finish: 0.259 W/kg
 Power Drift (%) : -3.358

DUT Position : Touch
 Channel : 661



1 gram SAR value : 0.401 W/kg
 10 gram SAR value : 0.248 W/kg
 Area Scan Peak SAR : 0.437 W/kg
 Zoom Scan Peak SAR : 0.790 W/kg

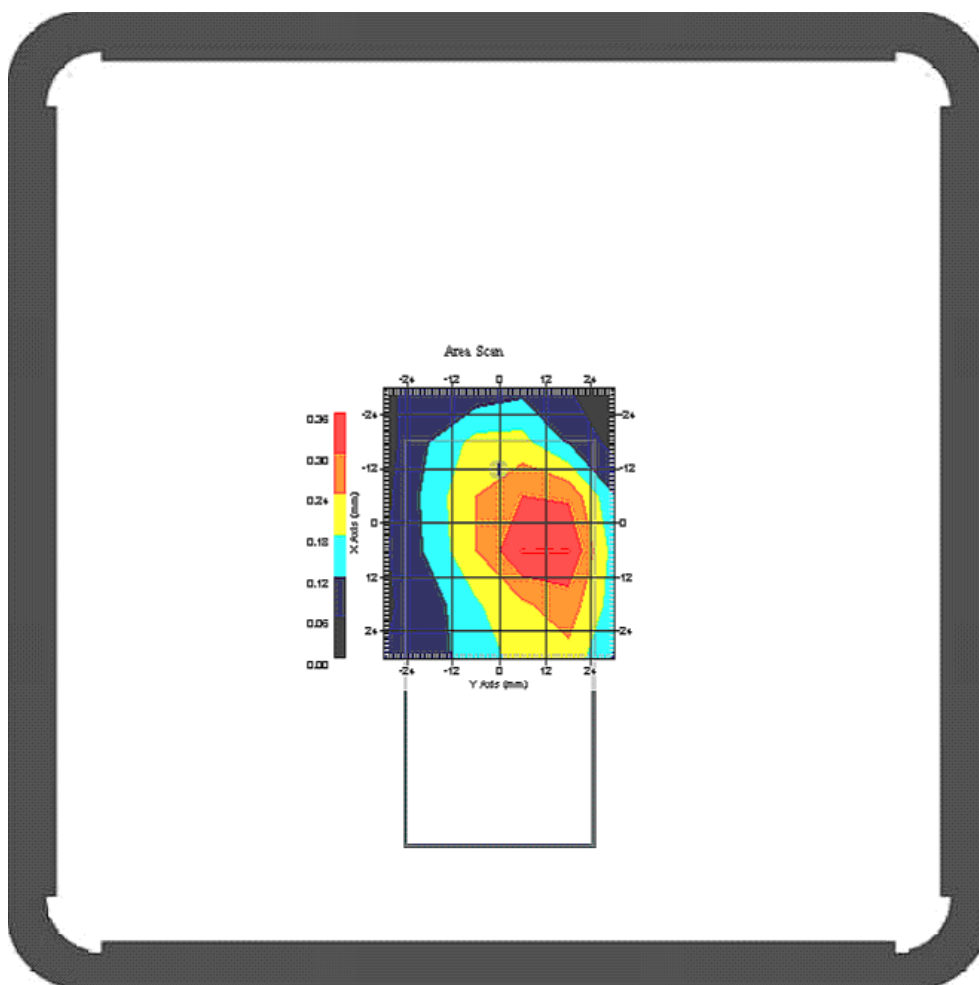
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Measurement Data

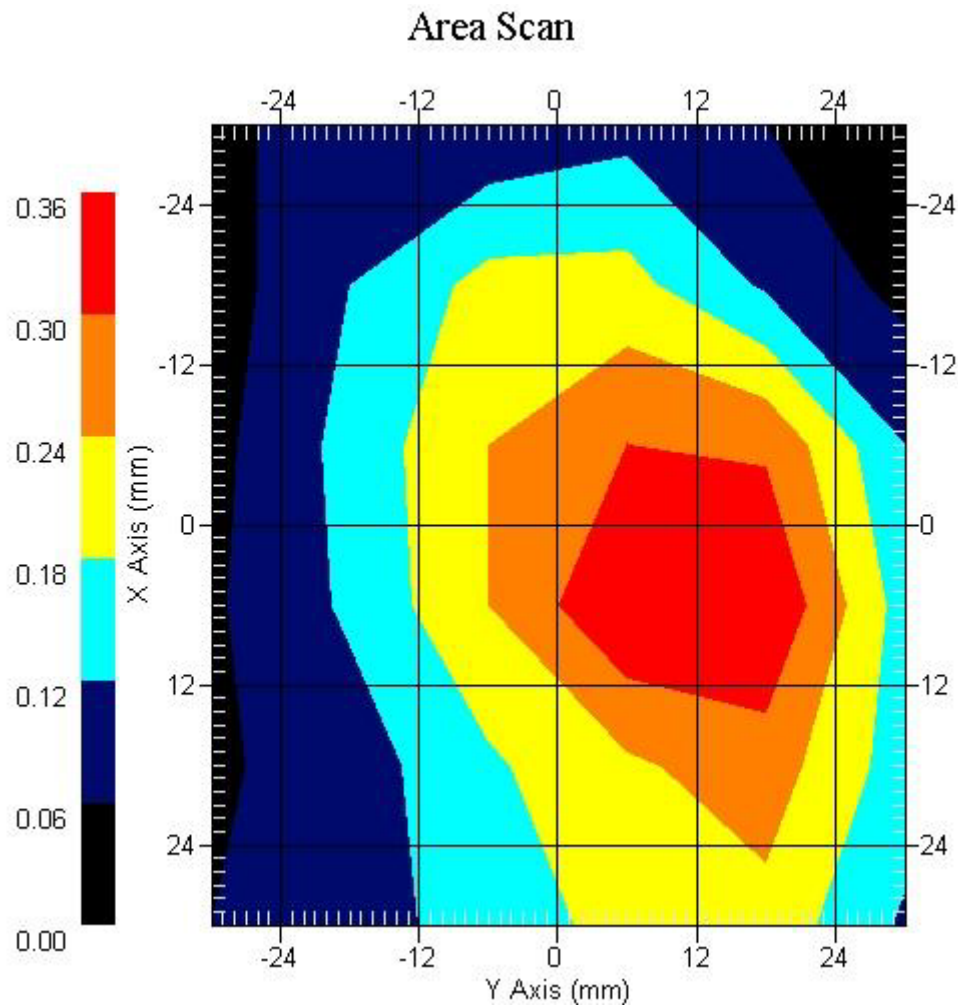
Crest Factor : 4
 Tissue Temp. : 20.20 °C
 Ambient Temp. : 21.10 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.226 W/kg
 Power Drift-Finish: 0.231 W/kg
 Power Drift (%) : 2.212

DUT Position : Touch
 Channel : 810



1 gram SAR value : 0.342 W/kg
 10 gram SAR value : 0.204 W/kg
 Area Scan Peak SAR : 0.360 W/kg
 Zoom Scan Peak SAR : 0.674 W/kg

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SAR measurement Data

ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report-802.11b

Report Date : 02-Jun-2008
Measurement Date : 02-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 2450.00 MHz
Drift Time : 0 min(s)
Length : 109.2 mm
Width : 51.2 mm
Depth : 14.9 mm

Phantom Data

Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Location : Center

Tissue Data

Type : BODY
Serial No. : 325-B
Frequency : 2450.00 MHz
Last Calib. Date : 02-Jun-2008
Temperature : 20.50 °C
Ambient Temp. : 21.30 °C
Humidity : 50.00 RH%
Epsilon : 52.41 F/m
Sigma : 1.79 S/m
Density : 1000.00 kg/cu. m

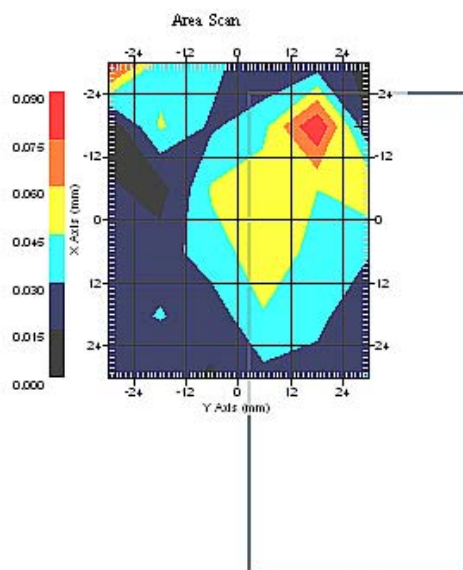
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 2450.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 5.2
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

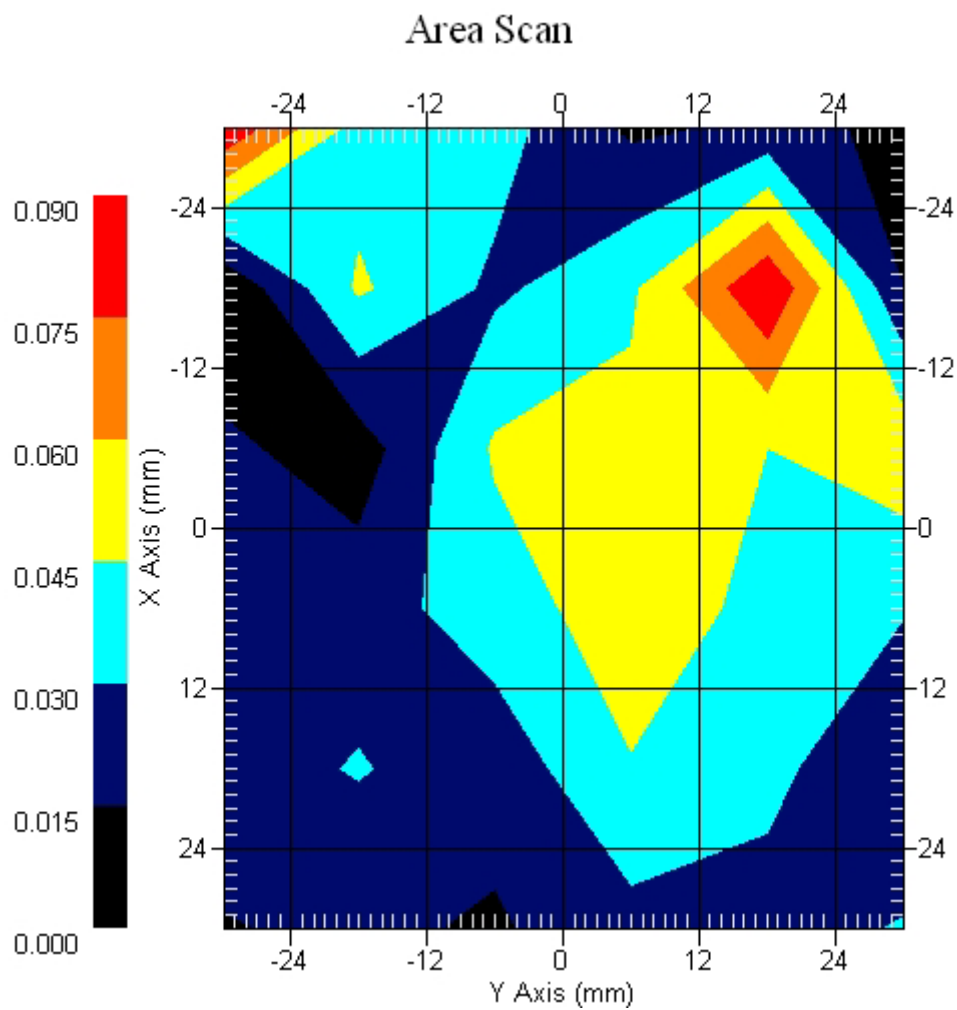
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.056 W/kg
 Power Drift-Finish: 0.056 W/kg
 Power Drift (%) : -0.783

DUT Position : Touch
 Channel : 1



1 gram SAR value : 0.082 W/kg
 10 gram SAR value : 0.039 W/kg
 Area Scan Peak SAR : 0.089 W/kg
 Zoom Scan Peak SAR : 0.158 W/kg

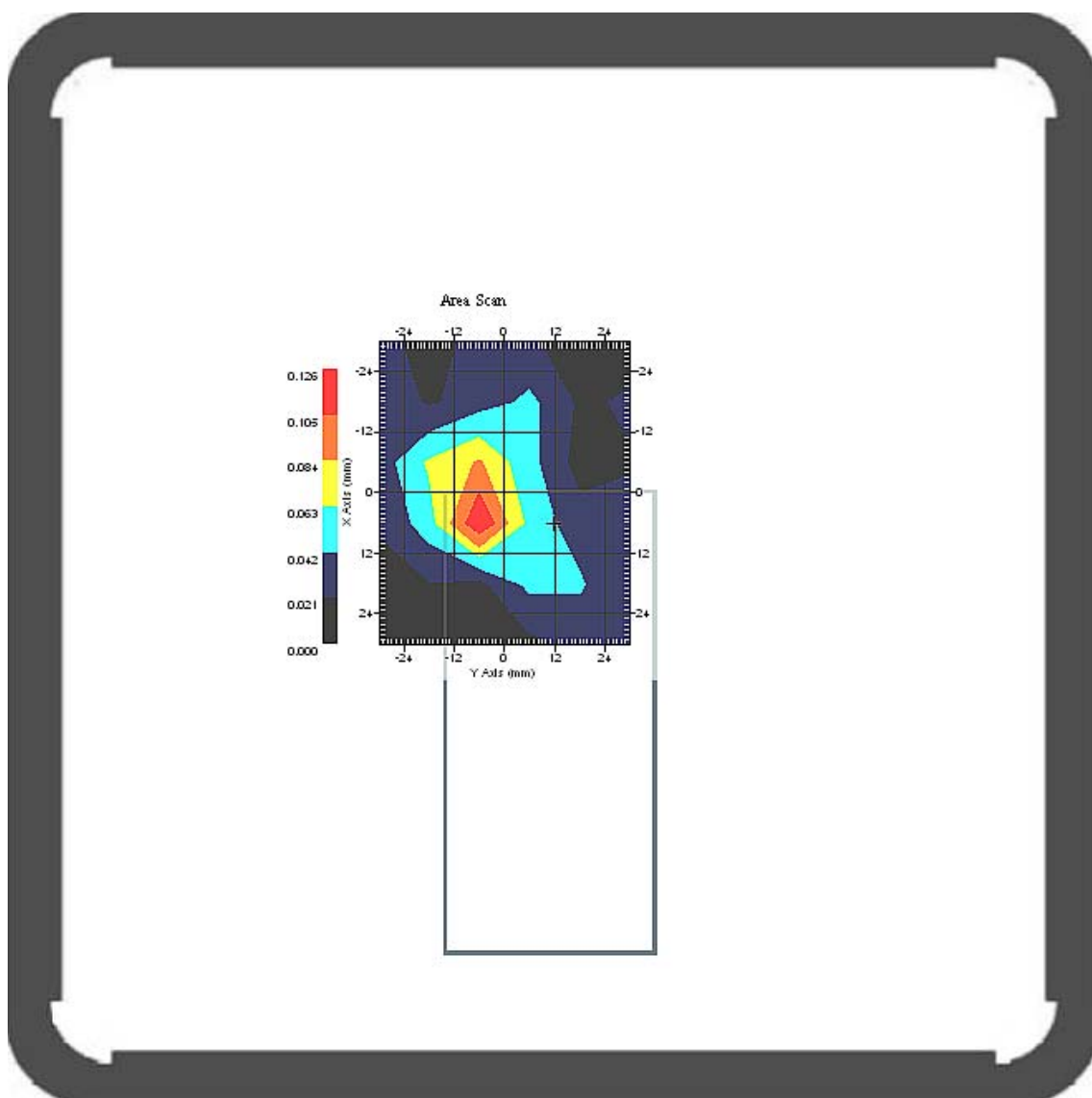
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Measurement Data

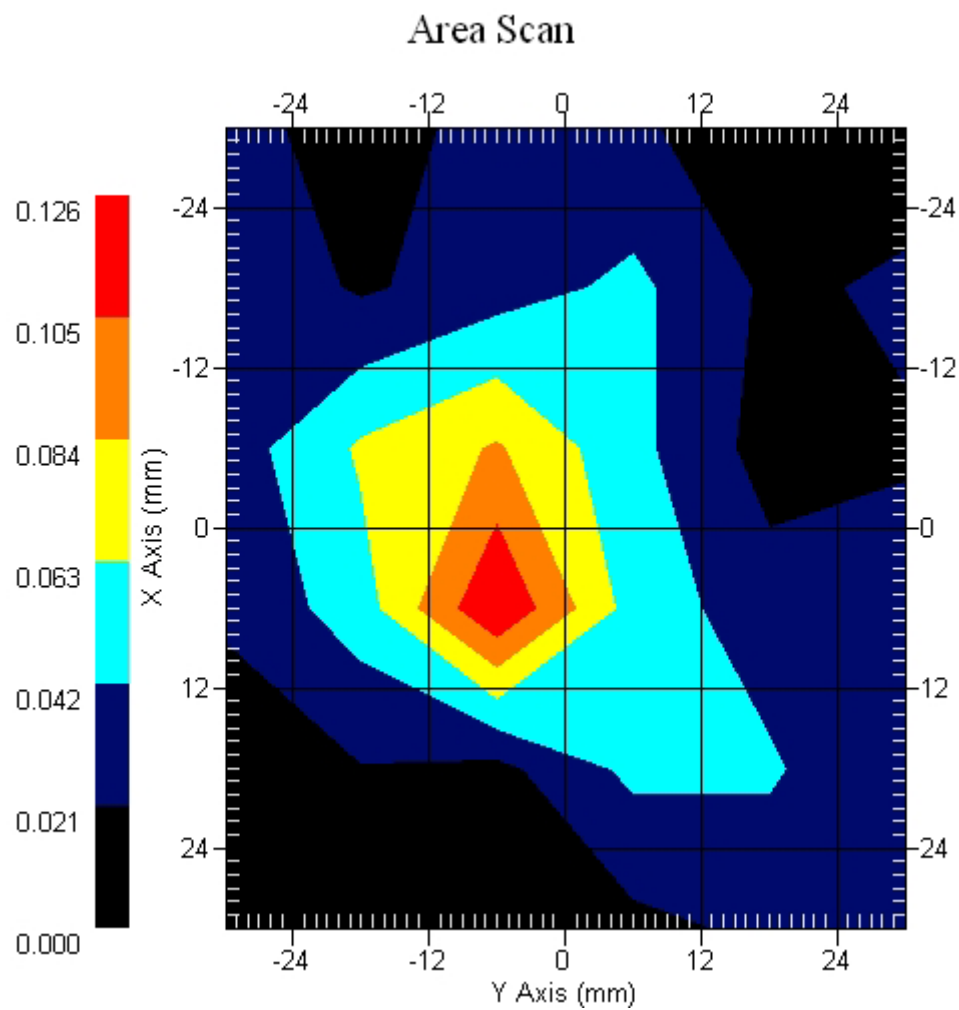
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.146 W/kg
 Power Drift-Finish: 0.151 W/kg
 Power Drift (%) : 3.424

DUT Position : Touch
 Channel : 6



1 gram SAR value : 0.104 W/kg
 10 gram SAR value : 0.051 W/kg
 Area Scan Peak SAR : 0.125 W/kg
 Zoom Scan Peak SAR : 0.290 W/kg

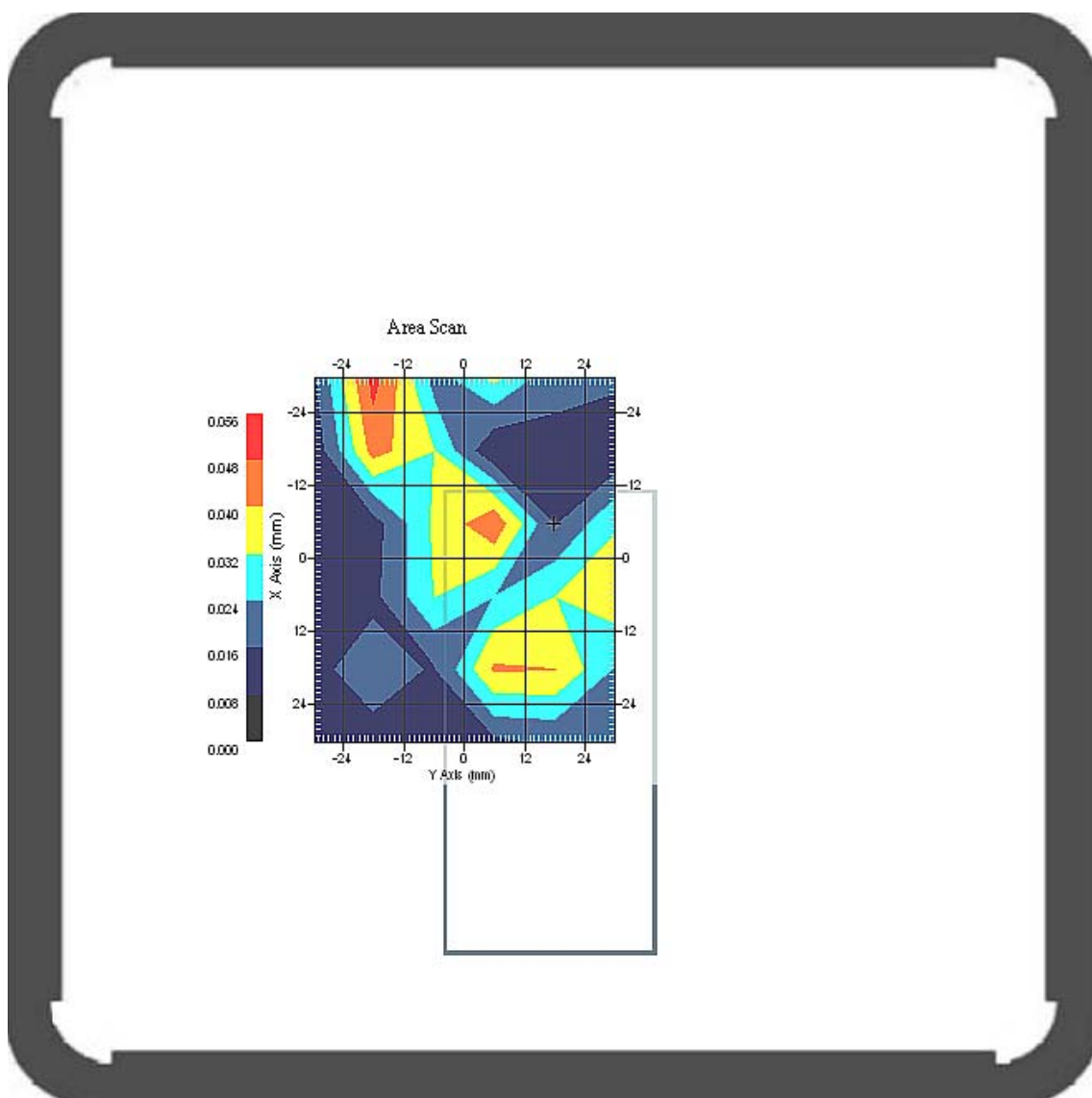
This is previous page plot (zoom in)



Measurement Data

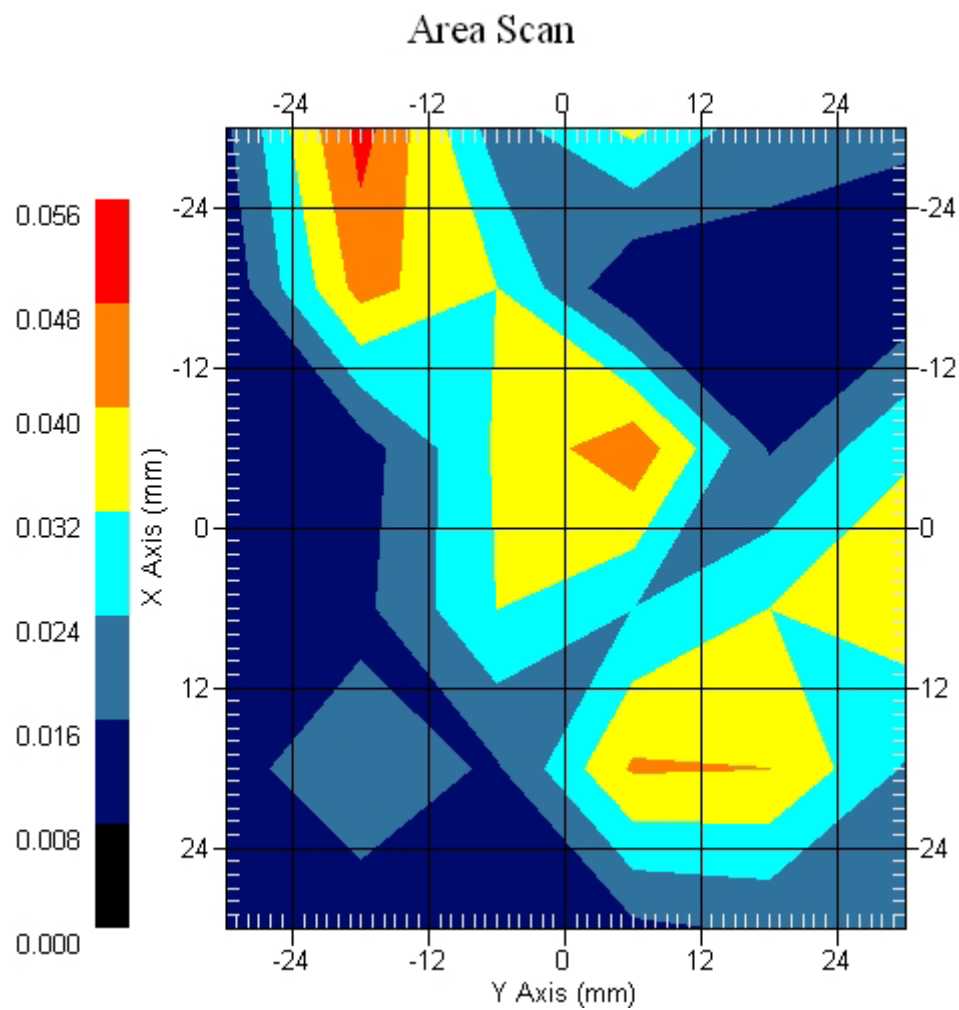
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.064 W/kg
 Power Drift-Finish: 0.062 W/kg
 Power Drift (%) : -3.125

DUT Position : Touch
 Channel : 11

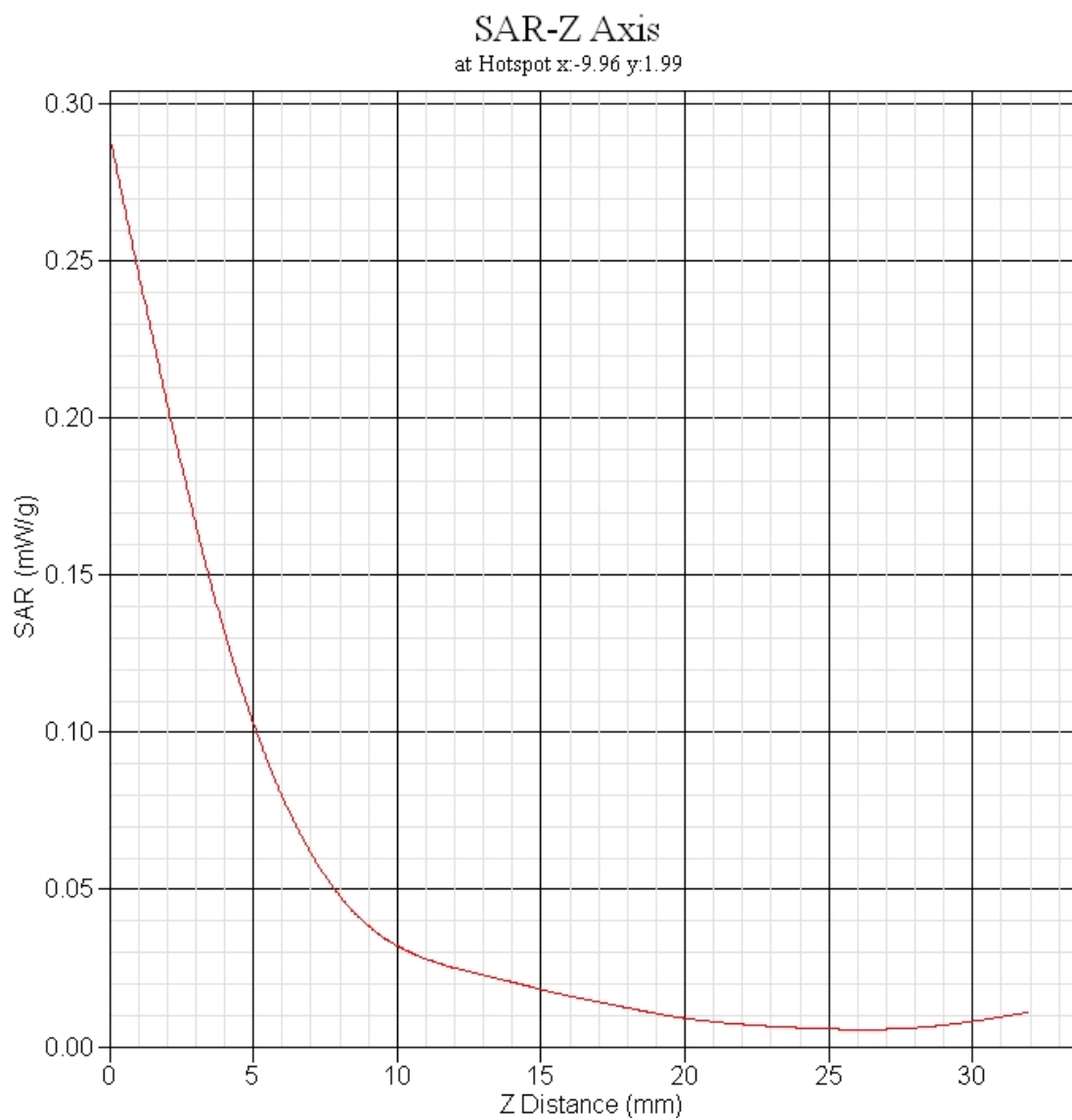


1 gram SAR value : 0.051 W/kg
 10 gram SAR value : 0.028 W/kg
 Area Scan Peak SAR : 0.051 W/kg
 Zoom Scan Peak SAR : 0.160 W/kg

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802.11b EUT Body-worn Z-Axis plot
Channel: 6



SAR measurement Data

ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report-802.11g

Report Date : 02-Jun-2008
Measurement Date : 02-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 2450.00 MHz
Drift Time : 0 min(s)
Length : 109.2 mm
Width : 51.2 mm
Depth : 14.9 mm

Phantom Data

Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Location : Center

Tissue Data

Type : BODY
Serial No. : 325-B
Frequency : 2450.00 MHz
Last Calib. Date : 02-Jun-2008
Temperature : 20.50 °C
Ambient Temp. : 21.30 °C
Humidity : 50.00 RH%
Epsilon : 52.41 F/m
Sigma : 1.79 S/m
Density : 1000.00 kg/cu. m

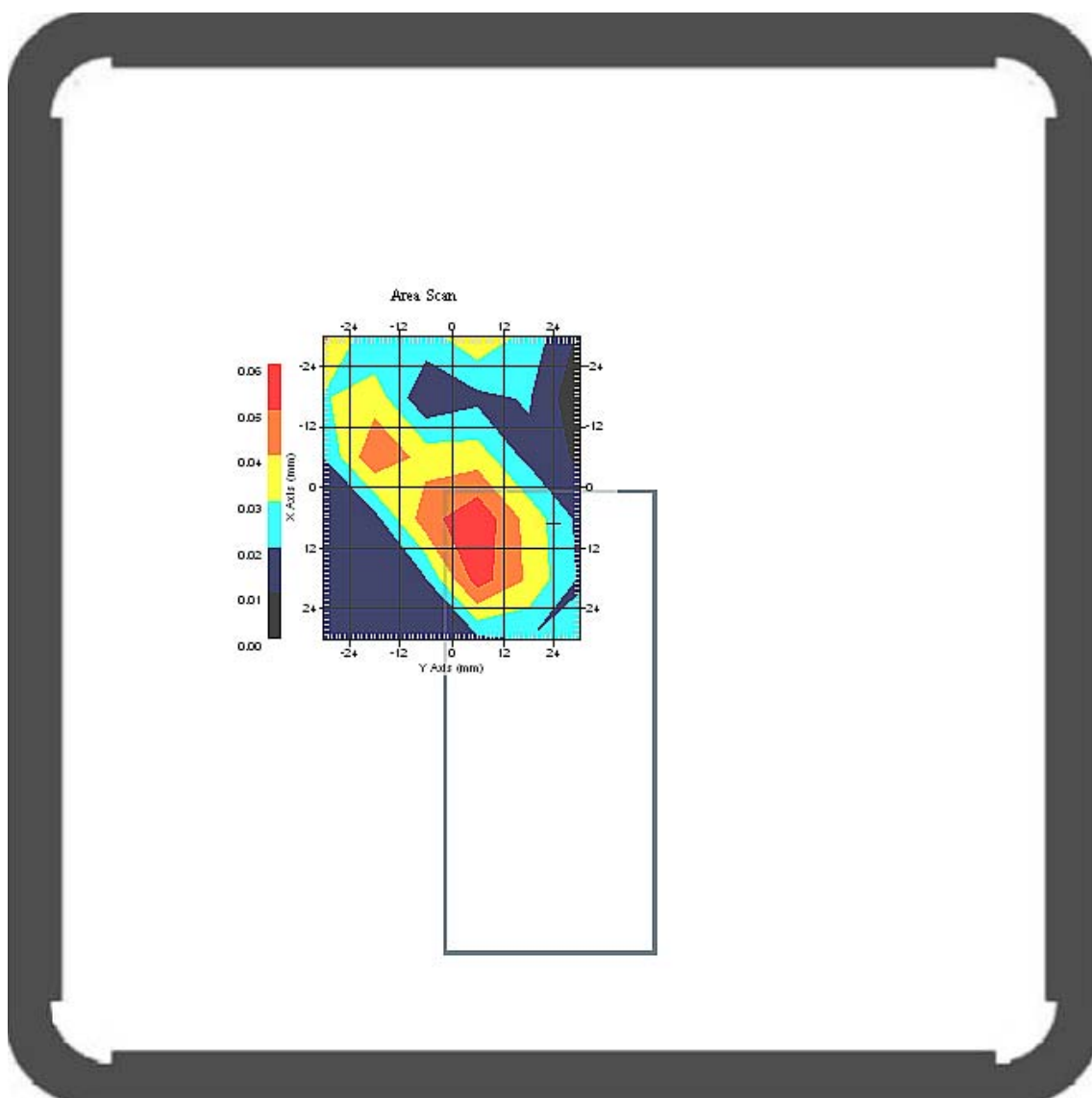
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 2450.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 5.2
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

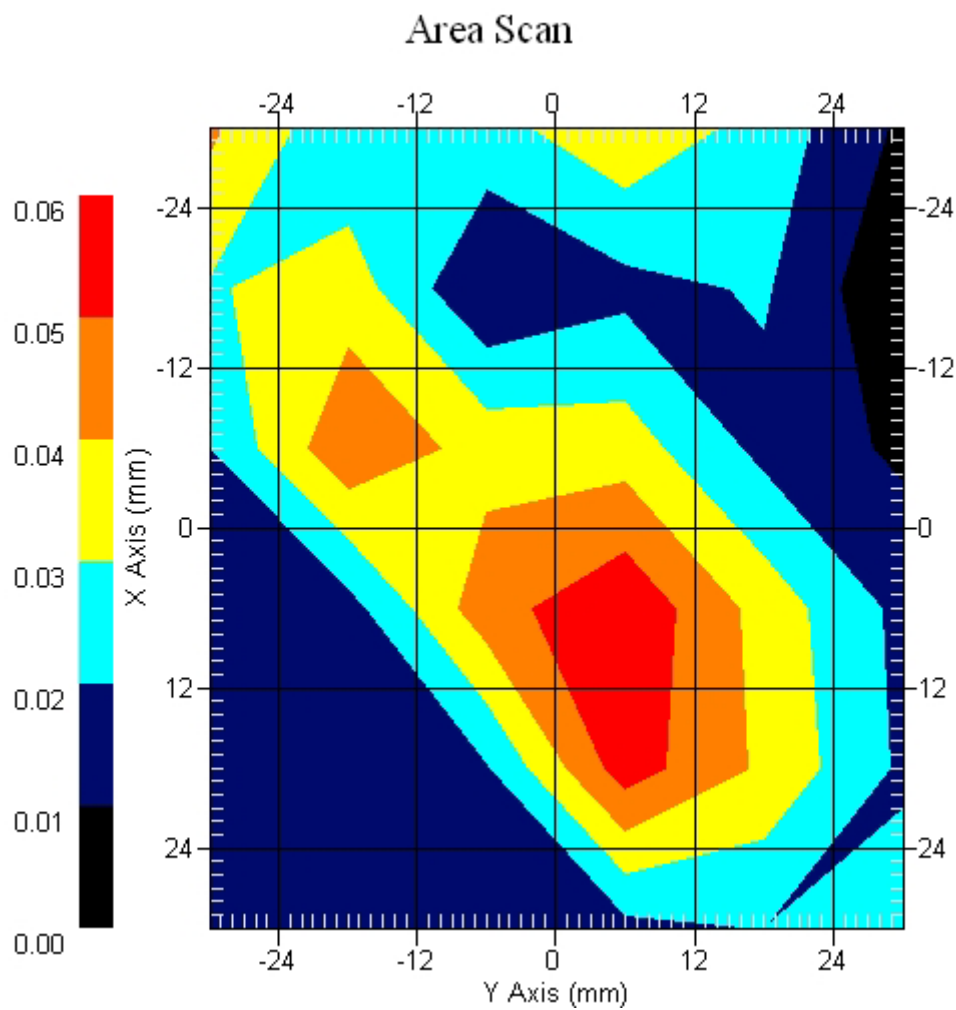
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.082 W/kg
 Power Drift-Finish: 0.080 W/kg
 Power Drift (%) : -2.439

DUT Position : Touch
 Channel : 1



1 gram SAR value : 0.070 W/kg
 10 gram SAR value : 0.027 W/kg
 Area Scan Peak SAR : 0.058 W/kg
 Zoom Scan Peak SAR : 0.260 W/kg

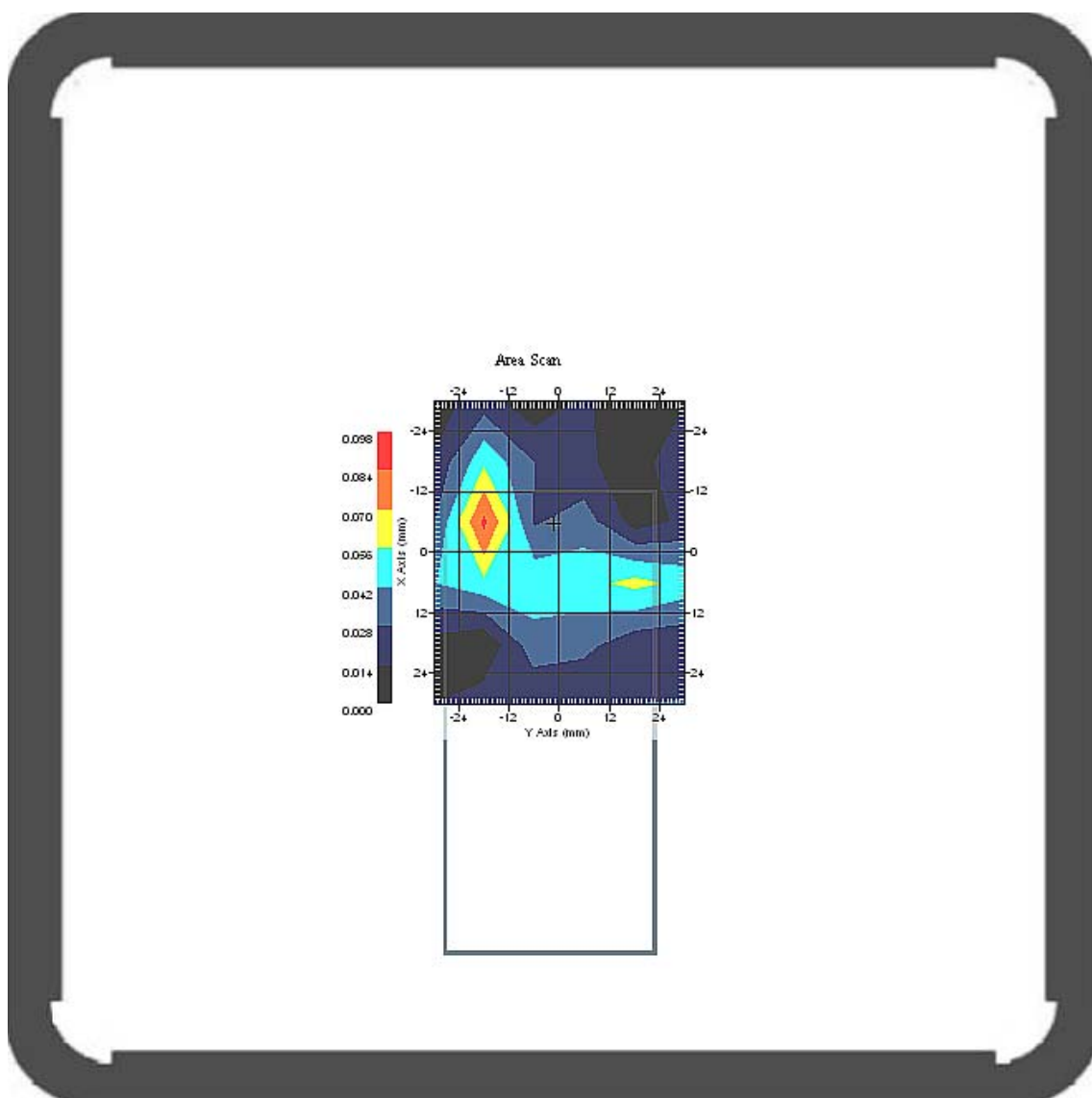
This is previous page plot (zoom in)



Measurement Data

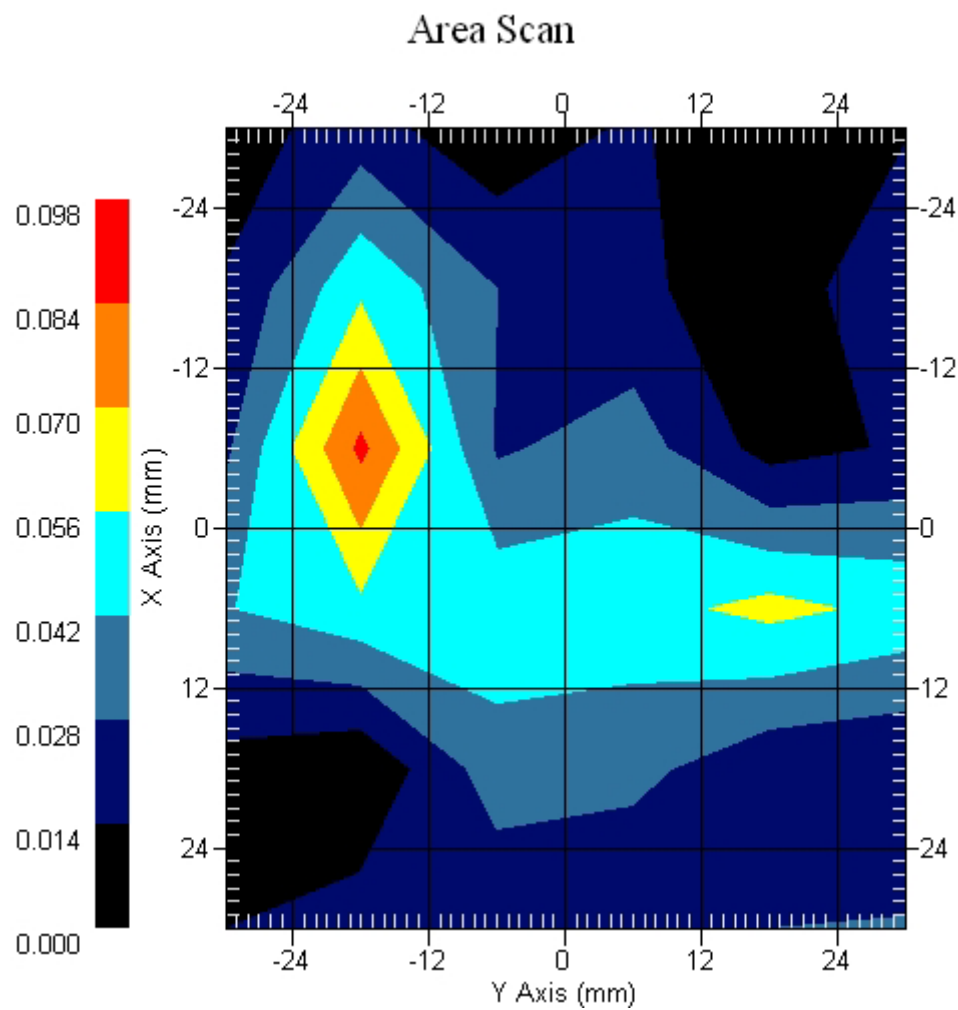
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.077 W/kg
 Power Drift-Finish: 0.076 W/kg
 Power Drift (%) : -1.298

DUT Position : Touch
 Channel : 6



1 gram SAR value : 0.048 W/kg
 10 gram SAR value : 0.036 W/kg
 Area Scan Peak SAR : 0.087 W/kg
 Zoom Scan Peak SAR : 0.230 W/kg

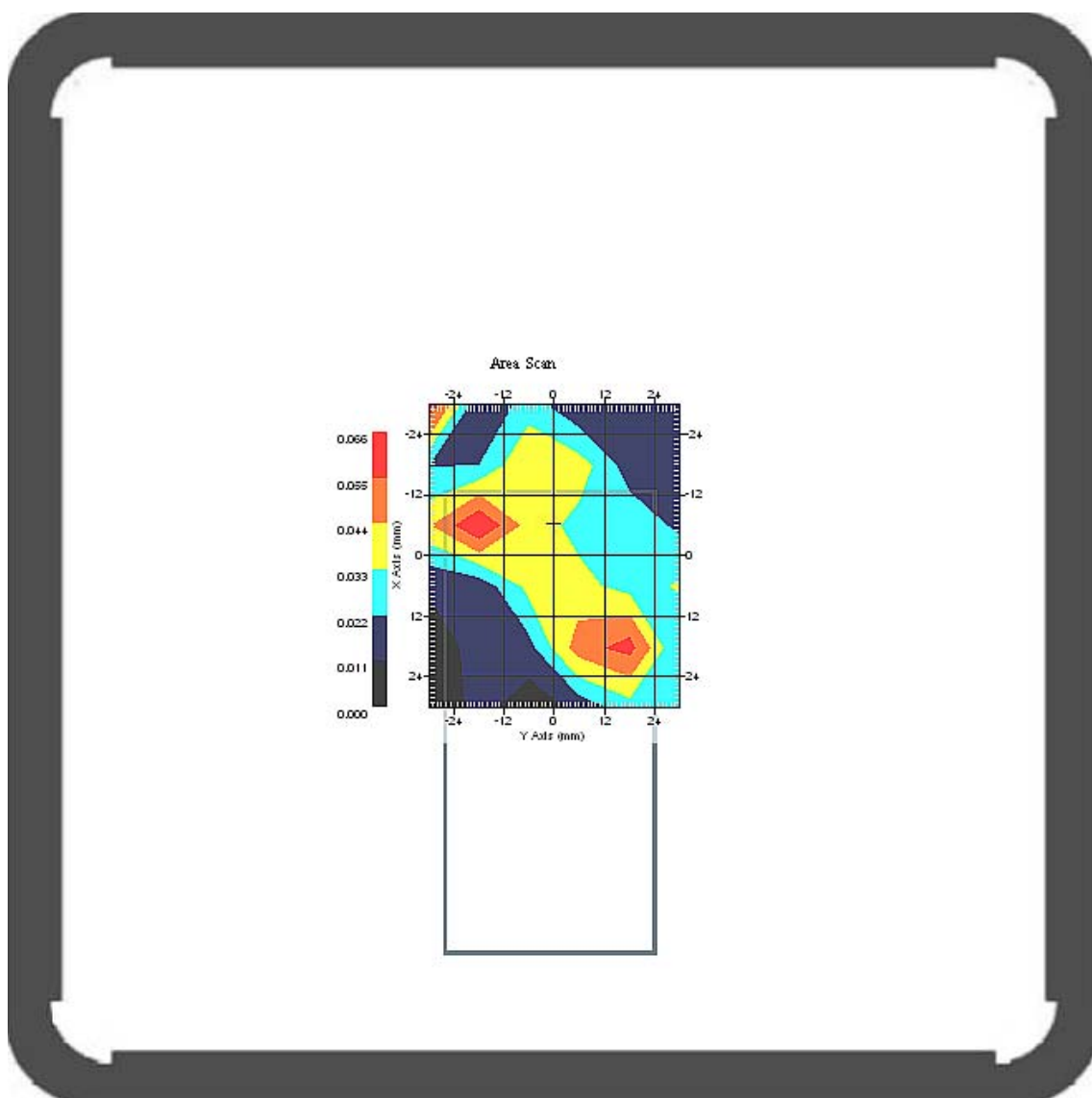
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Measurement Data

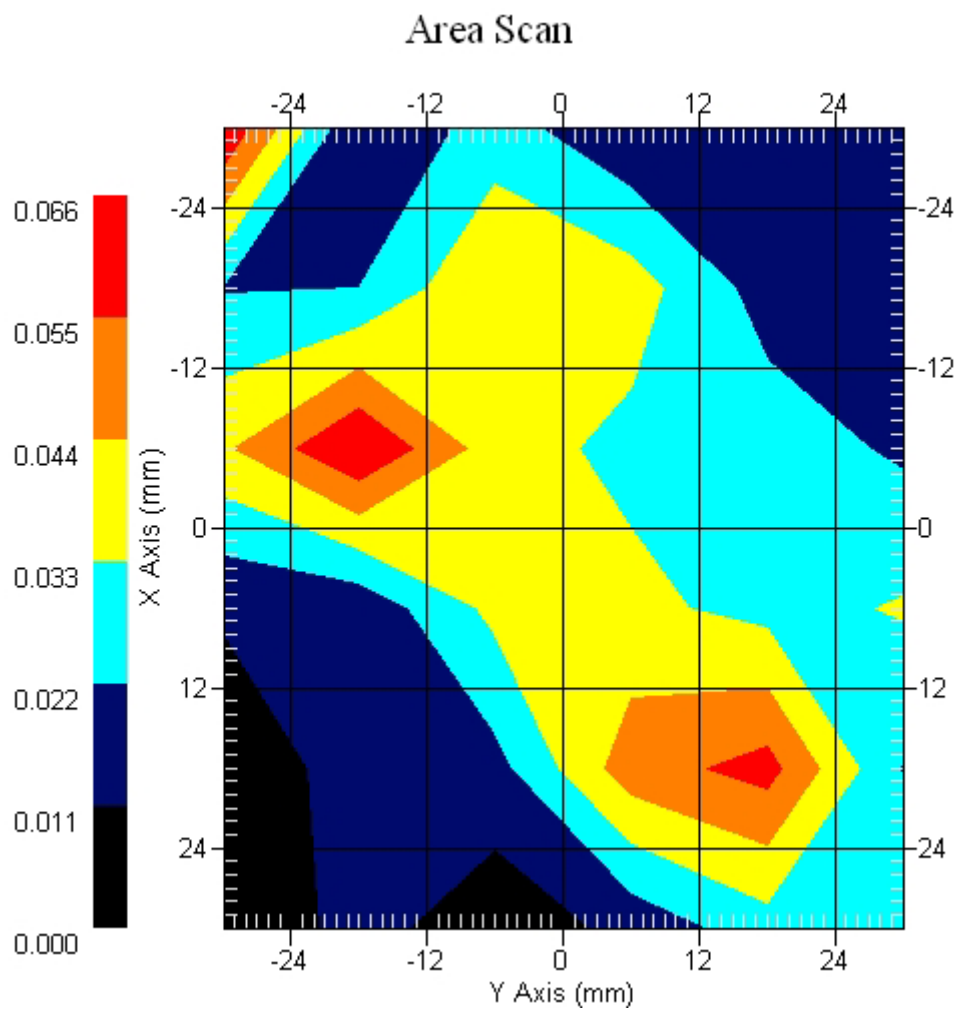
Crest Factor : 1
 Tissue Temp. : 20.50 °C
 Ambient Temp. : 21.30 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.073 W/kg
 Power Drift-Finish: 0.070 W/kg
 Power Drift (%) : -4.109

DUT Position : Touch
 Channel : 11

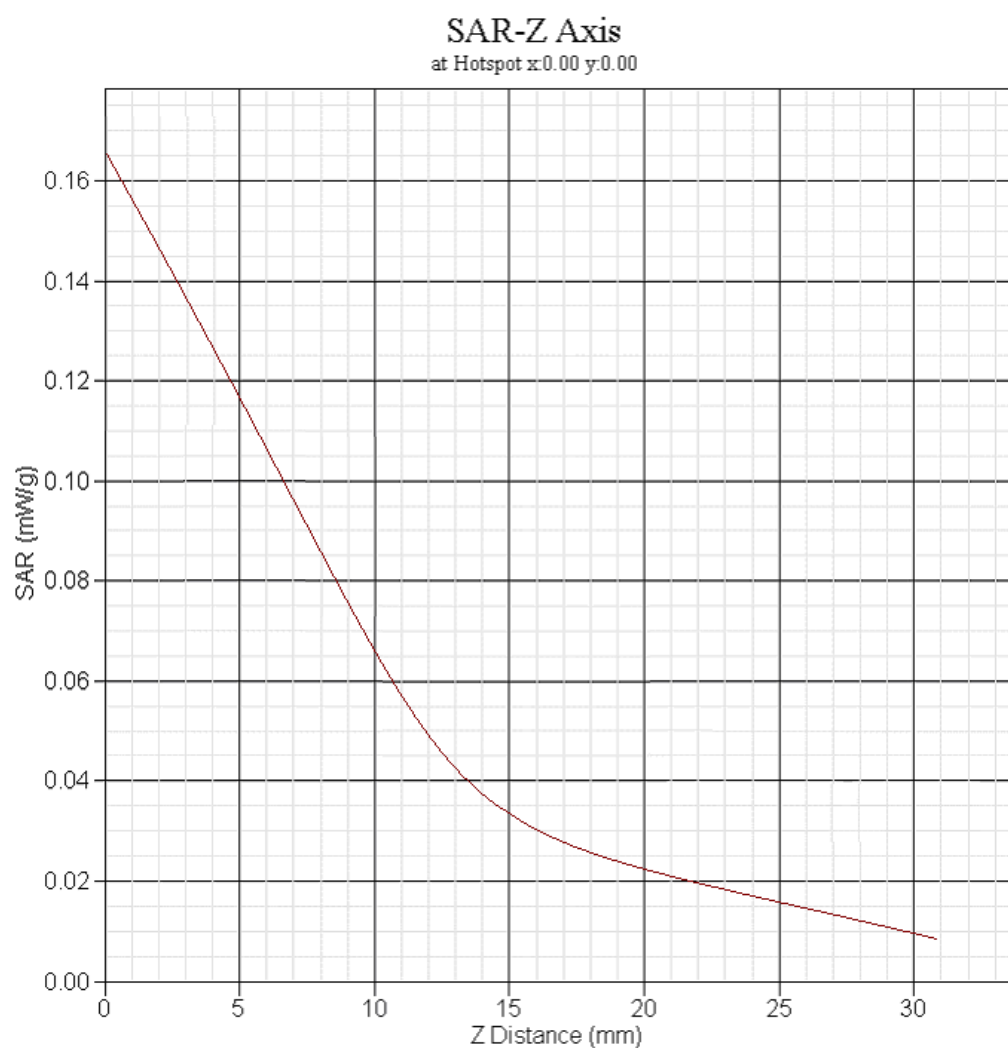


1 gram SAR value : 0.080 W/kg
 10 gram SAR value : 0.033 W/kg
 Area Scan Peak SAR : 0.066 W/kg
 Zoom Scan Peak SAR : 0.158 W/kg

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802.11g EUT Body-worn Z-Axis plot
Channel: 11



SAR measurement Data

ALSAS-10U VER 2.3.6 APREL Laboratories

SAR Test Report- GSM TX +WLAN TX

Report Date : 26-Jun-2008
Measurement Date : 26-Jun-2008

Product Data

Device Name : E-TEN
Type : Std Form Cell Phone
Model : X610
Frequency : 1900.00 MHz
Max. Transmit Pwr : 1 W
Drift Time : 0 min(s)
Length : 107.2 mm
Width : 51.2 mm
Depth : 14.9 mm
Antenna Type : Internal

Phantom Data

Type : SAM-Right
Size (mm) : 280 x 280 x 280
Location : Right

Tissue Data

Type : HEAD
Serial No. : 324-H
Frequency : 1900.00 MHz
Last Calib. Date : 26-Jun-2008
Temperature : 20.10 °C
Ambient Temp. : 20.90 °C
Humidity : 51.00 RH%
Epsilon : 39.24 F/m
Sigma : 1.43 S/m
Density : 1000.00 kg/cu. m

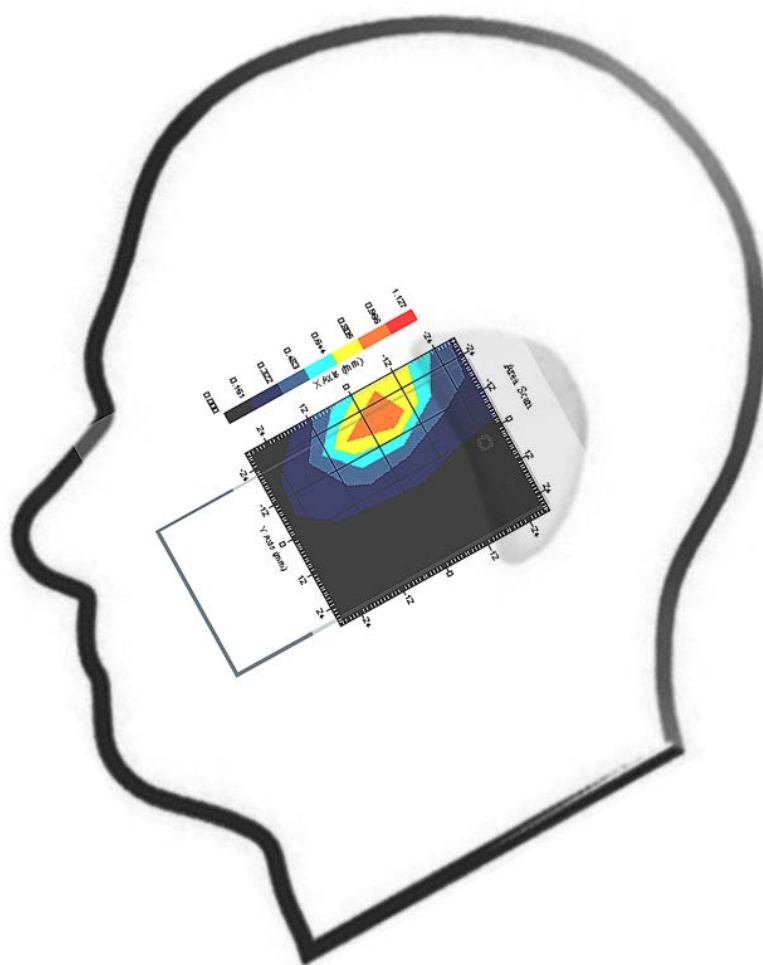
Probe Data

Name : Probe 264
Model : E020
Type : E-Field Triangle
Serial No. : 264
Last Calib. Date : 21-Aug-2007
Frequency : 1900.00 MHz
Duty Cycle Factor: 8
Conversion Factor: 5.5
Probe Sensitivity: 1.20 1.20 1.20 $\mu\text{V}/(\text{V}/\text{m})^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data

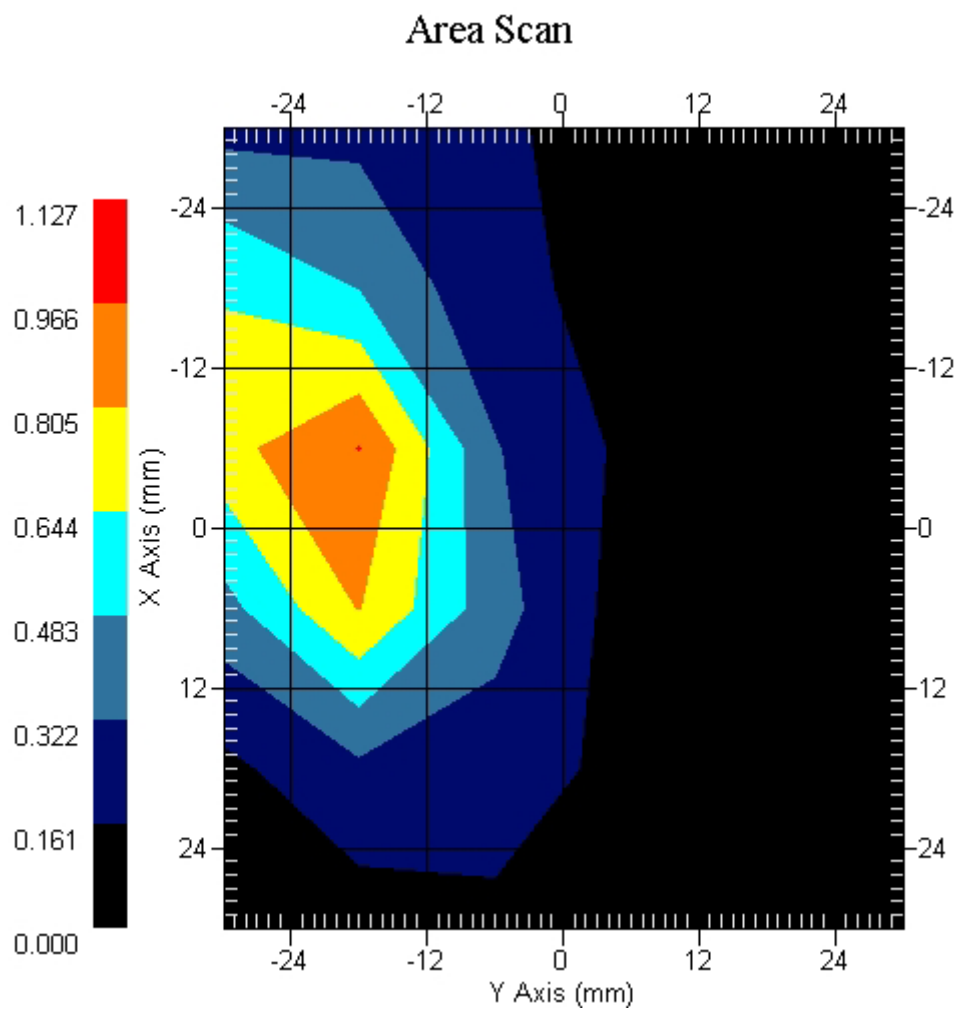
Crest Factor : 8
 Tissue Temp. : 20.10 °C
 Ambient Temp. : 20.90 °C
 Area Scan : 6x6x1 : Measurement x=12mm, y=12mm, z=4mm
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
 Power Drift-Start : 0.147 W/kg
 Power Drift-Finish: 0.145 W/kg
 Power Drift (%) : -1.360

DUT Position : Touch
 Channel : 512

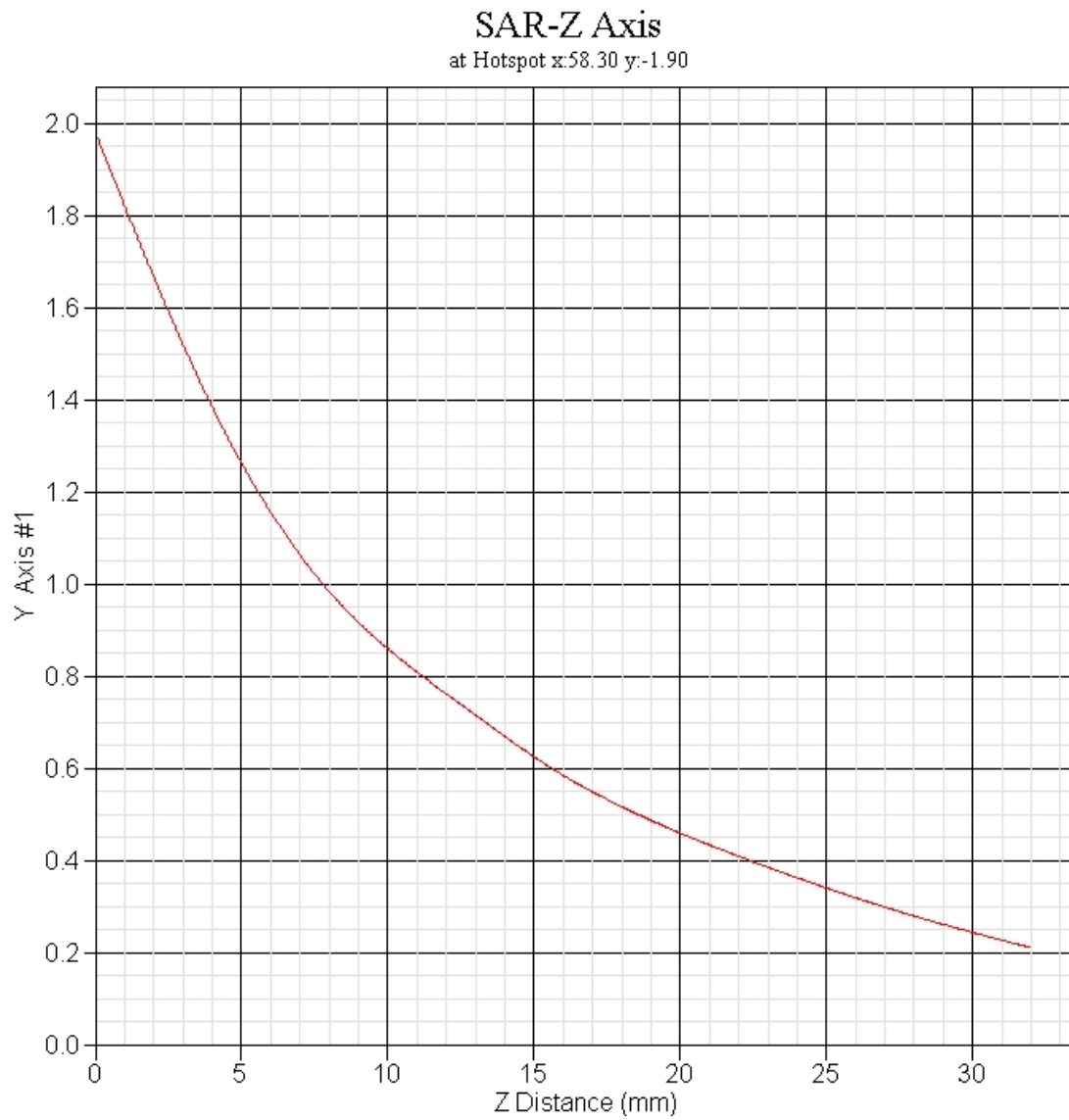


1 gram SAR value : 0.912 W/kg
 10 gram SAR value : 0.528 W/kg
 Area Scan Peak SAR : 1.219 W/kg
 Zoom Scan Peak SAR : 1.965 W/kg

This is previous page plot (zoom in)



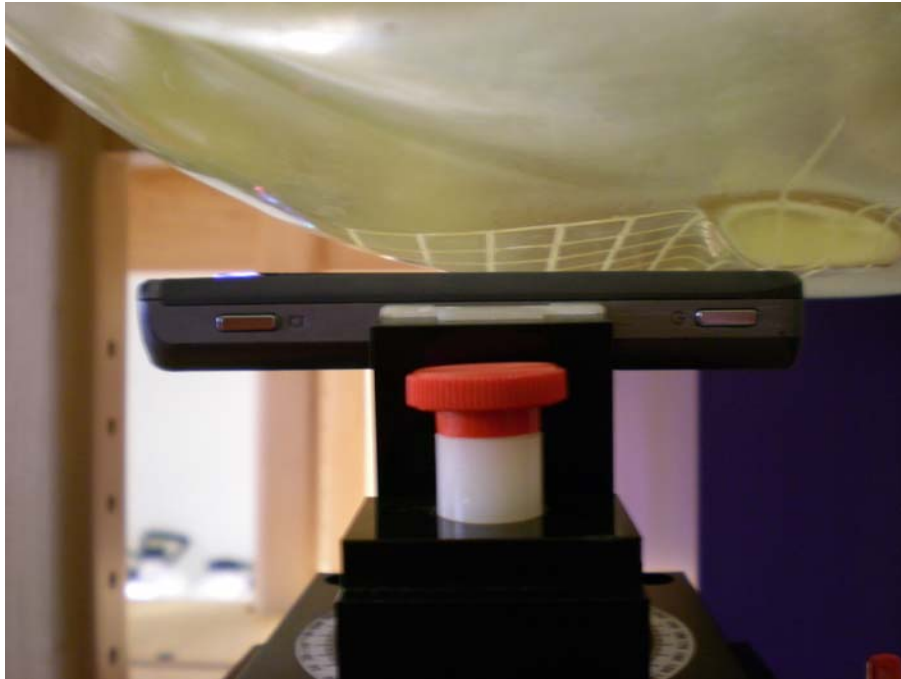
GSM TX +WLAN TX, Right-Cheek Z-Axis plot
Channel: 512



Appendix C. Test Setup Photographs & EUT Photographs

Test Setup Photographs

Right Head (EUT Cheek)



Left Head (EUT Cheek)

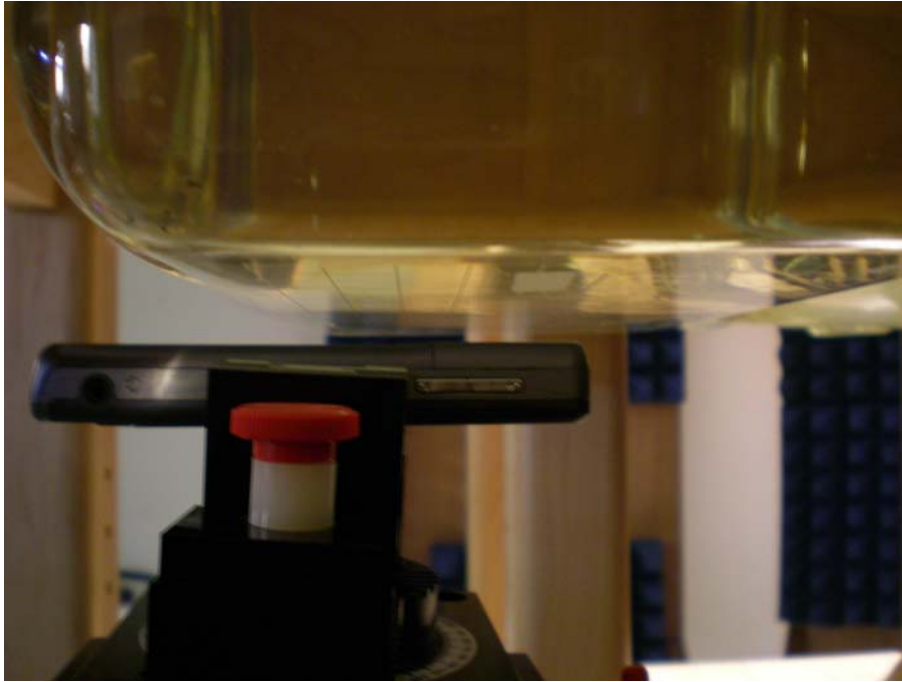


Right Head (EUT Tilted)



Left Head (EUT Tilted)



Body

Note: The positions used in the measurements were according to IEEE 1528-2003.

Test EUT Photographs



Appendix D. Probe Calibration

Miniature Isotropic RF Probe

M/N: ALS-E-020

S/N: 264

835MHz Head Calibration

835MHz Body Calibration

NCL CALIBRATION LABORATORIES

Calibration File No.: CP-821

Client: QUIETEK

CERTIFICATE OF CALIBRATION

It is certified that the equipment identified below has been calibrated in the
NCL CALIBRATION LABORATORIES by qualified personnel following recognized
procedures and using transfer standards traceable to NRC/NIST.

Equipment: Miniature Isotropic RF Probe 835 MHz

Manufacturer: APREL Laboratories

Model No.: ALS-E-020

Serial No.: 264

HEAD Calibration

Calibration Procedure: SSI/DRB-TP-D01-032-E020-V2

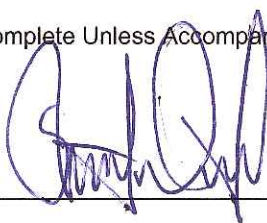
Project No: QTKB-E-Probe-5305

Calibrated: 20th August 2007

Released on: 4th September 2007

This Calibration Certificate is Incomplete Unless Accompanied with the Calibration Results Summary

Released By: _____



NCL CALIBRATION LABORATORIES

51 SPECTRUM WAY
NEPEAN, ONTARIO
CANADA K2R 1E6

Division of APREL Lab.
TEL: (613) 820-4988
FAX: (613) 820-4161

Introduction

This Calibration Report reproduces the results of the calibration performed in line with the SSI/DRB-TP-D01-032-E020-V2 E-Field Probe Calibration Procedure. The results contained within this report are for APREL E-Field Probe E-020 264.

References

SSI/DRB-TP-D01-032-E020-V2 E-Field Probe Calibration Procedure
IEEE 1528 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques"
SSI-TP-011 Tissue Calibration Procedure

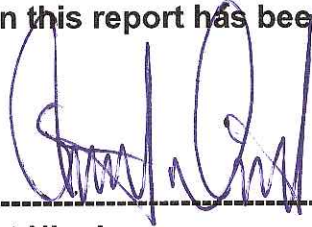
Conditions

Probe 264 was a new probe taken from stock prior to calibration.

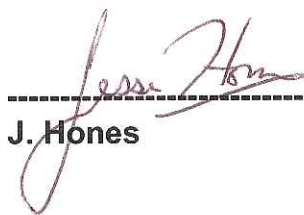
Ambient Temperature of the Laboratory: 22 °C +/- 0.5°C

Temperature of the Tissue: 21 °C +/- 0.5°C

We the undersigned attest that to the best of our knowledge the calibration of this probe has been accurately conducted and that all information contained within this report has been reviewed for accuracy.



Stuart Nicol



J. Hones

Calibration Results Summary

Probe Type:	E-Field Probe E-020
Serial Number:	264
Frequency:	835 MHz
Sensor Offset:	1.56 mm
Sensor Length:	2.5 mm
Tip Enclosure:	Ertalyte*
Tip Diameter:	<5 mm
Tip Length:	60 mm
Total Length:	290 mm

*Resistive to recommended tissue recipes per IEEE-1528

Sensitivity in Air

Channel X:	$1.2 \mu\text{V}/(\text{V}/\text{m})^2$
Channel Y:	$1.2 \mu\text{V}/(\text{V}/\text{m})^2$
Channel Z:	$1.2 \mu\text{V}/(\text{V}/\text{m})^2$
Diode Compression Point:	95 mV

Sensitivity in Head Tissue

Frequency: 835 MHz

Epsilon: 41.5 (+/-5%) **Sigma:** 0.90 S/m (+/-5%)

ConvF

Channel X: 6.3

Channel Y: 6.3

Channel Z: 6.3

Tissue sensitivity values were calculated using the load impedance of the APREL Laboratories Daq-Paq.

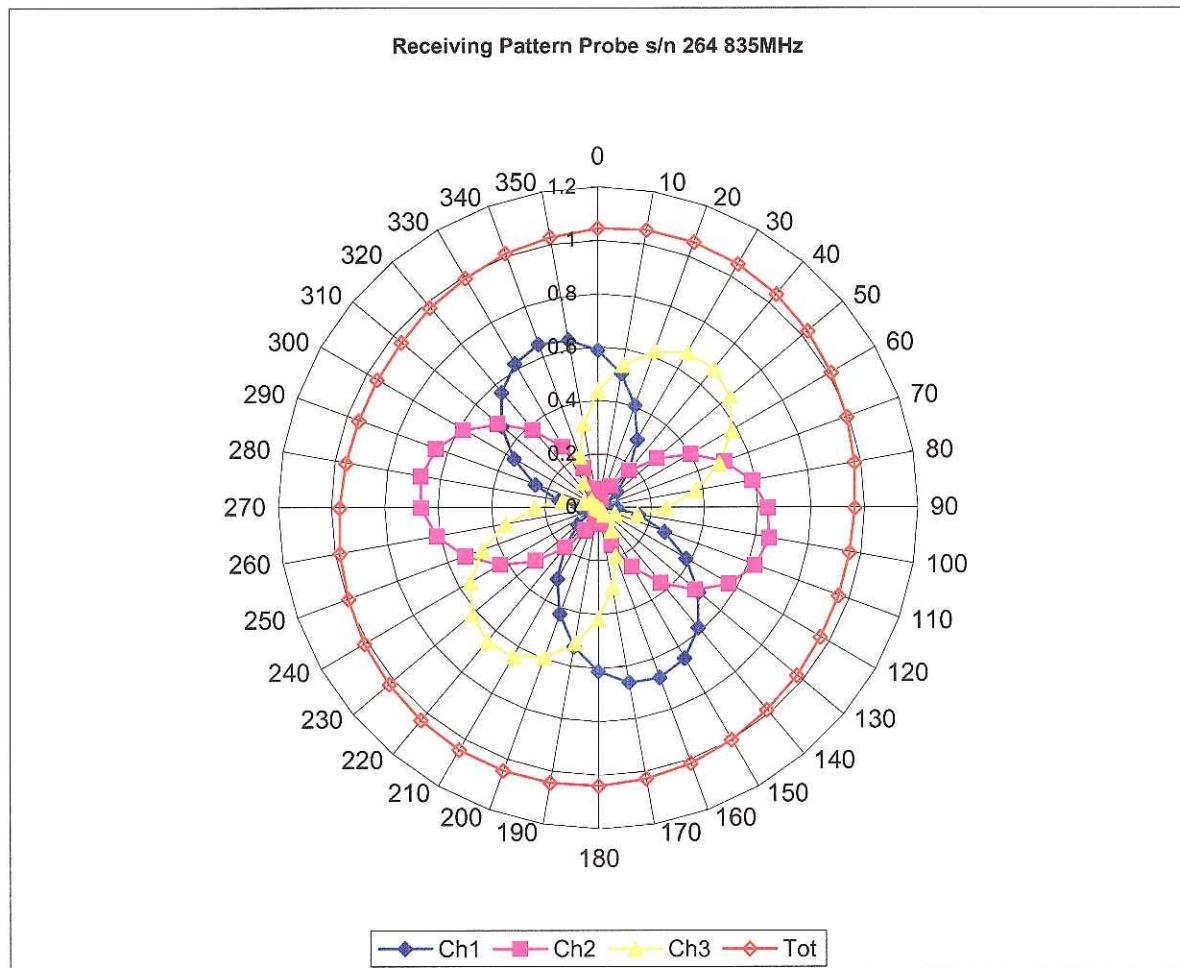
Boundary Effect:

Uncertainty resulting from the boundary effect is less than 2% for the distance between the tip of the probe and the tissue boundary, when less than 2.44mm.

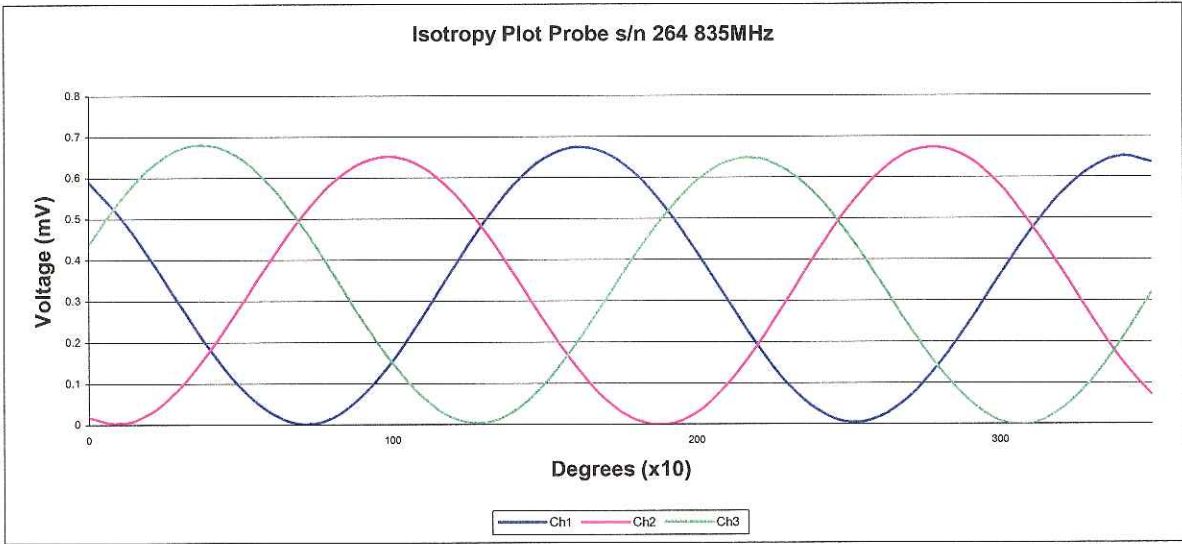
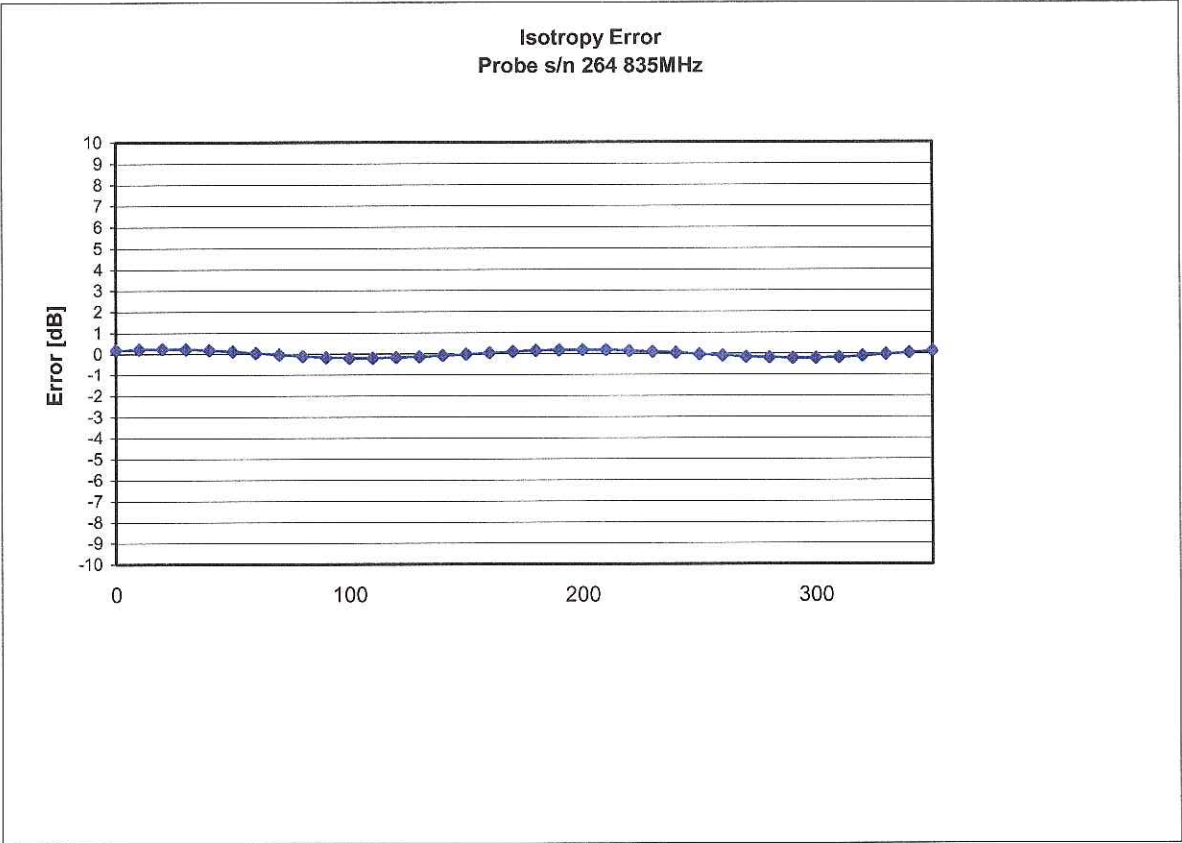
Spatial Resolution:

The measured probe tip diameter is 5 mm (+/- 0.01 mm) and therefore meets the requirements of SSI/DRB-TP-D01-032 for spatial resolution.

Receiving Pattern 835 MHz (Air)



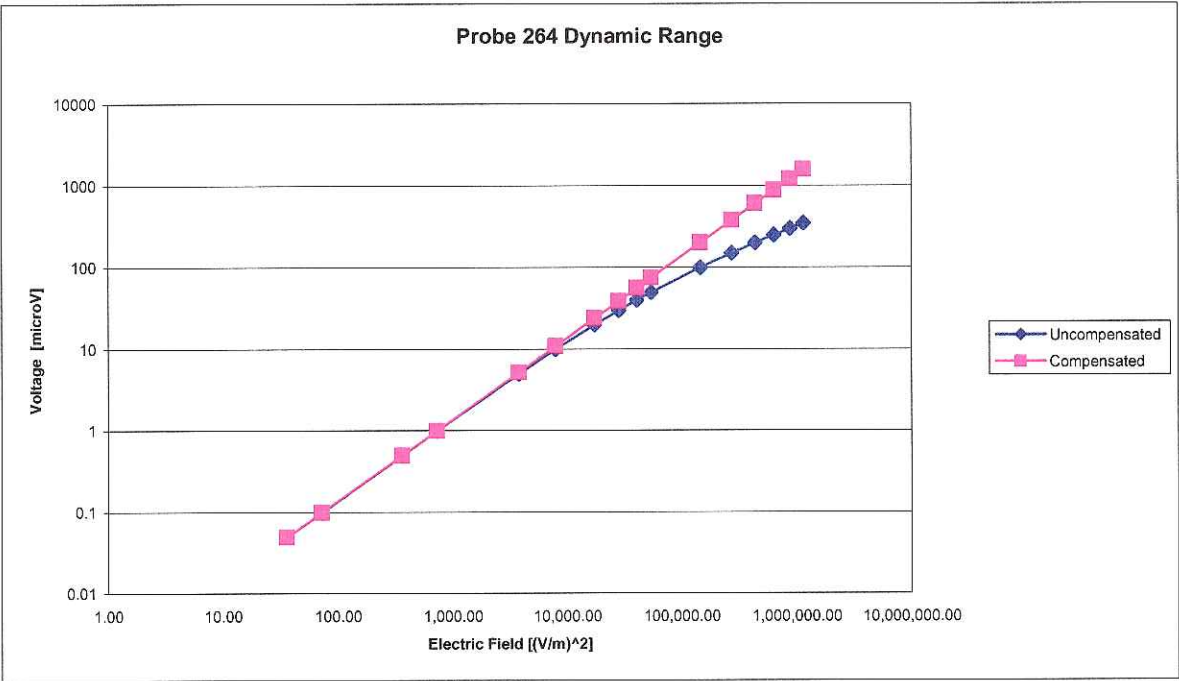
Isotropy Error 835 MHz (Air)



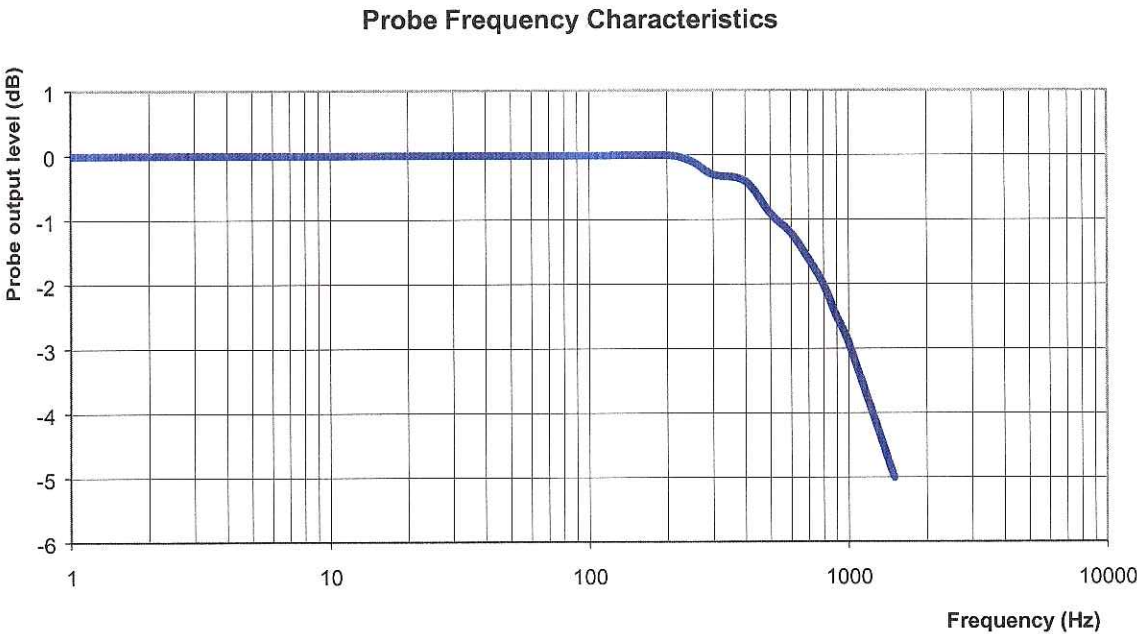
Isotropy Tissue:

0.10 dB

Dynamic Range



Video Bandwidth



Video Bandwidth at 500 Hz	1 dB
Video Bandwidth at 1000 Hz	3 dB

Conversion Factor Uncertainty Assessment

Frequency: 835MHz

Epsilon: 41.5 (+/-5%)

Sigma: 0.90 S/m (+/-5%)

ConvF

Channel X: 6.3 7%(K=2)

Channel Y: 6.3 7%(K=2)

Channel Z: 6.3 7%(K=2)

To minimize the uncertainty calculation all tissue sensitivity values were calculated using a load impedance of 5 M Ω .

Boundary Effect:

For a distance of 2.4mm the evaluated uncertainty (increase in the probe sensitivity) is less than 2%.

Test Equipment

The test equipment used during Probe Calibration, manufacturer, model number and, current calibration status are listed and located on the main APREL server R:\NCL\Calibration Equipment\Instrument List May 2007.