

MEASUREMENT SUMMARY

The measurement results were obtained with the EUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum SAR location of the EUT are reported in Appendix A.

BODY SAR MEASUREMENT RESULTS										
Transmit Mode	Freq. (MHz)	Channel	Test Mode	Conducted Power (dBm)		Laptop PC Position to Planar Phantom	Laptop LCD-back Section	Antenna	Separation Distance (cm)	Measured SAR 1g (W/kg)
				Before	After					
WLAN	2437	Mid	CW	21.1	20.9	Back of LCD (LCD Closed)	Left Side	Left Side	1.5	0.140
GPRS	1880	Mid	GPRS	27.9	27.8	Back of LCD (LCD Closed)	Left Side	Dipole	1.5	0.0077
WLAN & GPRS	2437	Mid	CW	21.1	20.9	Back of LCD (LCD Closed)	Left Side	Left Side	1.5	0.158
WLAN	2437	Mid	CW	21.1	20.9	Back of LCD (LCD Closed)	Right Side	Right Side	1.5	0.143
GPRS	1880	Mid	GPRS	27.9	27.8	Back of LCD (LCD Closed)	Right Side	Dipole	1.5	0.279
WLAN & GPRS	2437	Mid	CW	21.1	20.9	Back of LCD (LCD Closed)	Right Side	Right Side	1.5	0.196
	1880	Mid	CW	27.9	27.8	Back of LCD (LCD Closed)	Right Side	Dipole	1.5	0.314
ANSI / IEEE C95.1 1992 - SAFETY LIMIT BODY: 1.6 W/kg (averaged over 1 gram) Spatial Peak - Uncontrolled Exposure / General Population										
Test Date(s)		04/29/03		Relative Humidity		50 %				
Measured Mixture Type		2450MHz Body		Atmospheric Pressure		101.0 kPa				
Dielectric Constant ϵ_r		IEEE Target		Measured		Ambient Temperature		23.3 °C		
		52.7 ±10%		47.5		Fluid Temperature		23.6 °C		
Conductivity s (mho/m)		IEEE Target		Measured		Fluid Depth		≥ 15 cm		
		1.95 ±5%		2.00		r (Kg/m ³)		1000		

Note(s):

1. If the SAR measurements performed at the middle channel were ≥ 3dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01).
2. All secondary peak SAR locations within 3dB of the primary peak value were evaluated.
3. The simultaneous transmit tests were performed with the co-located Sierra Wireless AirCard 750 GSM/GPRS Modem set to the maximum conducted power level (27.9 dBm) at the mid channel (1880MHz), and transmitting continuously on 4 time slots in GPRS mode. This is the maximum output condition since the EUT is a Class 12 multi-slot GSM/GPRS modem.
4. The EUT was tested with the LCD display lid in the closed position and the external dipole antenna in the stowed position.
5. The ambient and fluid temperatures were measured prior to, and during, the fluid dielectric parameter check and the SAR evaluation. The temperatures listed in the table above were consistent for all measurement periods.
6. The dielectric properties of the simulated body fluid were verified prior to the evaluation using an 85070C Dielectric Probe Kit and an 8753E Network Analyzer (see attached printout of measured fluid dielectric parameters).

Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)

Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0

2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.140 mW/g, SAR (10g): 0.0740 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Left-Side WLAN Antenna

1.5 cm Separation Distance from Back of LCD Display to Planar Phantom

Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card

Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem

CW Mode

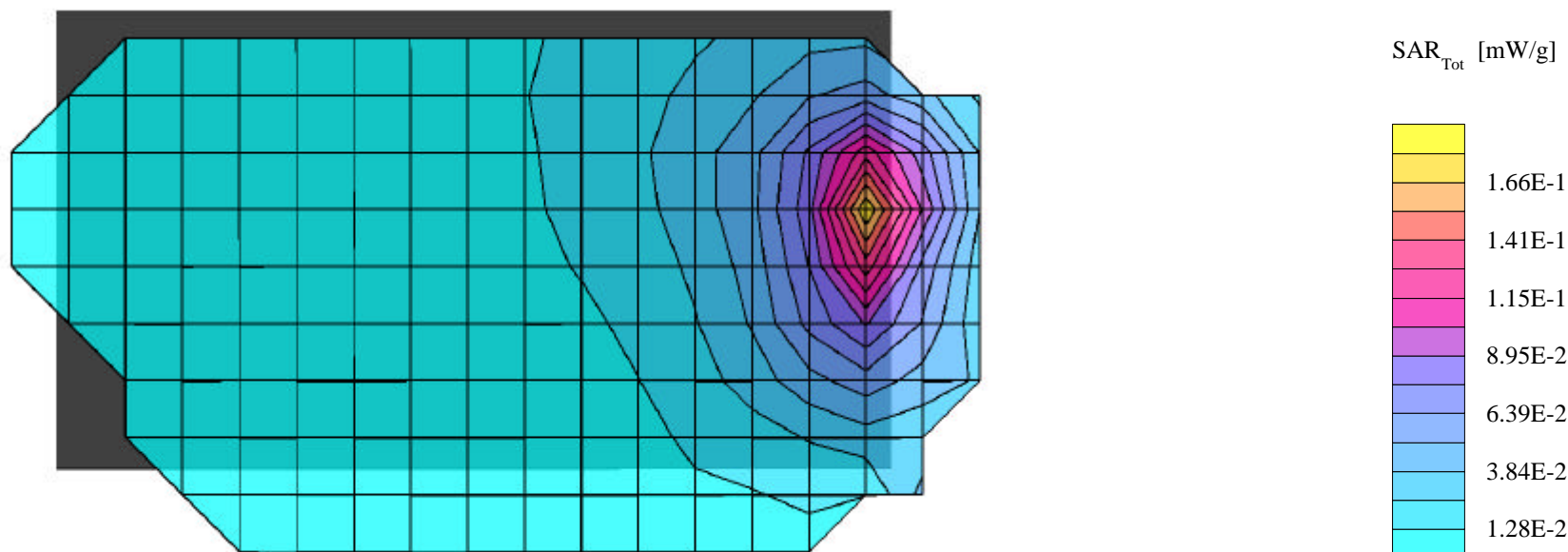
Single Transmit - WLAN only

Mid Channel [2437 MHz]

Peak Conducted Power: 21.1 dBm

Ambient Temp: 23.3°C; Fluid Temp: 23.6°C

Date Tested: April 29, 2003

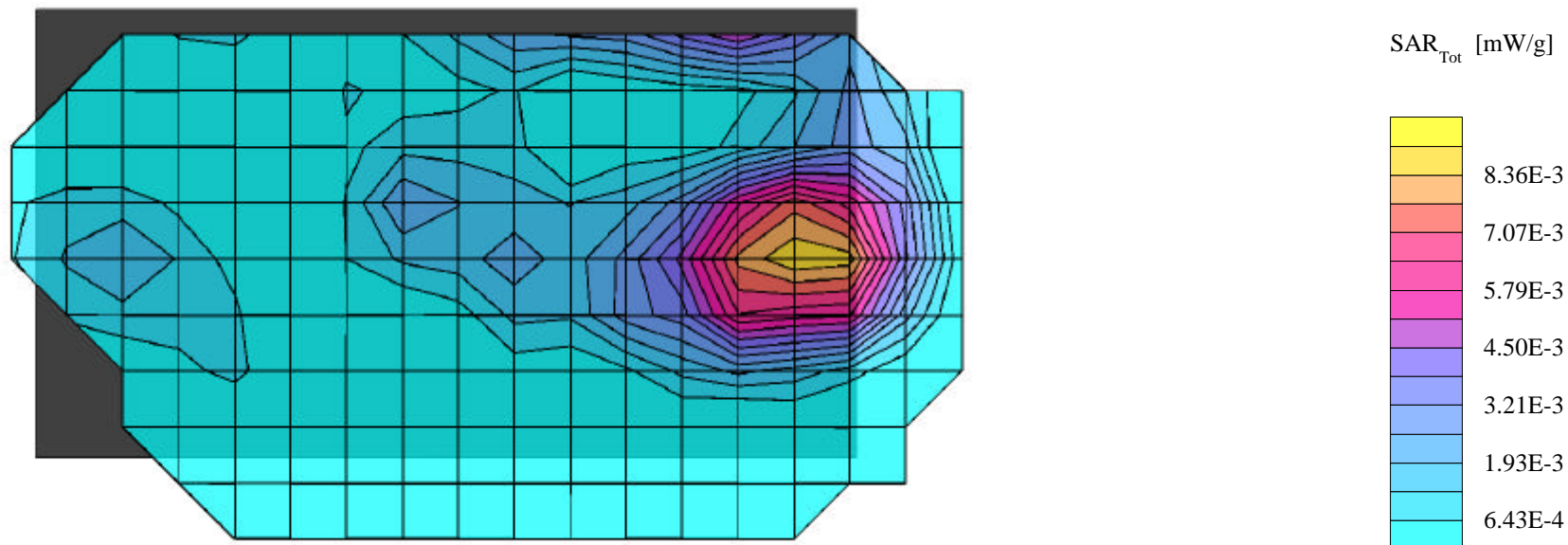


Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0
2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7
SAR (1g): 0.0077 mW/g, SAR (10g): 0.0049 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Left Side - GPRS Dipole Antenna
1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
PCS GPRS Mode

Single Transmit - GPRS only
Mid Channel [1880 MHz]
Conducted Power: 27.9 dBm
Ambient Temp: 23.3°C; Fluid Temp: 23.6°C
Date Tested: April 29, 2003



Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)

Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0

2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.158 mW/g, SAR (10g): 0.0841 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Left-Side WLAN Antenna

1.5 cm Separation Distance from Back of LCD Display to Planar Phantom

Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card

Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem

CW Mode

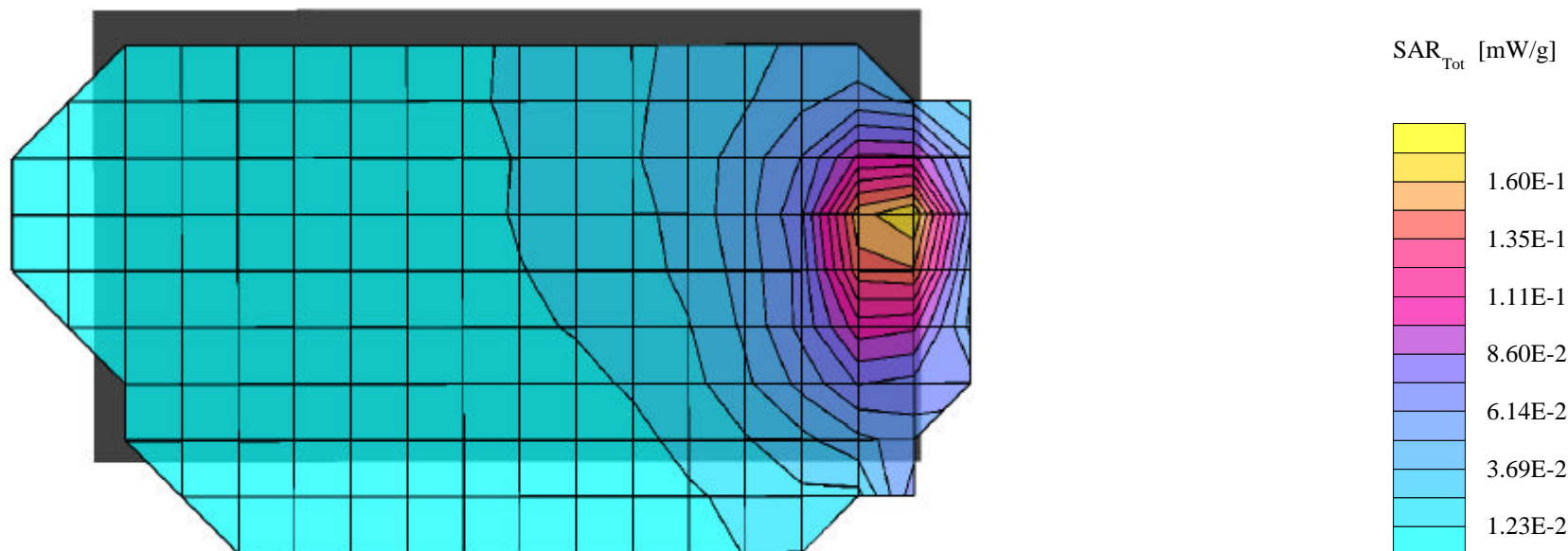
Simultaneous Transmit - WLAN & GPRS

Mid Channel [2437 MHz]

Peak Conducted Power: 21.1 dBm

Ambient Temp: 23.3°C; Fluid Temp: 23.6°C

Date Tested: April 29, 2003

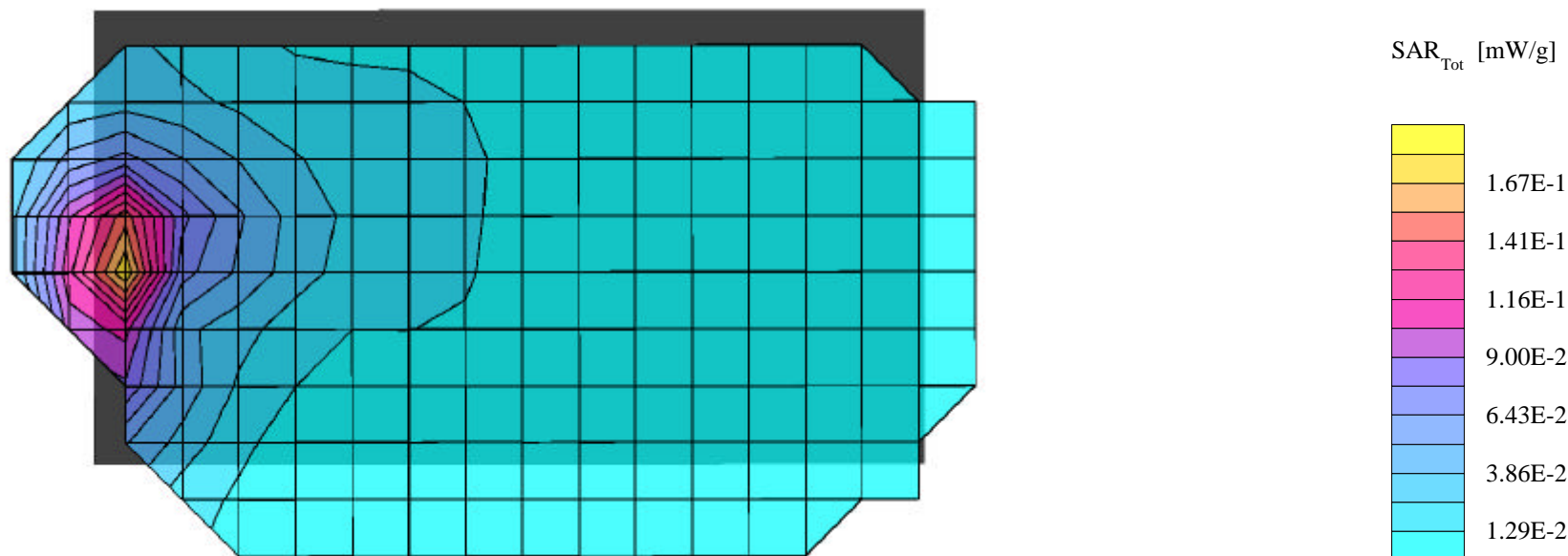


Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)
Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0
2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7
SAR (1g): 0.143 mW/g, SAR (10g): 0.0739 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side WLAN Antenna
1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
CW Mode

Single Transmit - WLAN only
Mid Channel [2437 MHz]
Peak Conducted Power: 21.1 dBm
Ambient Temp: 23.3°C; Fluid Temp: 23.6°C
Date Tested: April 29, 2003



Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0
 2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
 Cube 5x5x7
 SAR (1g): 0.279 mW/g, SAR (10g): 0.164 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side - GPRS Dipole Antenna
 1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
 Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
 Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
 PCS GPRS Mode

Single Transmit - GPRS only

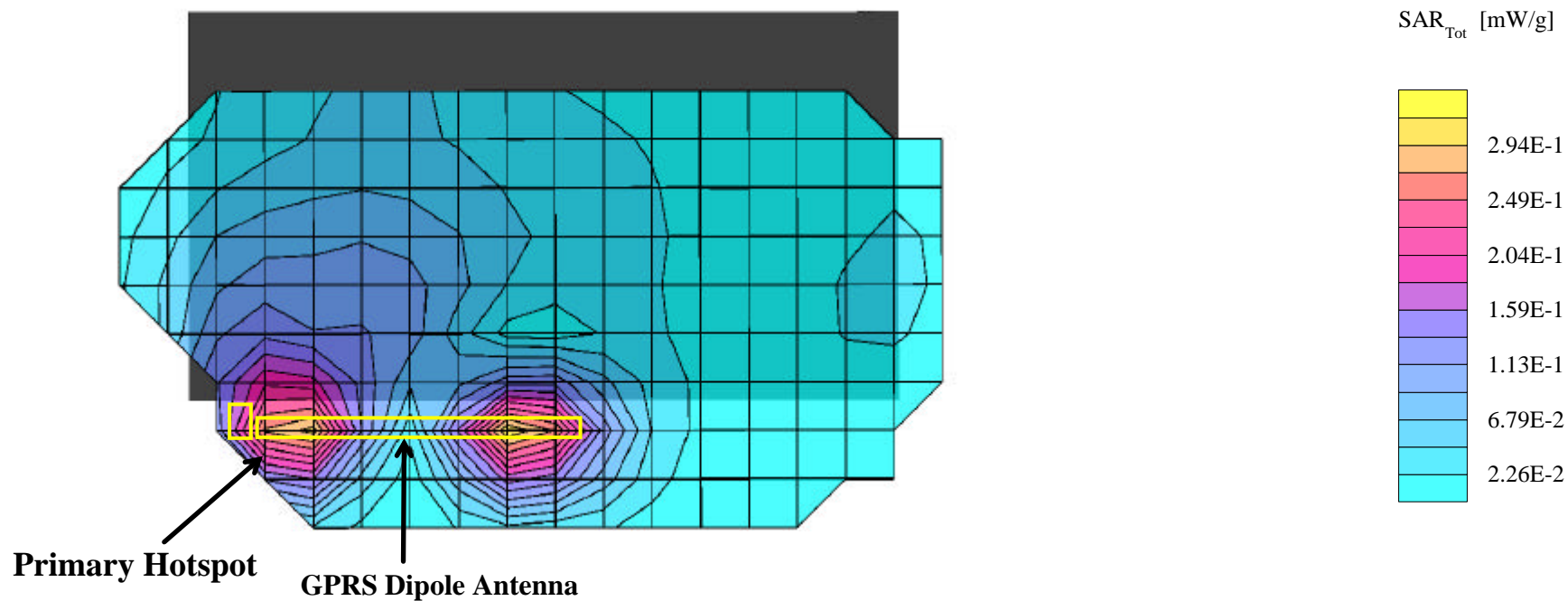
Mid Channel [1880 MHz]

Conducted Power: 27.9 dBm

Ambient Temp: 23.3°C; Fluid Temp: 23.6°C

Date Tested: April 29, 2003

Primary Hotspot Evaluation



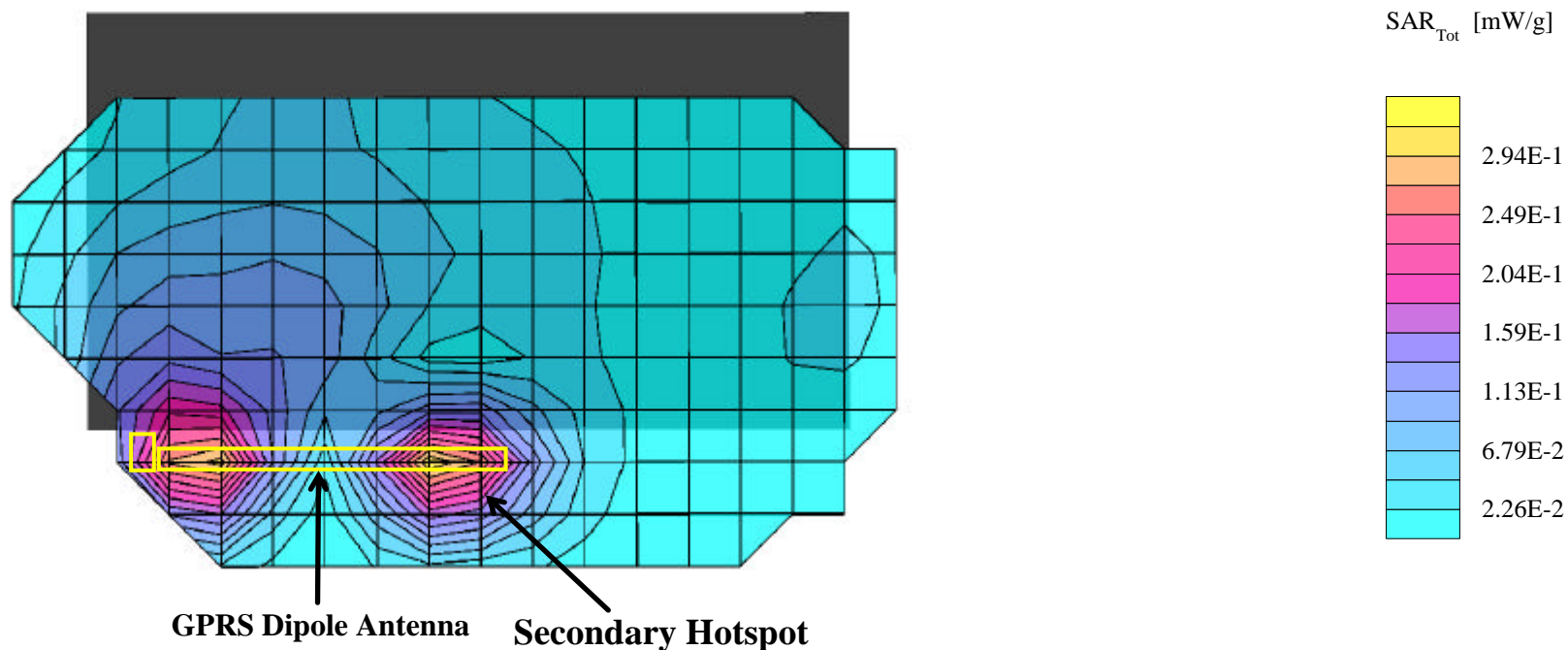
Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0
 2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
 Cube 5x5x7
 SAR (1g): 0.268 mW/g, SAR (10g): 0.159 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side - GPRS Dipole Antenna
 1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
 Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
 Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
 PCS GPRS Mode

Single Transmit - GPRS only
 Mid Channel [1880 MHz]
 Conducted Power: 27.9 dBm
 Ambient Temp: 23.3°C; Fluid Temp: 23.6°C
 Date Tested: April 29, 2003

Secondary Hotspot Evaluation



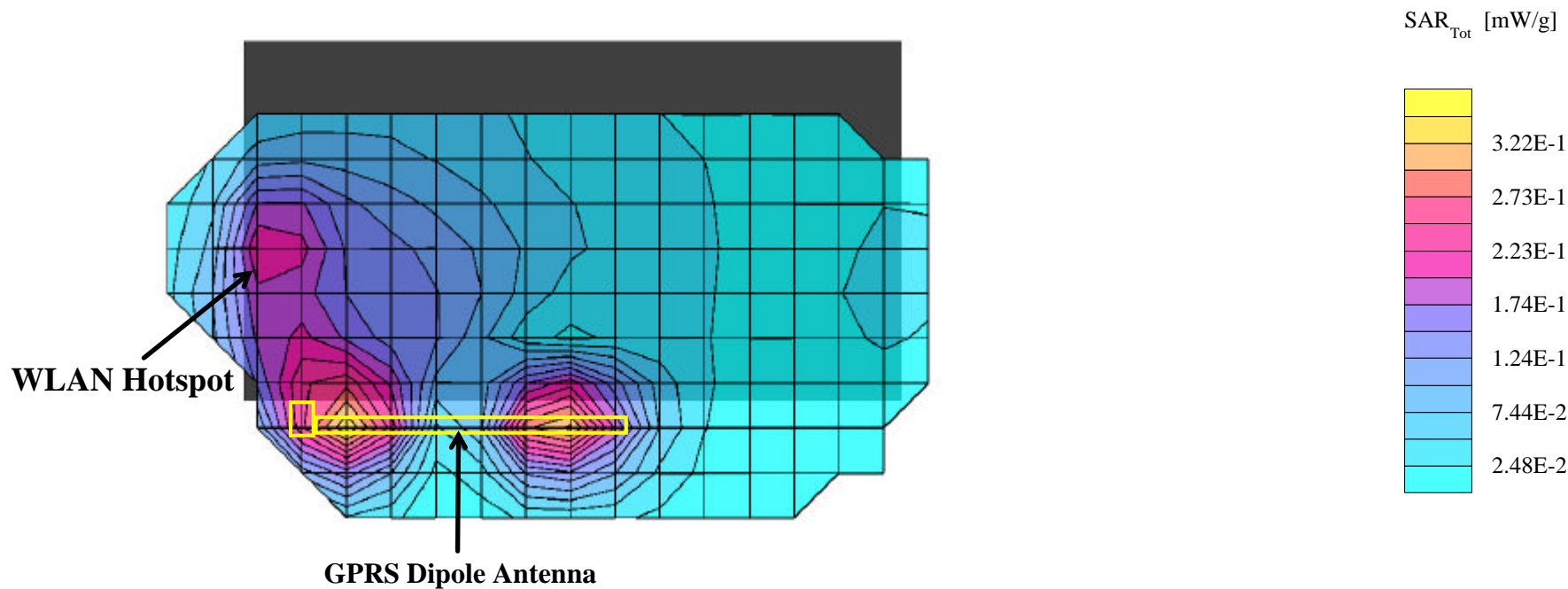
Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section; Position: (0°,0°)
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0
 2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
 Cube 5x5x7
 SAR (1g): 0.196 mW/g, SAR (10g): 0.111 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side WLAN Antenna & GPRS Dipole Antenna
 1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
 Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
 Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
 CW Mode

Simultaneous Transmit - WLAN & GPRS

Mid Channel [2437 MHz]
 Peak Conducted Power: 21.1 dBm
 Ambient Temp: 23.3°C; Fluid Temp: 23.6°C
 Date Tested: April 29, 2003



Itronix Corporation FCC ID: KBCIX260AC750-MPI

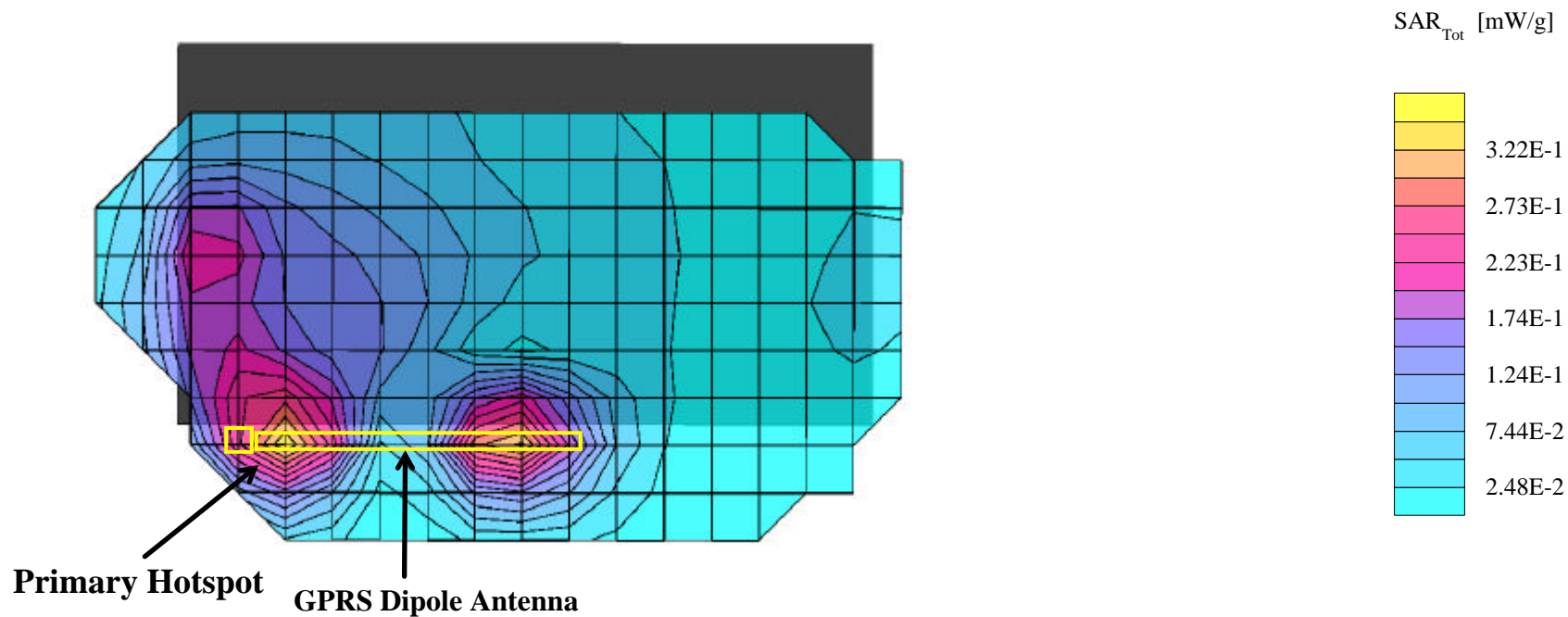
SAM Phantom; Flat Section; Position: (0°,0°)
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0
 2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
 Cube 5x5x7
 SAR (1g): 0.314 mW/g, SAR (10g): 0.186 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side WLAN Antenna & GPRS Dipole Antenna
 1.5 cm Separation Distance from Back of LCD Display to Planar Phantom
 Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card
 Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem
 PCS GPRS Mode

Simultaneous Transmit - WLAN & GPRS

Mid Channel [1880 MHz]
 Conducted Power: 27.9 dBm
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Primary Hotspot Evaluation



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Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0

2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Cube 5x5x7

SAR (1g): 0.297 mW/g, SAR (10g): 0.176 mW/g

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side WLAN Antenna & GPRS Dipole Antenna

1.5 cm Separation Distance from Back of LCD Display to Planar Phantom

Itronix IX260 Rugged Laptop PC with Cisco MPI-350 Mini-PCI WLAN Card

Co-located with Sierra Wireless AirCard 750 PCS GSM/GPRS Modem

PCS GPRS Mode

Simultaneous Transmit - WLAN & GPRS

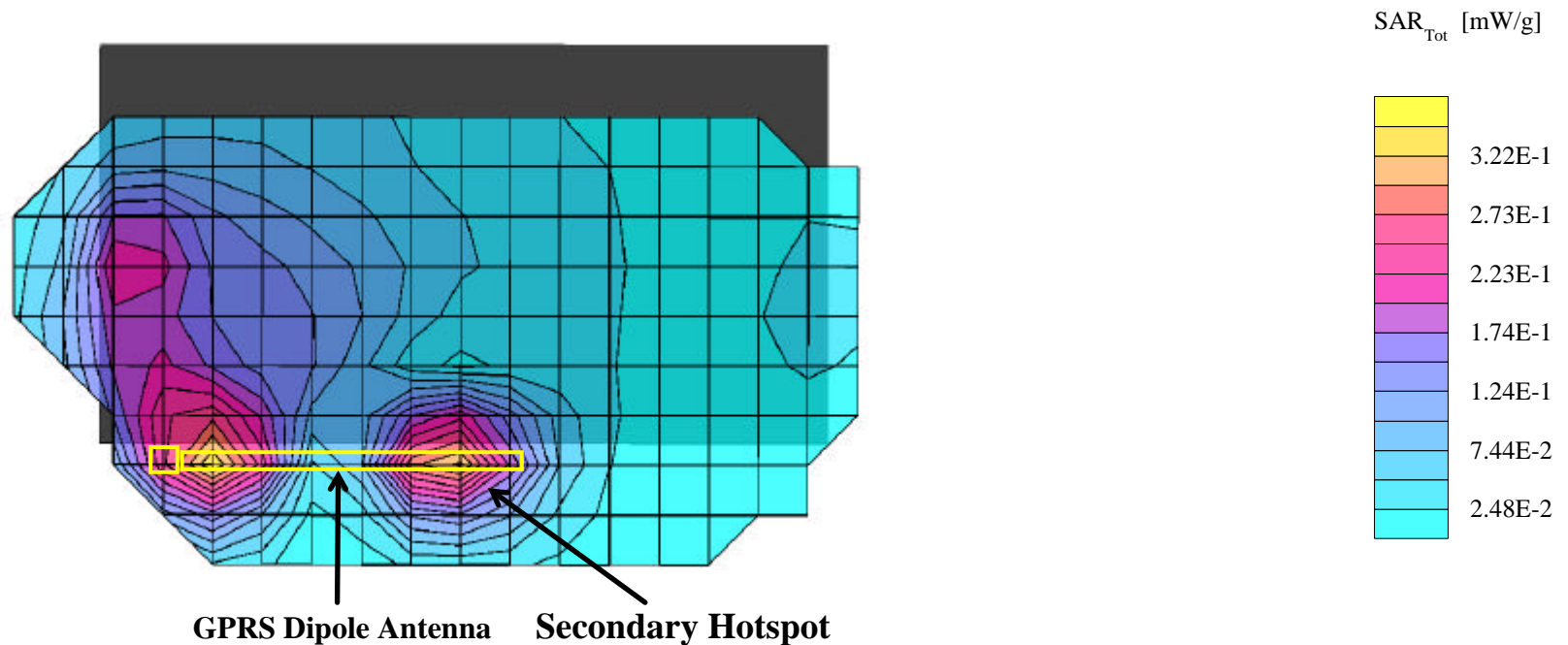
Mid Channel [1880 MHz]

Conducted Power: 27.9 dBm

Ambient Temp: 23.3°C; Fluid Temp: 23.6°C

Date Tested: April 29, 2003

Secondary Hotspot Evaluation



Itronix Corporation FCC ID: KBCIX260AC750-MPI

SAM Phantom; Flat Section

Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0

2450 MHz Muscle: $\sigma = 2.00$ mho/m $\epsilon_r = 47.5$ $\rho = 1.00$ g/cm³

Z-Axis Extrapolation at Peak SAR Location

Body SAR - Back of Laptop PC LCD Display (Closed) - Right-Side WLAN Antenna & GPRS Dipole Antenna

1.5 cm Separation Distance from Back of LCD Display to Planar Phantom

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PCS GPRS Mode

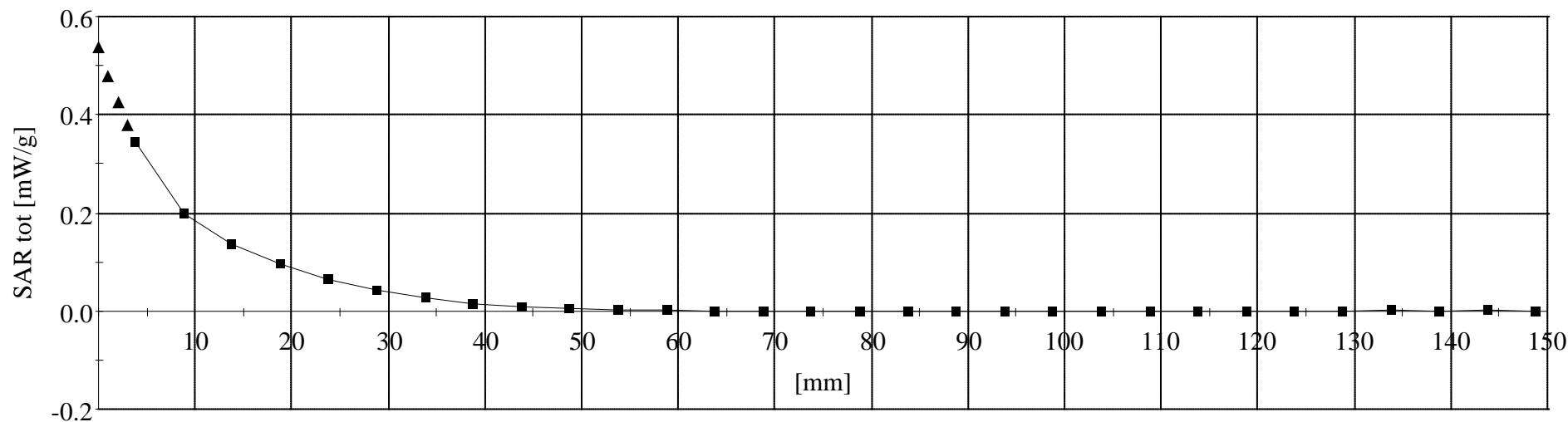
Simultaneous Transmit - WLAN & GPRS

Mid Channel [1880 MHz]

Conducted Power: 27.9 dBm

Ambient Temp: 23.3°C; Fluid Temp: 23.6°C

Date Tested: April 29, 2003



2450MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

April 29, 2003

Frequency	ϵ'	ϵ''
2.350000000 GHz	47.8446	14.3332
2.360000000 GHz	47.8279	14.3744
2.370000000 GHz	47.8152	14.4148
2.380000000 GHz	47.7994	14.4320
2.390000000 GHz	47.7765	14.4571
2.400000000 GHz	47.7265	14.4716
2.410000000 GHz	47.6942	14.5044
2.420000000 GHz	47.6293	14.5463
2.430000000 GHz	47.5951	14.6027
2.440000000 GHz	47.5611	14.6425
2.450000000 GHz	47.5085	14.7102
2.460000000 GHz	47.4942	14.7529
2.470000000 GHz	47.4486	14.7938
2.480000000 GHz	47.4302	14.8455
2.490000000 GHz	47.4144	14.8711
2.500000000 GHz	47.3815	14.8924
2.510000000 GHz	47.3529	14.9164
2.520000000 GHz	47.2669	14.9549
2.530000000 GHz	47.2371	15.0085
2.540000000 GHz	47.1660	15.0488
2.550000000 GHz	47.1258	15.1088