

## 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
<b>ANSI / IEEE C95.1 1992 - SAFETY LIMIT</b> <b>BODY: 1.6 W/kg (averaged over 1 gram)</b> <b>Spatial Peak - Uncontrolled Exposure / General Population</b>										
<b>Test Date(s)</b>	04/29/03		<b>Relative Humidity</b>		50 %					
<b>Measured Mixture Type</b>	2450MHz Body		<b>Atmospheric Pressure</b>		101.0 kPa					
<b>Dielectric Constant</b> $\epsilon_r$	<b>IEEE Target</b>	<b>Measured</b>	<b>Ambient Temperature</b>		23.3 °C					
	52.7 ±10%	47.5	<b>Fluid Temperature</b>		23.6 °C					
<b>Conductivity</b> $s$ (mho/m)	<b>IEEE Target</b>	<b>Measured</b>	<b>Fluid Depth</b>		≥ 15 cm					
	1.95 ±5%	2.00	<b><math>r</math> (Kg/m<sup>3</sup>)</b>		1000					

Note(s):

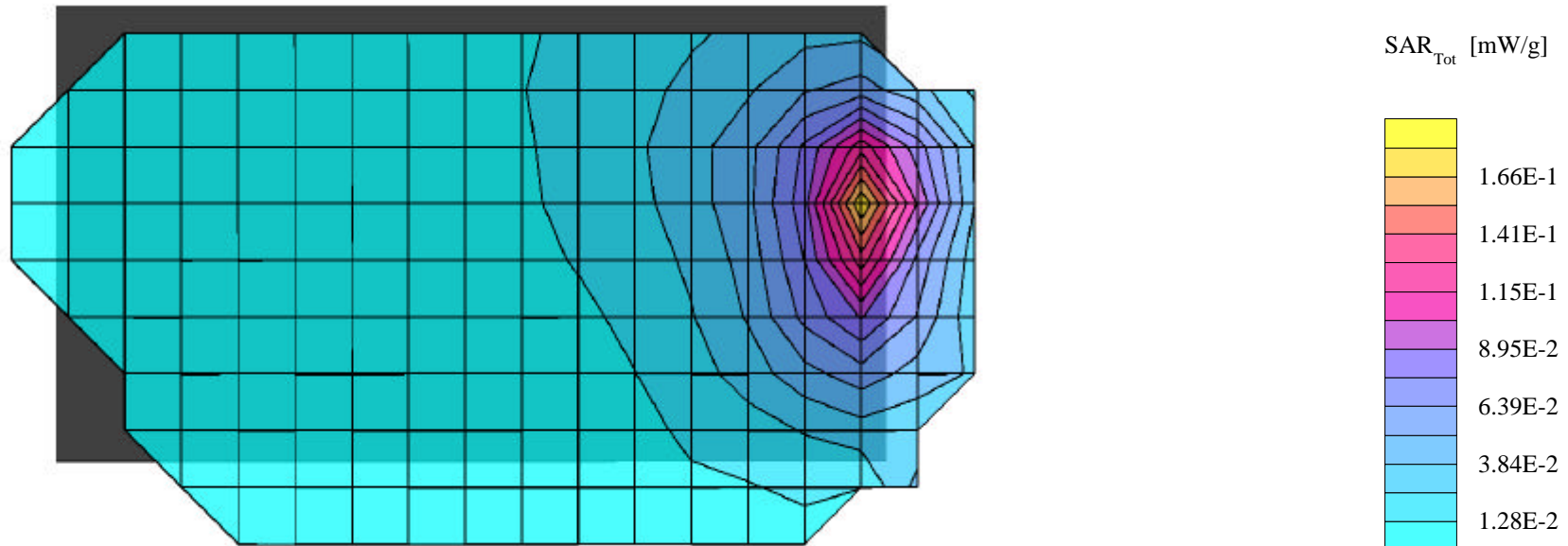
1. If the SAR measurements performed at the middle channel were ≥ 3dB below the SAR limit, SAR evaluation for the low and high channels was optional (per FCC OET Bulletin 65, Supplement C, Edition 01-01).
2. All secondary peak SAR locations within 3dB of the primary peak value were evaluated.
3. The 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/cm<sup>3</sup>  
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

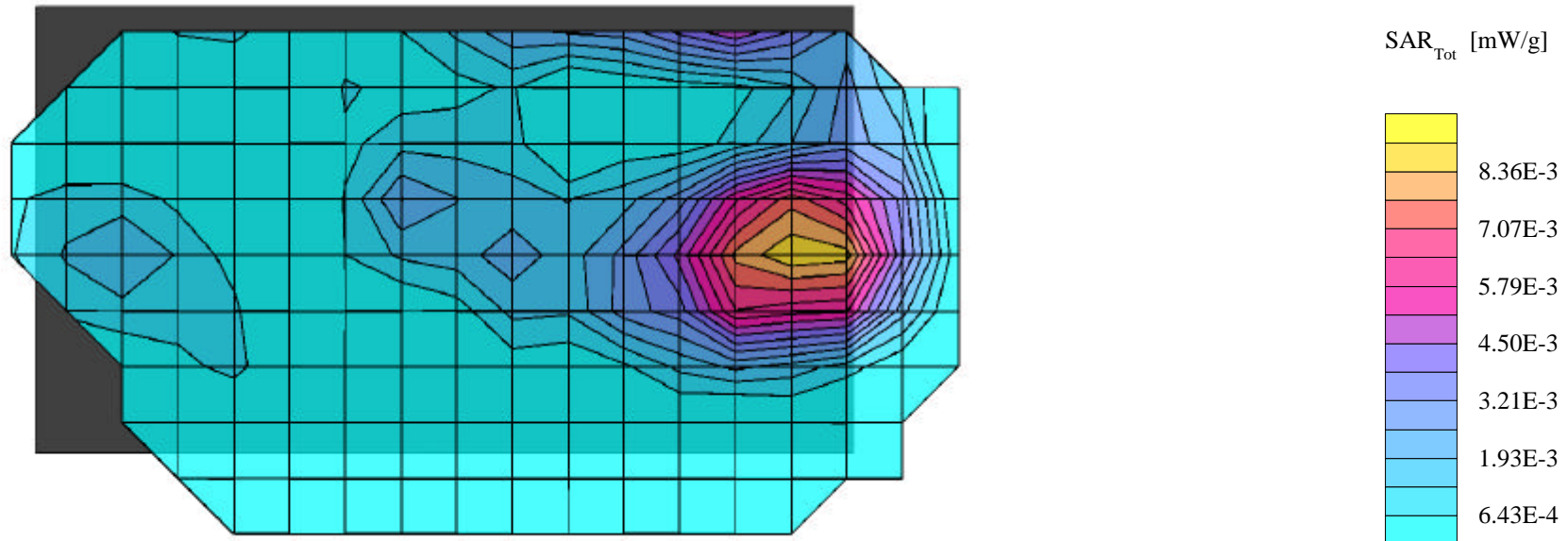


# Itronix Corporation FCC ID: KBCIX260AC750-MPI

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/cm<sup>3</sup>  
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



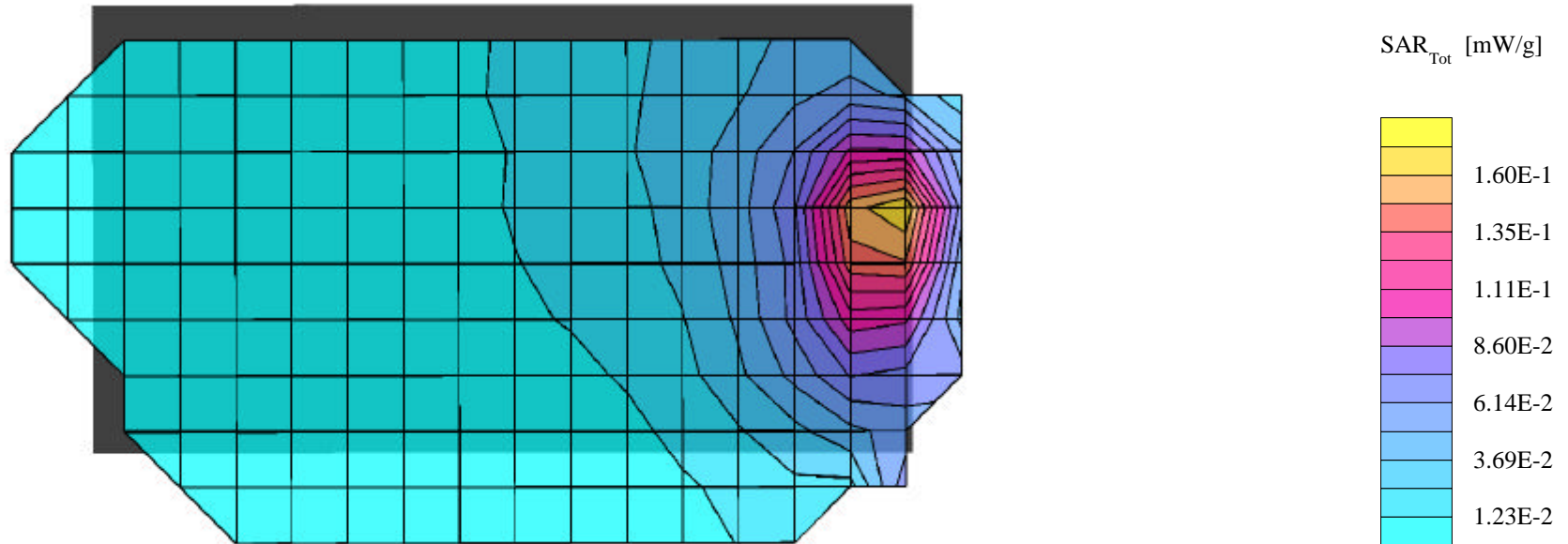
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SAM Phantom; Flat Section; Position: (0°,0°)  
Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0  
2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0  
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

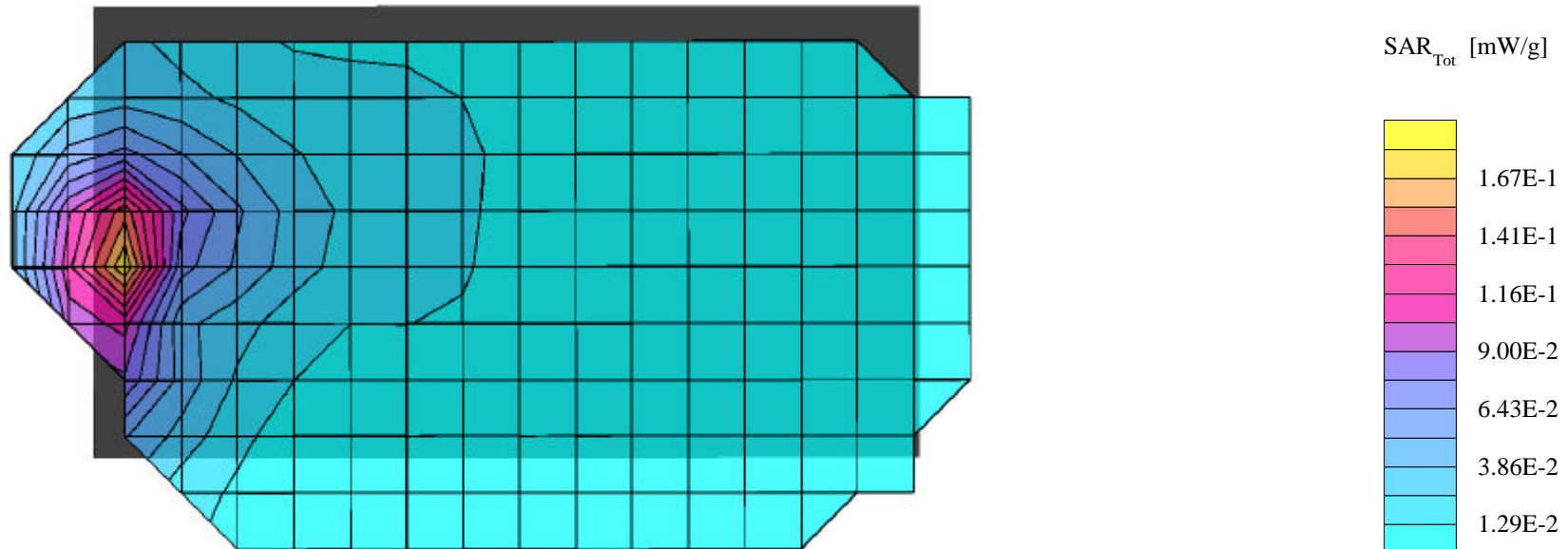


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Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0  
2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0  
Cube 5x5x7  
SAR (1g): 0.143 mW/g, SAR (10g): 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



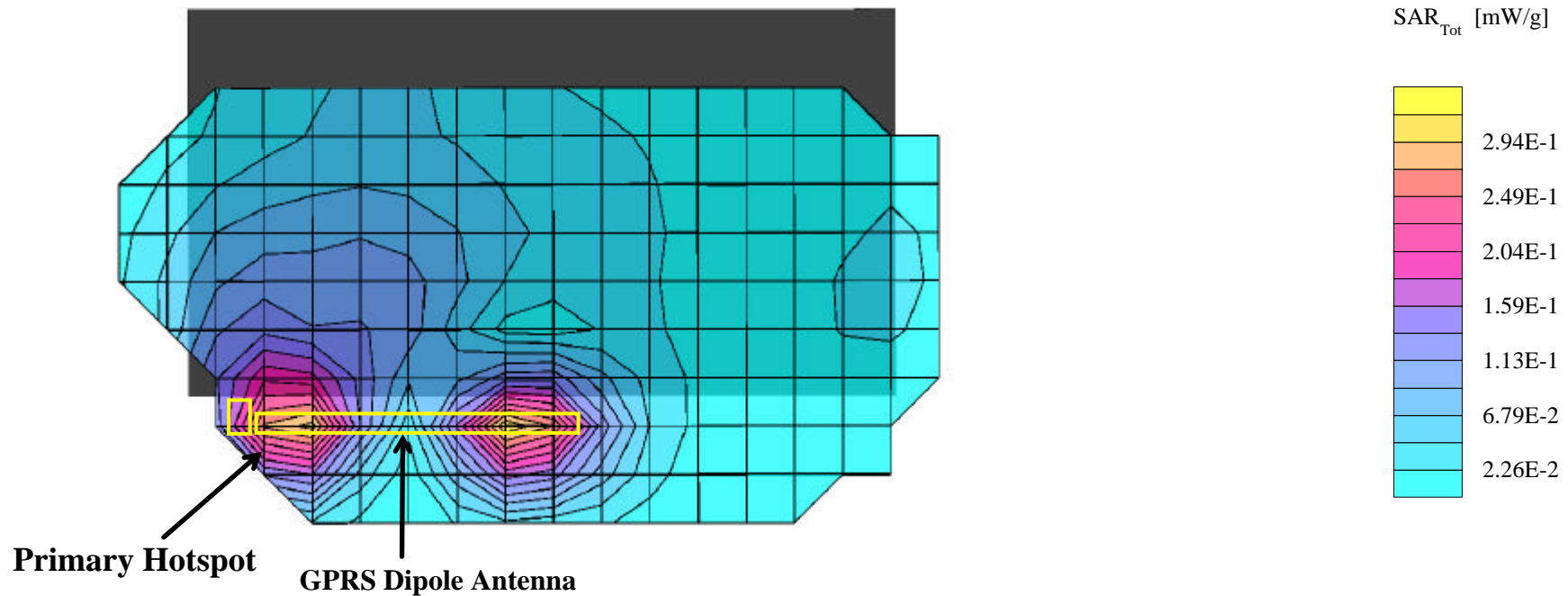
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SAM Phantom; Flat Section; Position: (0°,0°)  
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 2.0  
 2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 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





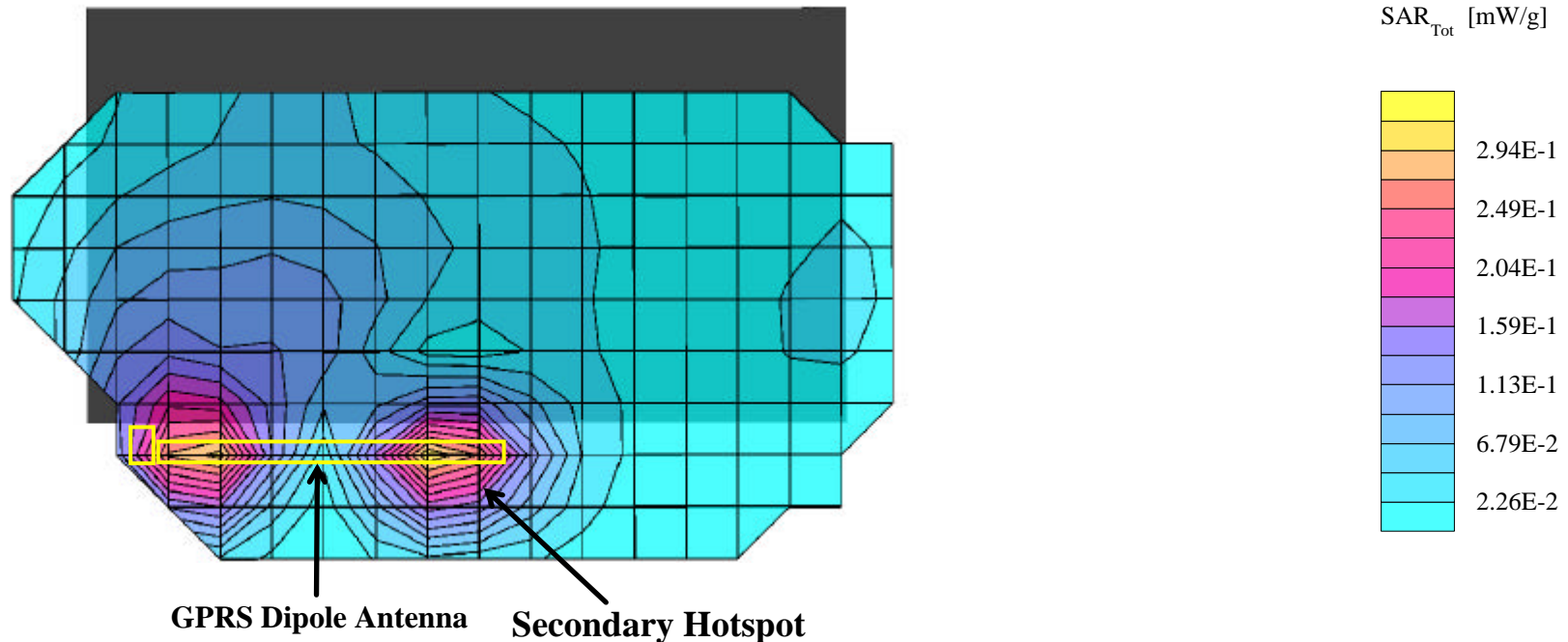
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 2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0  
 Cube 5x5x7  
 SAR (1g): 0.268 mW/g, SAR (10g): 0.159 mW/g

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



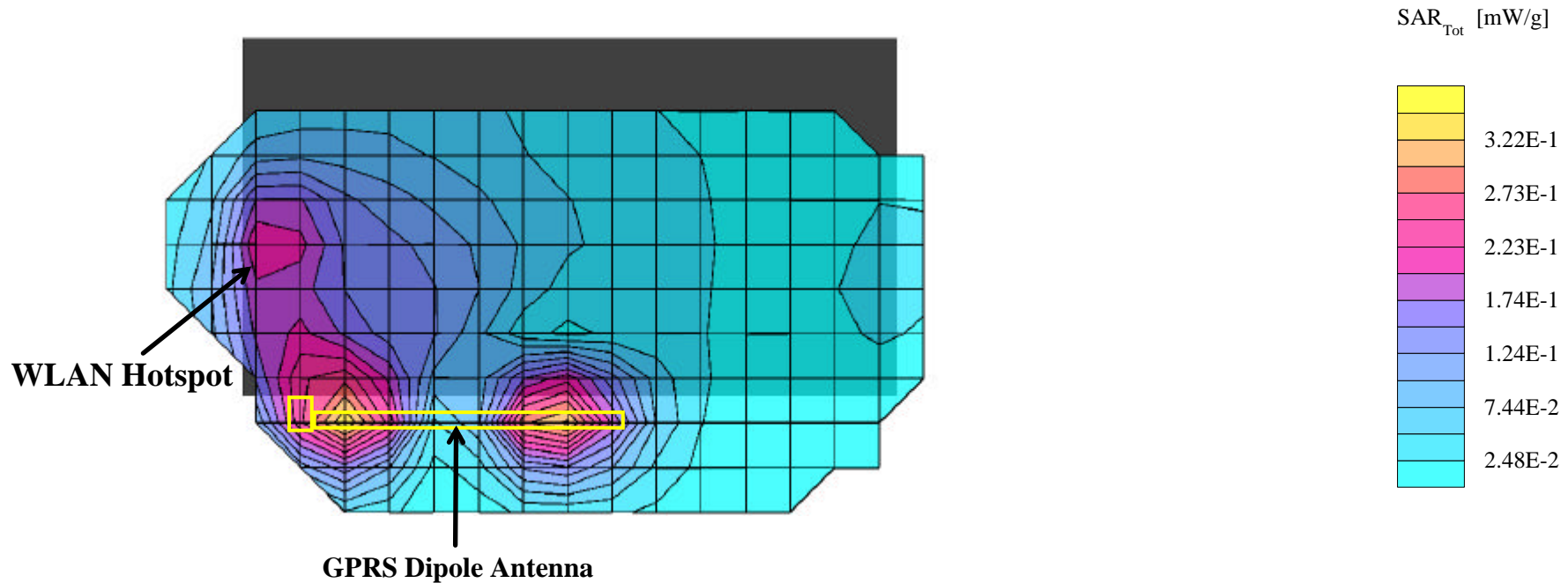
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SAM Phantom; Flat Section; Position: (0°,0°)  
 Probe: ET3DV6 - SN1387; ConvF(4.60,4.60,4.60); Crest factor: 1.0  
 2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 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





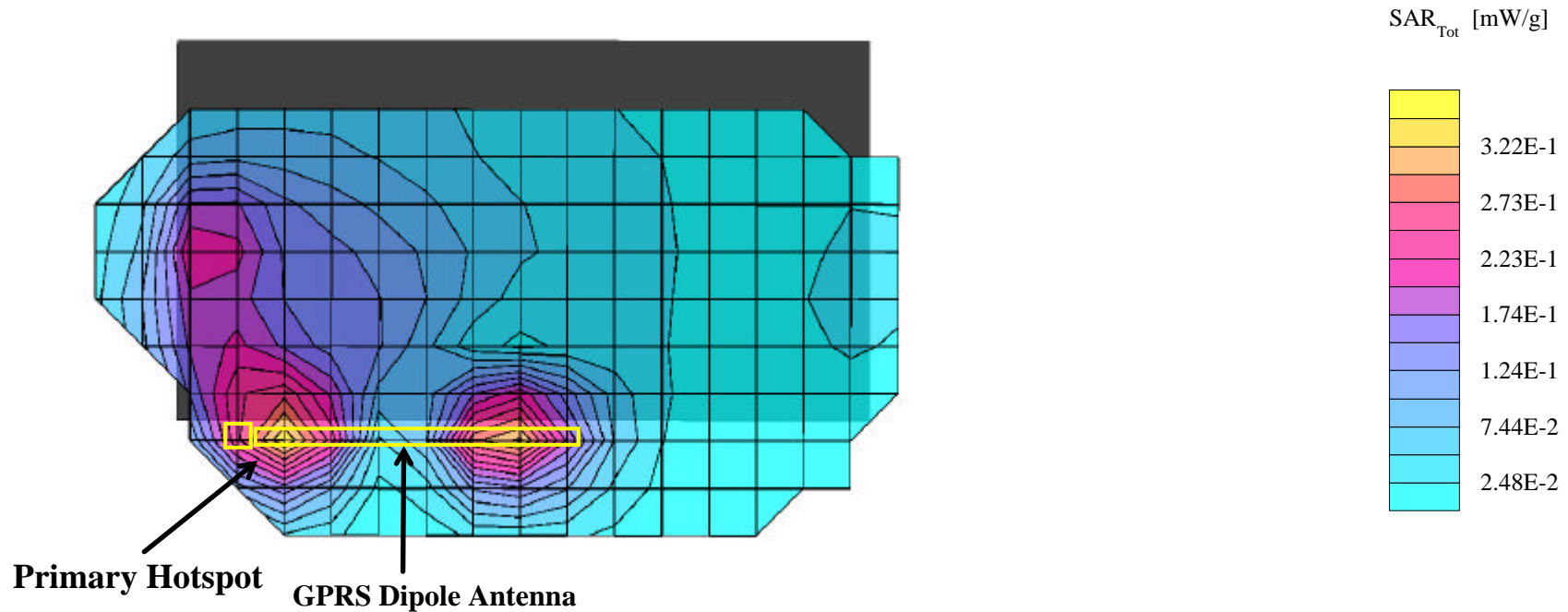
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 2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0  
 Cube 5x5x7  
 SAR (1g): 0.314 mW/g, SAR (10g): 0.186 mW/g

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  
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 PCS GPRS Mode

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### Primary Hotspot Evaluation



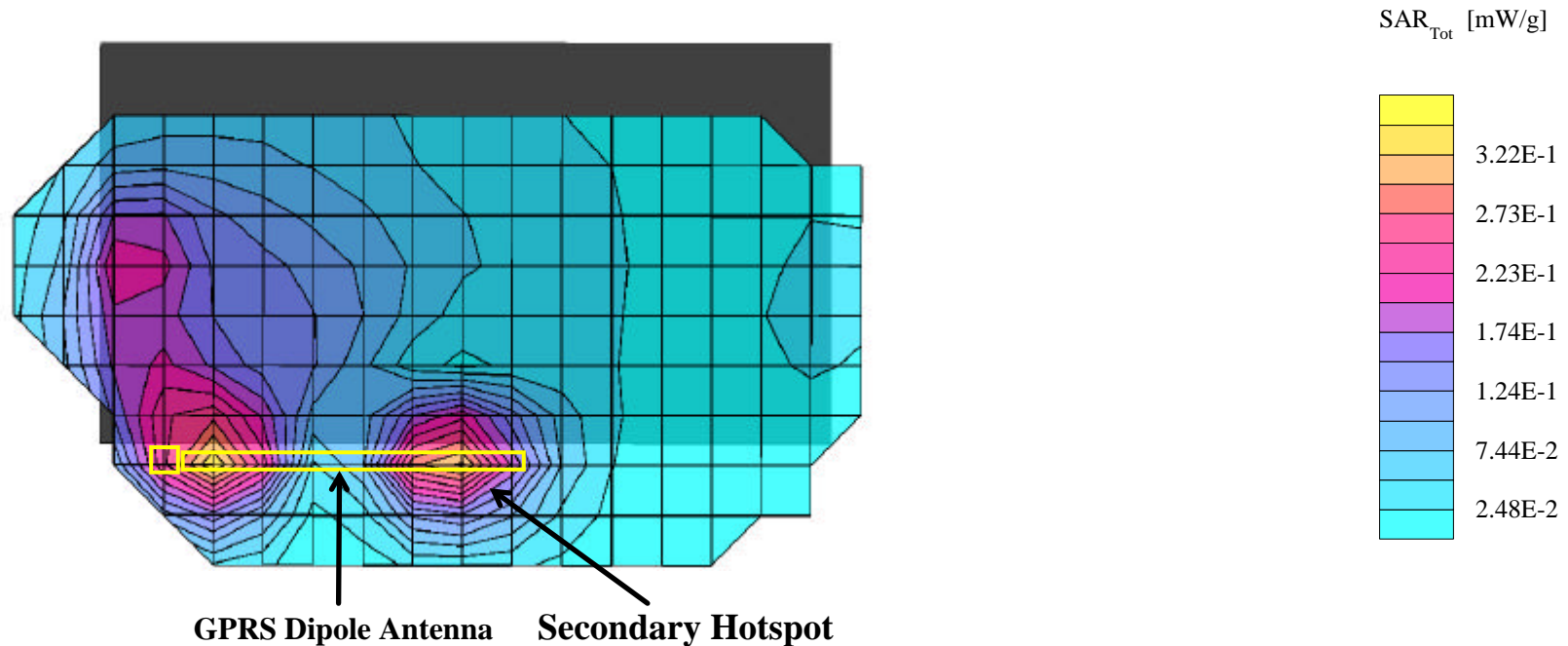
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 2450 MHz Muscle:  $\sigma = 2.00$  mho/m  $\epsilon_r = 47.5$   $\rho = 1.00$  g/cm<sup>3</sup>  
 Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0  
 Cube 5x5x7  
 SAR (1g): 0.297 mW/g, SAR (10g): 0.176 mW/g

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/cm<sup>3</sup>

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  
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

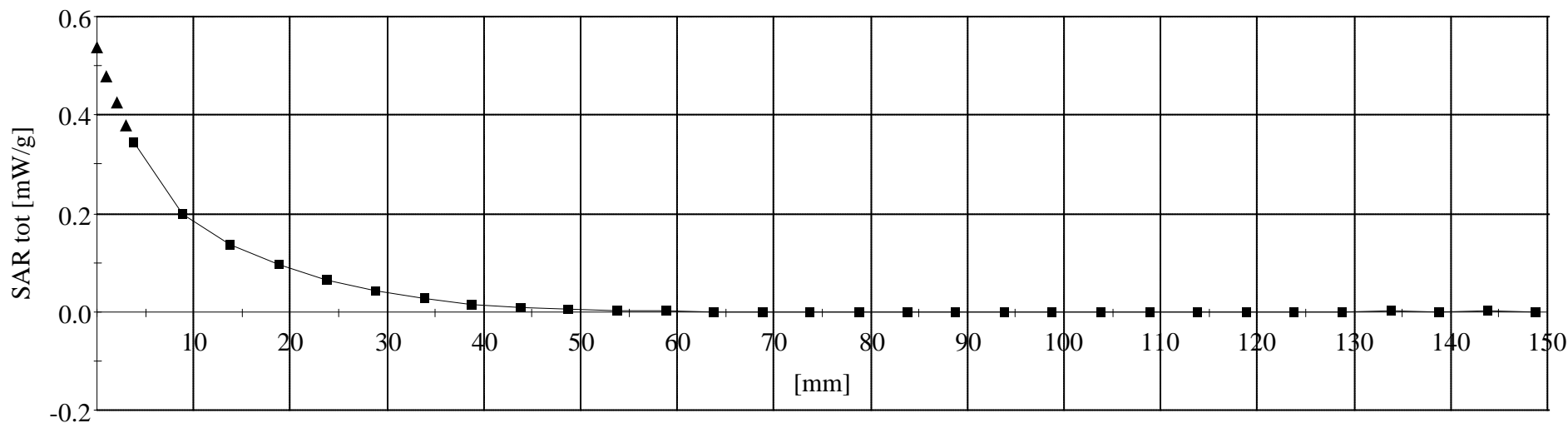
**Simultaneous Transmit - WLAN & GPRS**

Mid Channel [1880 MHz]

Conducted Power: 27.9 dBm

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

Date Tested: April 29, 2003



# 2450MHz EUT Evaluation (Body)

## Measured Fluid Dielectric Parameters (Muscle)

April 29, 2003

Frequency	e'	e''
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