

Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **WiMAX MODE**

<b>Power</b>	22.6 - 241.1 dBm Average
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	2501-22685MHz
<b>Duty Cycle</b>	See Below
<b>Epsilon</b>	51.54
<b>Sigma</b>	2.24
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	June 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Duty Factor %	Frequency MHz	Waveform	1g SAR W/kg	1g Corrected
WiMAX	0	0	23.3	2501	DQ4_12_UQ16_12_10M	0.108	0.138
WiMAX	0	386	23.3	2593	DQ4_12_UQ16_12_10M	0.076	0.097
WiMAX	0	736	23.3	2685	DQ4_12_UQ16_12_10M	0.079	0.101

Mode	Separation Distance (mm)	Channel	Duty Factor %	Frequency MHz	Waveform	1g SAR W/kg	1g Corrected
WiMAX	0	0	42	2501	DQ64_UQ4_12_21S_10M	0.071	0.052
WiMAX	0	386	42	2593	DQ64_UQ4_12_21S_10M	0.053	0.038
WiMAX	0	736	42	2685	DQ64_UQ4_12_21S_10M	0.047	0.034

Mode	Separation Distance (mm)	Channel	Duty Factor %	Frequency MHz	Waveform	1g SAR W/kg	1g Corrected
WiMAX	0	0	36.7	2498.5	DQ4_12_UQ16_34_5M	0.028	0.024
WiMAX	0	378	36.7	2593	DQ4_12_UQ16_34_5M	0.013	0.011
WiMAX	0	736	36.7	2685	DQ4_12_UQ16_34_5M	0.022	0.019

Mode	Separation Distance (mm)	Channel	Duty Factor %	Frequency MHz	Waveform	1g SAR W/kg	1g Corrected
WiMAX	0	0	36.7	2498.5	DQ64_56_UQ4_12_5M	0.079	0.069
WiMAX	0	378	36.7	2593	DQ64_56_UQ4_12_5M	0.053	0.046
WiMAX	0	736	36.7	2685	DQ64_56_UQ4_12_5M	0.069	0.061

SAR Limit	Conservative Measured SAR
1.6 W/kg 1gram Average Maximum 10MHz	0.138 W/kg 1gram Average
1.6 W/kg 1gram Average Maximum 5MHz	0.069 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11a Low Band MODE**

<b>Power</b>	16.45dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5180-5320MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	48.53
<b>Sigma</b>	5.27
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	May 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
<b>802.11a</b>	<b>0</b>	<b>36</b>	<b>5180</b>	<b>0.438</b>
802.11a	0	52	5260	0.332
802.11a	0	64	5320	0.412

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.438 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11n Low Band MODE**

<b>Power</b>	16.54dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5180-5320MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	48.53
<b>Sigma</b>	5.27
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	May 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
802.11n 20MHz	0	36	5180	0.357
<b>802.11n 40MHz</b>	<b>0</b>	<b>38</b>	<b>5190</b>	<b>0.498</b>

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.498 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11a Mid Band MODE**

<b>Power</b>	16.45dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5500-5700MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	47.49
<b>Sigma</b>	5.87
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	May 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
802.11a	0	100	5500	0.376
<b>802.11a</b>	<b>0</b>	<b>120</b>	<b>5600</b>	<b>0.453</b>
802.11a	0	140	5700	0.421

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.453 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11n Mid Band MODE**

<b>Power</b>	16.54dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5500-5700MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	46.75
<b>Sigma</b>	5.84
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	May 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
802.11n 20MHz	0	120	5600	0.473
802.11n 40MHz	0	190	5590	0.465

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.502 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11a High Band MODE**

<b>Power</b>	16.45dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5745-5825MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	47.2
<b>Sigma</b>	6.25
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	May 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
<b>802.11a</b>	<b>0</b>	<b>149</b>	<b>5745</b>	<b>0.339</b>
802.11a	0	157	5785	0.312
802.11a	0	165	5825	0.304

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.339 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



Intel® WiFi-Link 5150 Series Network Connection with Tyco Antennas **802.11n Mid Band MODE**

<b>Power</b>	16.54dBm
<b>DUT Position</b>	Underside
<b>Separation</b>	0mm
<b>Antenna Type</b>	IFA
<b>Antenna Manufacturer</b>	Tyco
<b>Antenna Location</b>	Left Hand Side
<b>Power Mode</b>	Battery
<b>Tx Frequency</b>	5500-5700MHz
<b>Duty Cycle</b>	100%
<b>Epsilon</b>	47.2
<b>Sigma</b>	6.25
<b>Tissue Depth</b>	15cm
<b>Phantom Type</b>	Universal
<b>DUT Workstation Location</b>	Centre
<b>Device Positioner</b>	Not Needed
<b>Test Date</b>	June 2009
<b>Test Engineer</b>	Maryna. N

Mode	Separation Distance (mm)	Channel	Frequency MHz	1g SAR W/kg
802.11n 20MHz	0	149	5745	0.306
802.11n 40MHz	0	151	5755	0.281

<b>SAR Limit</b>	<b>Conservative Measured SAR</b>
1.6 W/kg 1gram Average Maximum	0.306 W/kg 1gram Average

**SAR Plot for Conservative SAR Included in Appendix A.**



## 6.6 Additional Information

The Intel® WiFi-Link 5150 Series Network Connection card located inside a Dell laptop computer was tested at other locations to ensure a conservative SAR was assessed.

(see setup pictures)







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## Appendix A SAR Plots



## SAR Test Report

Report Date : 30-Apr-2009  
 By Operator : 123  
 Measurement Date : 30-Apr-2009  
 Starting Time : 30-Apr-2009 03:38:20 PM  
 End Time : 30-Apr-2009 03:49:35 PM  
 Scanning Time : 675 secs

Product Data  
 Device Name : Tiger-Tyco-back  
 Serial No. : 220-00754CN0J390M1296193C002  
 Type : Other  
 Model : TIR-E3-C2  
 Frequency : 2450.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 85 mm  
 Width : 35 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.129 W/kg  
 Power Drift-Finish: 0.117 W/kg  
 Power Drift (%) : -9.366  
 Picture : C:\alsas\bitmap\Device-25.bmp

Phantom Data  
 Name : APREL-Uni  
 Type : Uni-Phantom  
 Size (mm) : 280 x 280 x 200  
 Serial No. : User Define  
 Location : Center  
 Description : U

Tissue Data  
 Type : BODY  
 Serial No. : 2450\_B  
 Frequency : 2450.00 MHz  
 Last Calib. Date : 20-Apr-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 40.00 RH%  
 Epsilon : 50.60 F/m  
 Sigma : 1.93 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 2450.00 MHz  
 Duty Cycle Factor: 1  
 Conversion Factor: 4.75  
 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

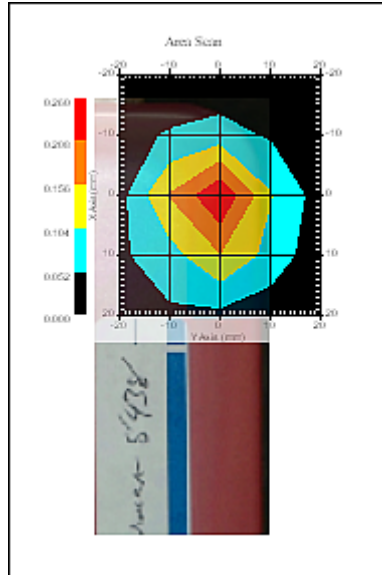
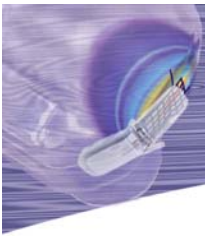
## Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 21.00 °C  
 Ambient Temp. : 23.00 °C  
 Set-up Date : 30-Apr-2009  
 Set-up Time : 3:37:14 PM  
 Area Scan : 5x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Mid





1 gram SAR value : 0.202 W/kg  
 Zoom Scan Peak SAR : 0.570 W/kg





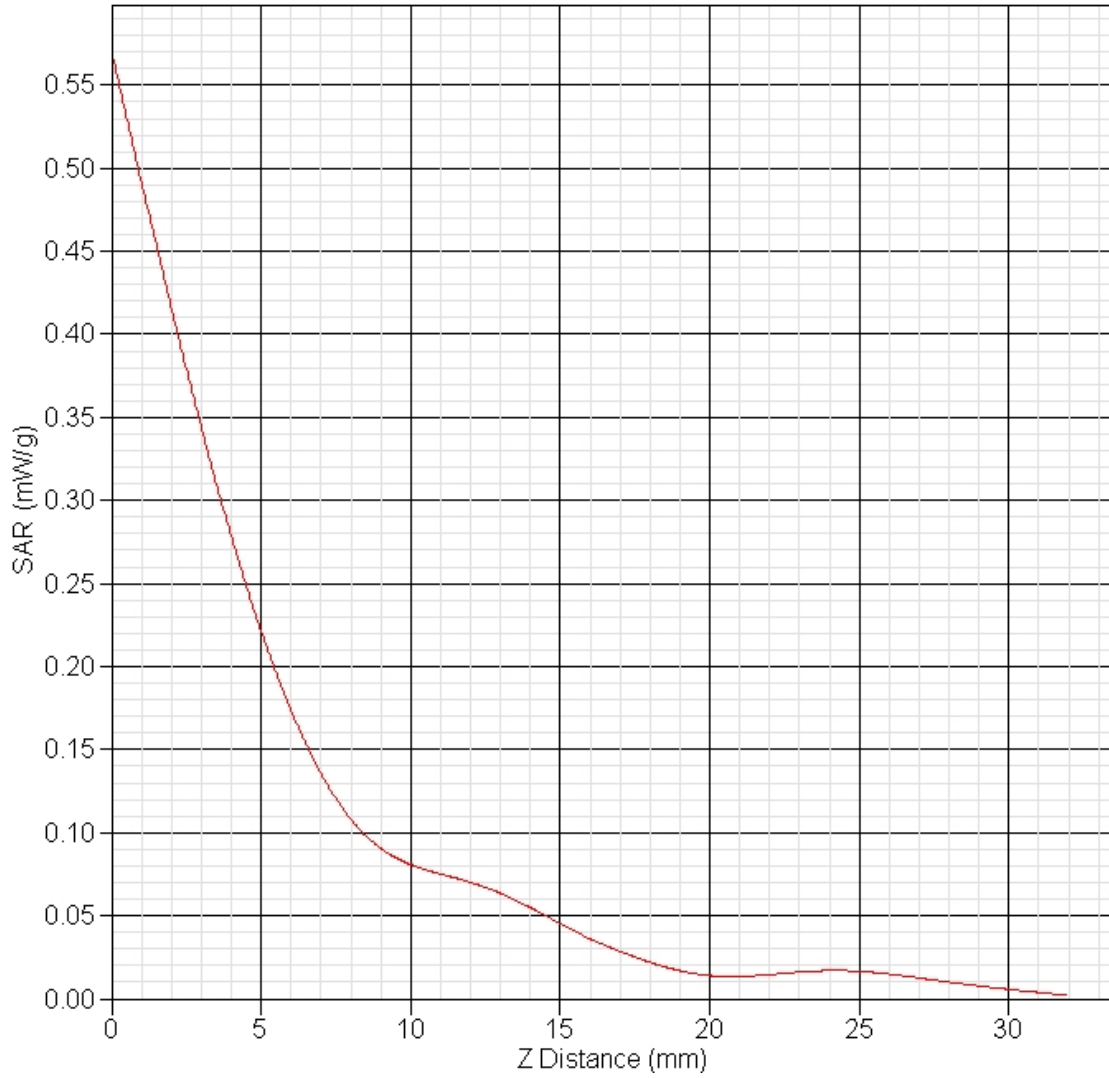
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**Exposure Assessment Measurement Uncertainty**

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	9.4	rectangular	•3	1	1	5.4	5.4
Phantom and Setup							
Phantom Uncertainty (shape & thickness tolerance)	3.4	rectangular	•3	1	1	2.0	2.0
Liquid Conductivity (target)	5.0	rectangular	•3	0.7	0.5	2.0	1.4
Liquid Conductivity (meas.)	1.0	normal	1	0.7	0.5	0.7	0.5
Liquid Permittivity (target)	5.0	rectangular	•3	0.6	0.5	1.7	1.4
Liquid Permittivity (meas.)	4.0	normal	1	0.6	0.5	2.4	2.0
Combined Uncertainty		RSS				11.0	10.8
Combined Uncertainty (coverage factor=2)		Normal (k=2)				22.0	21.5



## SAR-Z Axis at Hotspot x:0.14 y:-0.15



## SAR Test Report

### WiMAX DQ4\_12\_UQ16\_12\_10M

Report Date : 20-May-2009  
 By Operator : 123  
 Measurement Date : 20-May-2009  
 Starting Time : 20-May-2009 11:05:28 AM  
 End Time : 20-May-2009 11:16:59 AM  
 Scanning Time : 691 secs

Product Data  
 Device Name : Tiger-Tyco-bottom  
 Serial No. : 220-00754CN0J390M1296193C007  
 Type : Other  
 Model : TIR-E3-C2 - WiMAX  
 Frequency : 2600.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 105 mm  
 Width : 100 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.020 W/kg  
 Power Drift-Finish: 0.019 W/kg  
 Power Drift (%) : -4.647  
 Picture : C:\alsas\bitmap\tiger-Tyco-bottom.bmp

Phantom Data  
 Name : APREL-Uni  
 Type : Uni-Phantom  
 Size (mm) : 280 x 280 x 200  
 Serial No. : User Define  
 Location : Center  
 Description : U

Tissue Data  
 Type : BODY  
 Serial No. : 2600-B  
 Frequency : 2600.00 MHz  
 Last Calib. Date : 19-May-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 50.00 RH%  
 Epsilon : 51.54 F/m  
 Sigma : 2.24 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 2600.00 MHz  
 Duty Cycle Factor: 4.29  
 Conversion Factor: 3.8  
 Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
 Compression Point: 95.00 mV  
 Offset : 1.56 mm

## Measurement Data

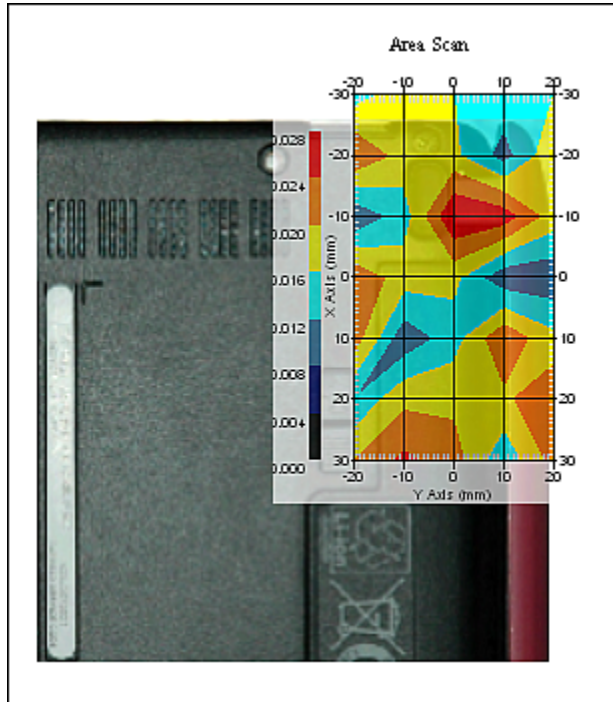
Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 21.00 °C  
 Ambient Temp. : 20.00 °C  
 Set-up Date : 20-May-2009  
 Set-up Time : 11:05:07 AM  
 Area Scan : 7x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Low







1 gram SAR value : 0.108 W/kg  
 Zoom Scan Peak SAR : 0.390 W/kg





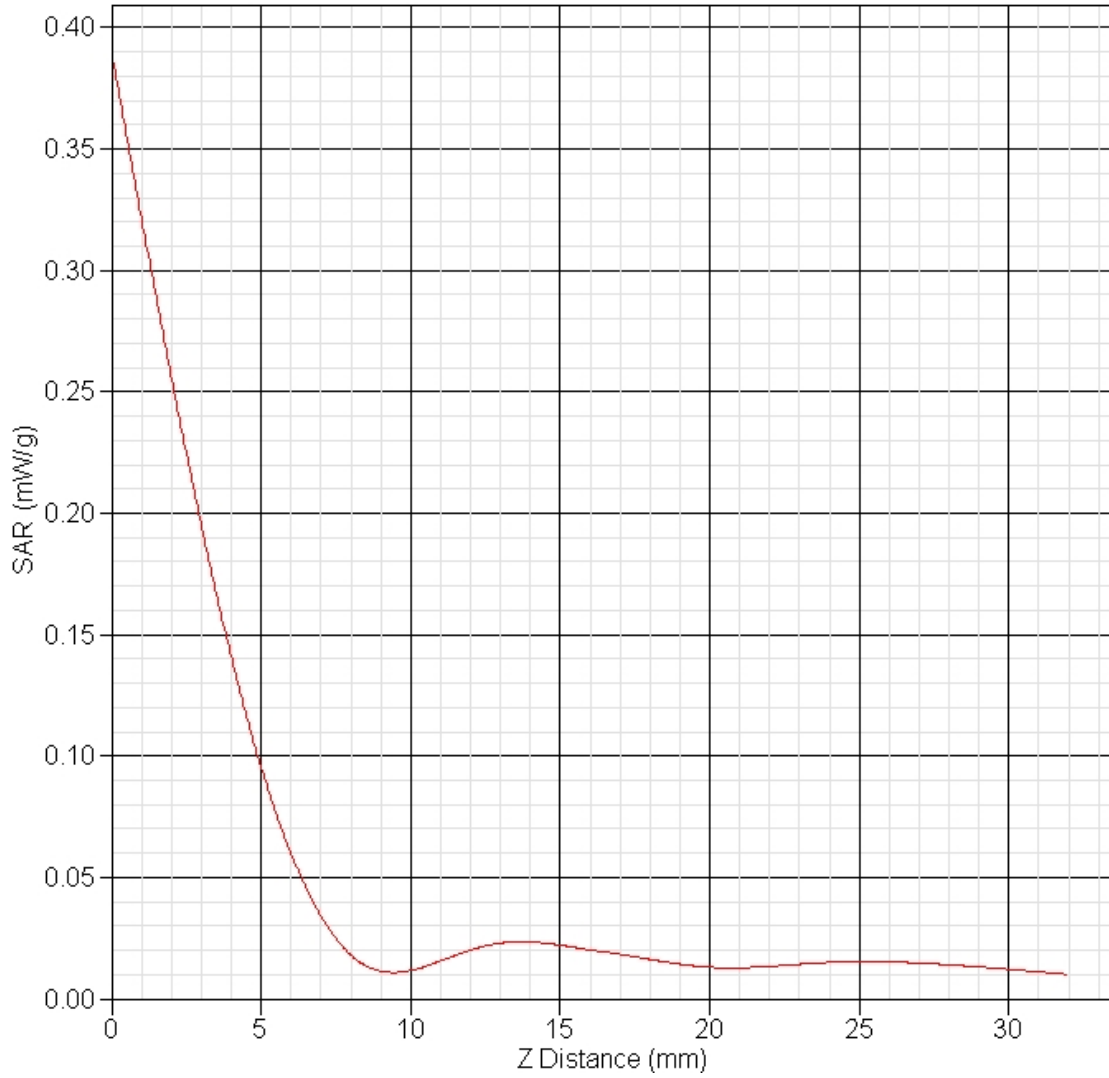
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**Exposure Assessment Measurement Uncertainty**

Source of Uncertainty	Tolerance Value	Probability Distribution	Divisor	$c_i^{-1}$ (1-g)	$c_i^{-1}$ (10-g)	Standard Uncertainty (1-g) %	Standard Uncertainty (10-g) %
Measurement System							
Probe Calibration	3.5	normal	1	1	1	3.5	3.5
Axial Isotropy	3.7	rectangular	•3	$(1-cp)^{1/2}$	$(1-cp)^{1/2}$	1.5	1.5
Hemispherical Isotropy	10.9	rectangular	•3	•cp	•cp	4.4	4.4
Boundary Effect	1.0	rectangular	•3	1	1	0.6	0.6
Linearity	4.7	rectangular	•3	1	1	2.7	2.7
Detection Limit	1.0	rectangular	•3	1	1	0.6	0.6
Readout Electronics	1.0	normal	1	1	1	1.0	1.0
Response Time	0.8	rectangular	•3	1	1	0.5	0.5
Integration Time	1.7	rectangular	•3	1	1	1.0	1.0
RF Ambient Condition	3.0	rectangular	•3	1	1	1.7	1.7
Probe Positioner Mech.	0.4	rectangular	•3	1	1	0.2	0.2
Restriction							
Probe Positioning with respect to Phantom Shell	2.9	rectangular	•3	1	1	1.7	1.7
Extrapolation and Integration	3.7	rectangular	•3	1	1	2.1	2.1
Test Sample Positioning	4.0	normal	1	1	1	4.0	4.0
Device Holder Uncertainty	2.0	normal	1	1	1	2.0	2.0
Drift of Output Power	4.7	rectangular	•3	1	1	2.2	2.2
Phantom and Setup							
Phantom Uncertainty (shape & thickness tolerance)	3.4	rectangular	•3	1	1	2	2
Liquid Conductivity (target)	5.0	rectangular	•3	0.7	0.5	2	1.4
Liquid Conductivity (meas.)	1.4	normal	1	0.7	0.5	1.1	0.9
Liquid Permittivity (target)	5.0	rectangular	•3	0.6	0.5	1.7	1.4
Liquid Permittivity (meas.)	1.4	normal	1	0.6	0.5	0.9	0.7
Combined Uncertainty		RSS				9.9	8.6
Combined Uncertainty (coverage factor=2)		Normal (k=2)				19.8	17.2



## SAR-Z Axis at Hotspot x:-9.84 y:-16.12



## SAR Test Report

### DQ64\_56\_UQ4\_12\_5M

Report Date : 19-May-2009  
 By Operator : 123  
 Measurement Date : 19-May-2009  
 Starting Time : 19-May-2009 04:11:59 PM  
 End Time : 19-May-2009 04:28:28 PM  
 Scanning Time : 989 secs

Product Data  
 Device Name : Tiger-Tyco-bottom  
 Serial No. : 220-00754CN0J390M1296193C007  
 Type : Other  
 Model : TIR-E3-C2 - WiMAX  
 Frequency : 2600.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 105 mm  
 Width : 100 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.027 W/kg  
 Power Drift-Finish: 0.026 W/kg  
 Power Drift (%) : -3.168  
 Picture : C:\alsas\bitmap\tiger-Tyco-bottom.bmp

Phantom Data  
 Name : APREL-Uni  
 Type : Uni-Phantom  
 Size (mm) : 280 x 280 x 200  
 Serial No. : User Define  
 Location : Center  
 Description : U

Tissue Data  
 Type : BODY  
 Serial No. : 2600-B  
 Frequency : 2600.00 MHz  
 Last Calib. Date : 19-May-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 50.00 RH%  
 Epsilon : 51.54 F/m  
 Sigma : 2.24 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 2600.00 MHz  
 Duty Cycle Factor: 2.72  
 Conversion Factor: 3.8  
 Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
 Compression Point: 95.00 mV  
 Offset : 1.56 mm

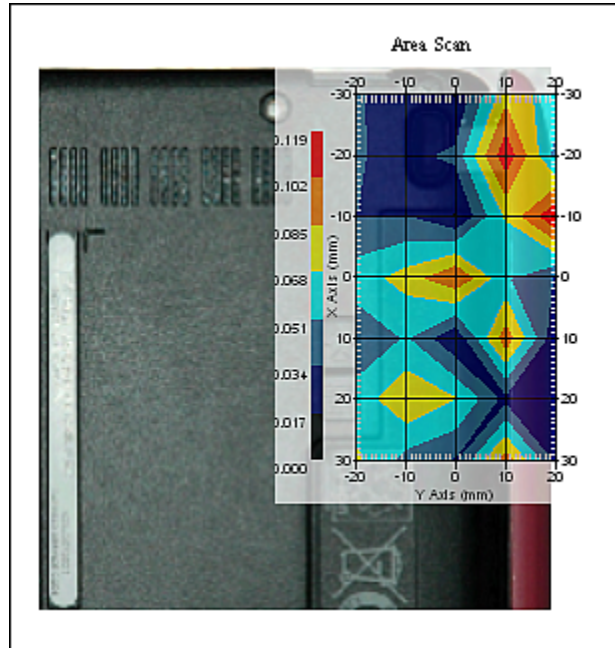
## Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 21.00 °C  
 Ambient Temp. : 20.00 °C  
 Set-up Date : 19-May-2009  
 Set-up Time : 4:11:41 PM  
 Area Scan : 7x5x1 : Measurement x=10mm, y=10mm, z=4mm  
 Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Low





1 gram SAR value : 0.079 W/kg  
 Zoom Scan Peak SAR : 0.160 W/kg



## SAR Test Report

Report Date : 11-Jun-2009  
 By Operator : 123  
 Measurement Date : 11-Jun-2009  
 Starting Time : 11-Jun-2009 11:53:07 AM  
 End Time : 11-Jun-2009 01:09:32 PM  
 Scanning Time : xxxx secs

**Product Data**  
 Device Name : Tiger-Tyco-bottom  
 Serial No. : 220-00754CN0J390M1296193C007  
 Type : Other  
 Model : TIR-E3-C2  
 Frequency : 5200.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 105 mm  
 Width : 100 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.071 W/kg  
 Power Drift-Finish : 0.072 W/kg  
 Power Drift (%) : 1.212  
 Picture : C:\alsas\bitmap\tiger-Tyco-bottom.bmp

**Phantom Data**  
 Name : APREL-Uni  
 Type : Uni-Phantom  
 Size (mm) : 280 x 280 x 200  
 Serial No. : User Define  
 Location : Center  
 Description : U

**Tissue Data**  
 Type : BODY  
 Serial No. : 5200-B  
 Frequency : 5200.00 MHz  
 Last Calib. Date : 10-Jun-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 40.00 RH%  
 Epsilon : 48.53 F/m  
 Sigma : 5.27 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 5200.00 MHz  
 Duty Cycle Factor: 1  
 Conversion Factor: 3.3  
 Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
 Compression Point: 95.00 mV  
 Offset : 1.56 mm

## Measurement Data

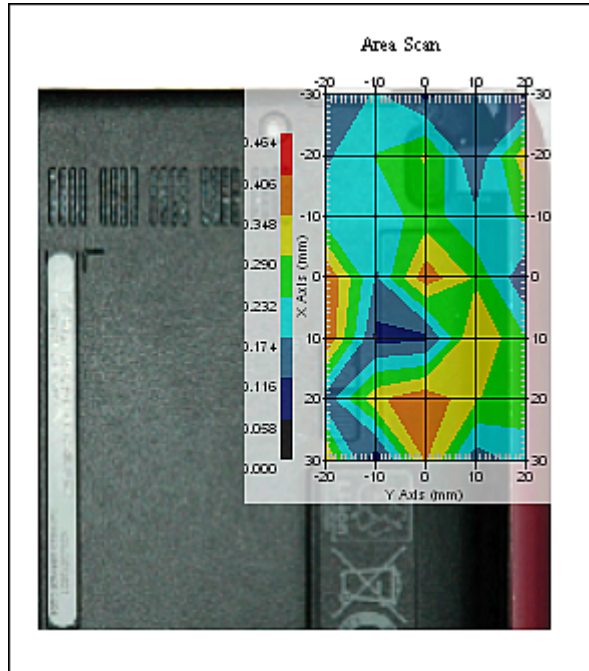
Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 21.00 °C  
 Ambient Temp. : 22.00 °C  
 Set-up Date : 11-Jun-2009  
 Set-up Time : 11:52:38 AM  
 Area Scan : 7x5x1 : Measurement x=10mm, y=10mm, z=2mm  
 Zoom Scan : 9x9x17 : Measurement x=4mm, y=4mm, z=2mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Low







1 gram SAR value : 0.498 W/kg  
 Zoom Scan Peak SAR : 1.651 W/kg





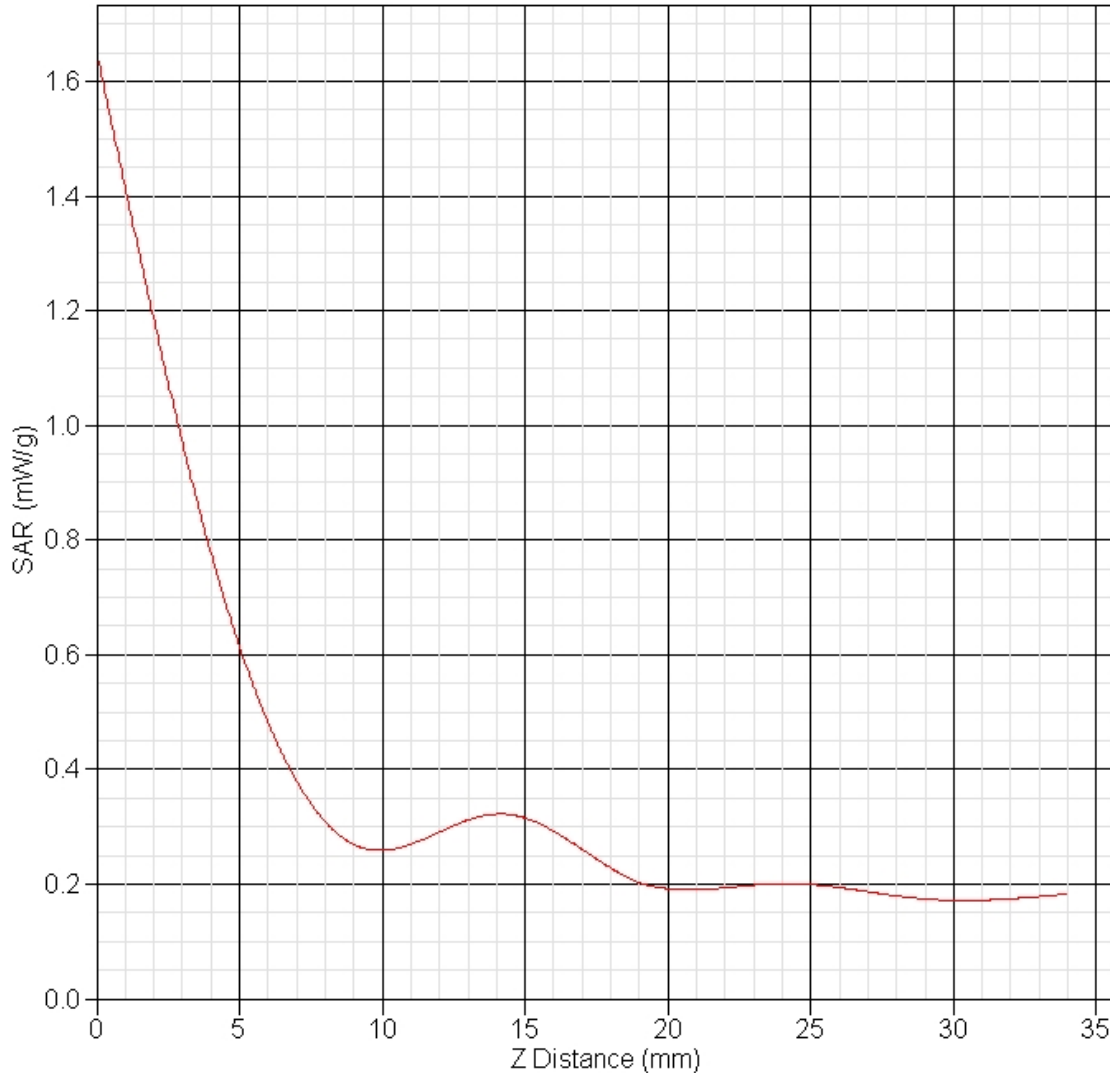
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**Exposure Assessment Measurement Uncertainty**

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	1.2	rectangular	•3	1	1	1.1	1.1
Phantom and Setup							
Phantom Uncertainty (shape & thickness tolerance)	3.4	rectangular	•3	1	1	2	2
Liquid Conductivity (target)	5.0	rectangular	•3	0.7	0.5	2	1.4
Liquid Conductivity (meas.)	3.0	normal	1	0.7	0.5	2.1	1.5
Liquid Permittivity (target)	5.0	rectangular	•3	0.6	0.5	1.7	1.4
Liquid Permittivity (meas.)	2.1	normal	1	0.6	0.5	1.2	1
Combined Uncertainty		RSS				10.1	8.4
Combined Uncertainty (coverage factor=2)		Normal (k=2)				20.2	16.8



## SAR-Z Axis at Hotspot x:20.14 y:4.88



## SAR Test Report

Report Date : 06-May-2009  
 By Operator : 123  
 Measurement Date : 06-May-2009  
 Starting Time : 06-May-2009 04:18:19 PM  
 End Time : 06-May-2009 05:36:22 PM  
 Scanning Time : xxxx secs

### Product Data

Device Name : Tiger-Tyco-back  
 Serial No. : 220-00754CN0J390M1296193C002  
 Type : Other  
 Model : TIR-E3-C2  
 Frequency : 5600.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 85 mm  
 Width : 35 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.041 W/kg  
 Power Drift-Finish: 0.040 W/kg  
 Power Drift (%) : -1.884  
 Picture : C:\alsas\bitmap\Device-25.bmp

### Phantom Data

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

### Tissue Data

Type : BODY  
 Serial No. : 5600BB  
 Frequency : 5600.00 MHz  
 Last Calib. Date : 04-May-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 22.00 RH%  
 Epsilon : 47.59 F/m  
 Sigma : 5.87 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 5600.00 MHz  
 Duty Cycle Factor: 1  
 Conversion Factor: 3  
 Probe Sensitivity: 1.20 1.20 1.20  $\mu\text{V}/(\text{V}/\text{m})^2$   
 Compression Point: 95.00 mV  
 Offset : 1.56 mm

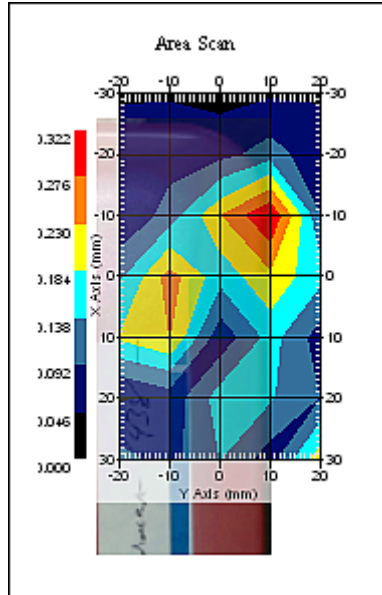
## Measurement Data

Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 22.00 °C  
 Ambient Temp. : 21.00 °C  
 Set-up Date : 06-May-2009  
 Set-up Time : 4:17:36 PM  
 Area Scan : 7x5x1 : Measurement x=10mm, y=10mm, z=2mm  
 Zoom Scan : 9x9x17 : Measurement x=4mm, y=4mm, z=2mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : Mid





1 gram SAR value : 0.473 W/kg  
 Zoom Scan Peak SAR : 1.020 W/kg



## SAR Test Report

Report Date : 07-May-2009  
 By Operator : 123  
 Measurement Date : 07-May-2009  
 Starting Time : 07-May-2009 11:32:58 AM  
 End Time : 07-May-2009 12:51:36 PM  
 Scanning Time : xxxx secs

Product Data  
 Device Name : Tiger-Tyco-back  
 Serial No. : 220-00754CN0J390M1296193C002  
 Type : Other  
 Model : TIR-E3-C2  
 Frequency : 5800.00 MHz  
 Max. Transmit Pwr : 1 W  
 Drift Time : 0 min(s)  
 Length : 85 mm  
 Width : 35 mm  
 Depth : 30.4 mm  
 Antenna Type : Internal  
 Orientation : Touch  
 Power Drift-Start : 0.200 W/kg  
 Power Drift-Finish: 0.189 W/kg  
 Power Drift (%) : -5.631  
 Picture : C:\alsas\bitmap\Device-25.bmp

Phantom Data  
 Name : APREL-Uni  
 Type : Uni-Phantom  
 Size (mm) : 280 x 280 x 200  
 Serial No. : User Define  
 Location : Center  
 Description : U

Tissue Data  
 Type : BODY  
 Serial No. : 5800-B  
 Frequency : 5800.00 MHz  
 Last Calib. Date : 04-May-2009  
 Temperature : 20.00 °C  
 Ambient Temp. : 20.00 °C  
 Humidity : 50.00 RH%  
 Epsilon : 47.20 F/m  
 Sigma : 6.25 S/m  
 Density : 1000.00 kg/cu. m

## Probe Data

Name : .E30  
 Model : E30  
 Type : E-Field Triangle  
 Serial No. : 222  
 Last Calib. Date : 16-Jan-2009  
 Frequency : 5800.00 MHz  
 Duty Cycle Factor: 1  
 Conversion Factor: 3.2  
 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

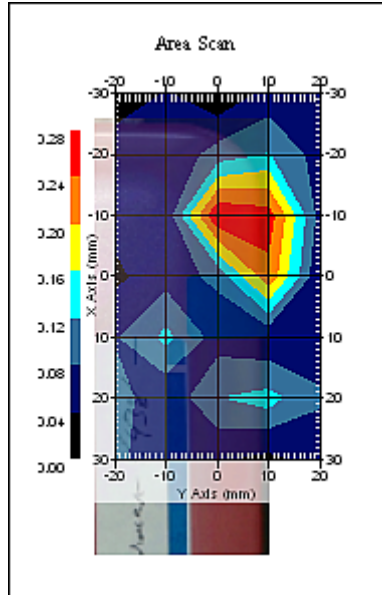
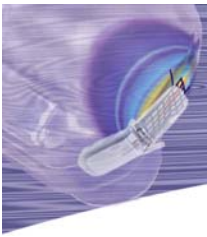
Crest Factor : 1  
 Scan Type : Complete  
 Tissue Temp. : 23.00 °C  
 Ambient Temp. : 21.00 °C  
 Set-up Date : 07-May-2009  
 Set-up Time : 11:32:28 AM  
 Area Scan : 7x5x1 : Measurement x=10mm, y=10mm, z=2mm  
 Zoom Scan : 9x9x17 : Measurement x=4mm, y=4mm, z=2mm

## Other Data

DUT Position : Touch  
 Separation : 0  
 Channel : High







1 gram SAR value : 0.373 W/kg  
 Zoom Scan Peak SAR : 1.140 W/kg

