February 12, 2004

Federal Communications Commission
Equipment Approval Services
7435 Oakland Mills Road
Columbia, MD 21046
Attn: Stan Lyles

**SUBJECT: Itronix Corporation**
**FCC ID: KBCIX260MPIA555BT**
**731 Confirmation No.: EA788716**
**Correspondence Ref. No.: 26295**

Dear Stan:

Submitted on behalf of Itronix Corp. is our response to your e-mail dated January 29, 2004 requesting additional information for the subject application.

1. Please find attached the evaluated body SAR test data for the bottom of the Laptop PC with the co-located WLAN, Bluetooth, and PCS CDMA modem transmitting simultaneously (worst-case configuration).
2. Please find attached the original scans for 2450 MHz and 1900 MHz fluids with the SAR scale adjusted to the same maximum value for comparison between the WLAN and PCS CDMA field contours. Also attached are scans for the 2450 MHz and 835 MHz fluids to show comparison between the WLAN and Cellular CDMA field contours. Please note that the 835 MHz scan is the original scan using DASY3 software, however the corresponding 2450 MHz scan was not previously performed, and therefore was re-evaluated with the new DASY4 software. In addition, due to the differences in DASY 3 and 4 software, the maximum value displayed on the scales is not the same, although the maximum value set is the same.

If you have any further questions regarding the above, please do not hesitate to contact me.

Sincerely,

Russell Pipe
Senior Compliance Engineer
Celltech Labs Inc.

cc: Itronix Corporation

# Feb 02, 2004 - 2450 MHz - Bottom of Laptop PC - Co-Located Transmit

DUT: Itronix Corporation; FCC ID: KBCIX260MPIA555BT; Model: IX260; Serial: ZZGEG3135ZZ1409

Type: Rugged Laptop PC with co-located WLAN, Bluetooth, & Dual-Band CDMA Modem

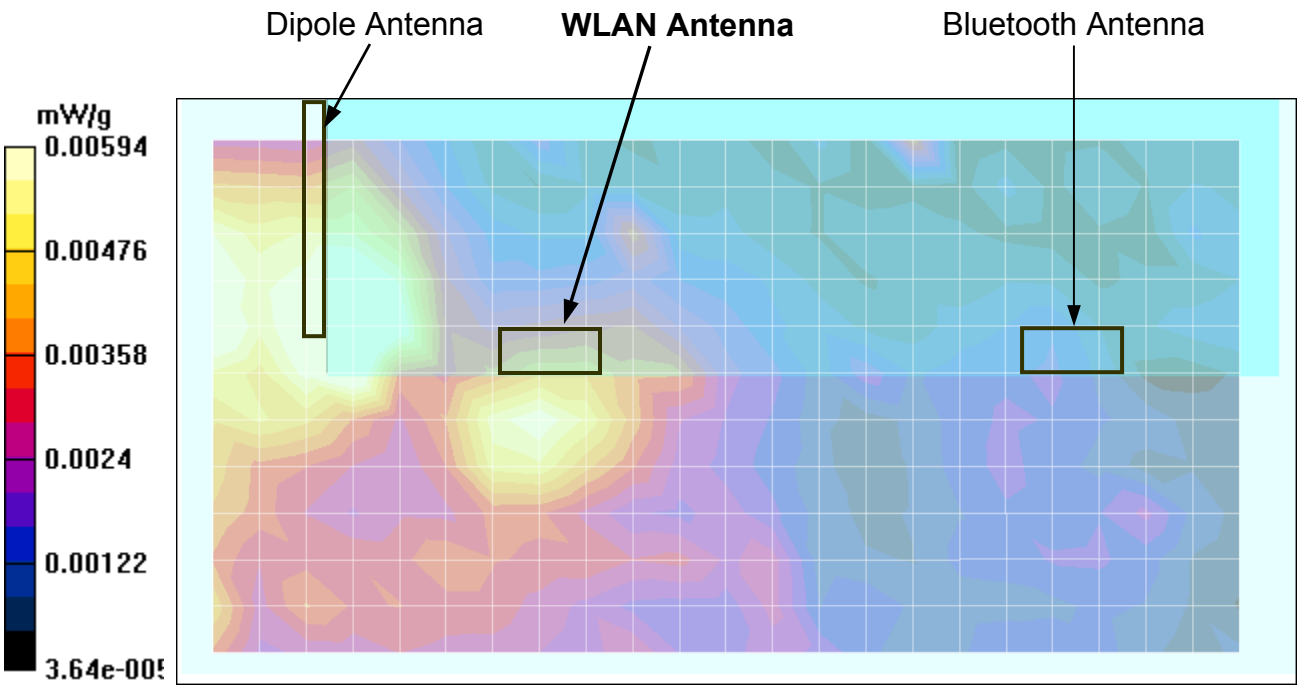
Ambient Temp: 25.0ºC; Fluid Temp: 23.5ºC; Barometric Pressure: 100.9 kPa; Humidity: 35%

Communication System: DSSS WLAN
Frequency: 2412 MHz; Duty Cycle: 1:1
RF Output Power: 21.2 dBm (Conducted)
Medium: M2450 ($\sigma$ = 1.97 mho/m; $\varepsilon_r$ = 50.2; $\rho$ = 1970 kg/m$^3$)

- Probe: ET3DV6 - SN1387; ConvF(4.6, 4.6, 4.6); Calibrated: 26/02/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn353; Calibrated: 19/12/2003
- Phantom: Barski Planar; Type: Fiberglas; S/N: 03-01
- Measurement SW: DASY4, V4.2 Build 12; Postprocessing SW: SEMCAD, V1.8 Build 94

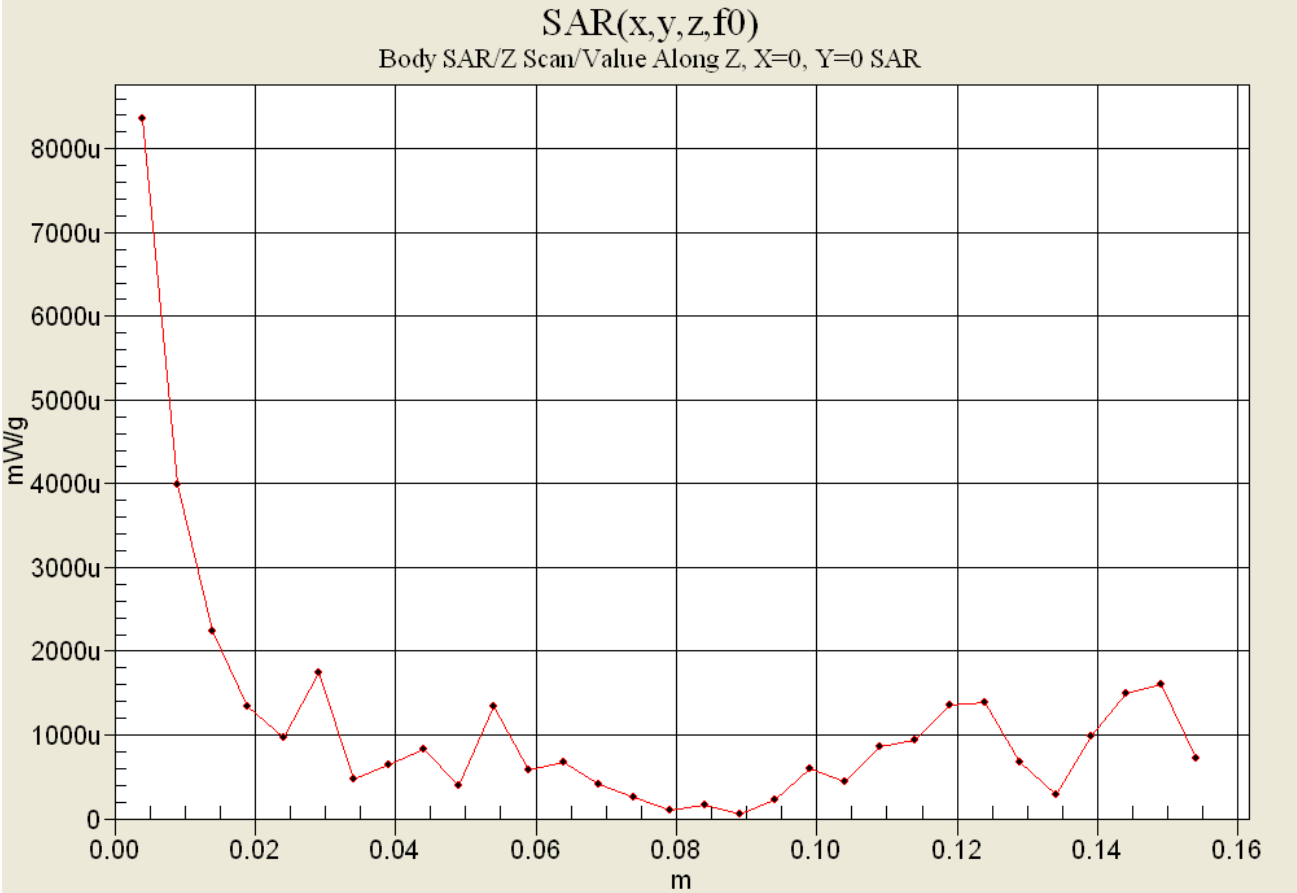
**WLAN 2412 MHz, PCS CDMA 1880 MHz, Bluetooth 2441 MHz - Bottom of Laptop/Area Scan (12x24x1):**
Measurement grid: dx=15mm, dy=15mm

**WLAN 2412 MHz, PCS CDMA 1880 MHz, Bluetooth 2441 MHz - Bottom of Laptop/Zoom Scan (7x7x7)/Cube 2:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.010 W/kg
**SAR(1 g) = 0.00605 mW/g; SAR(10 g) = 0.00391 mW/g**
Reference Value = 1.02 V/m




**Coarse Scan to Evaluate Zoom Scan**

## Feb 02, 2004 - Z-Axis Scan




**Note:** As a

result of the low SAR in this device position, ambient noise entered into the SAR measurement of the Z-axis scan (from 2 - 15 cm) as the probe moved away from the RF source.

# Feb 02, 2004 - 2450 MHz - Bottom of Laptop PC - Co-Located Transmit

DUT: Itronix Corporation; FCC ID: KBCIX260MPIA555BT; Model: IX260; Serial: ZZGEG3135ZZ1409

Type: Rugged Laptop PC with co-located WLAN, Bluetooth, & Dual-Band CDMA Modem

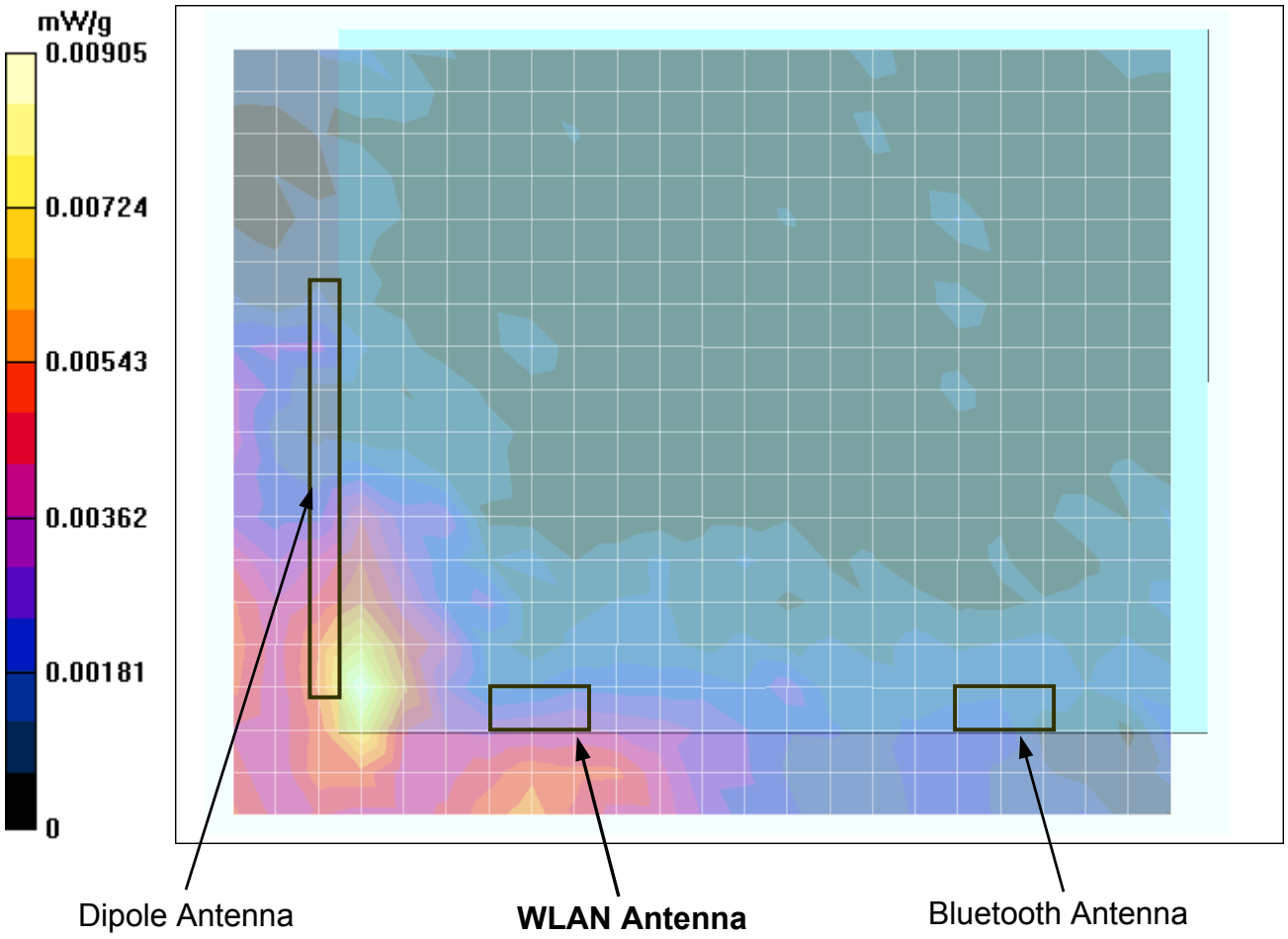
Ambient Temp: 25.0ºC; Fluid Temp: 23.5ºC; Barometric Pressure: 100.9 kPa; Humidity: 35%

Communication System: DSSS WLAN
Frequency: 2412 MHz; Duty Cycle: 1:1
RF Output Power: 21.2 dBm (Conducted)
Medium: M2450 ($\sigma$ = 1.97 mho/m; $\varepsilon_r$ = 50.2; $\rho$ = 1970 kg/m$^3$)

- Probe: ET3DV6 - SN1387; ConvF(4.6, 4.6, 4.6); Calibrated: 26/02/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn353; Calibrated: 19/12/2003
- Phantom: Barski Planar; Type: Fiberglas; S/N: 03-01
- Measurement SW: DASY4, V4.2 Build 12; Postprocessing SW: SEMCAD, V1.8 Build 94

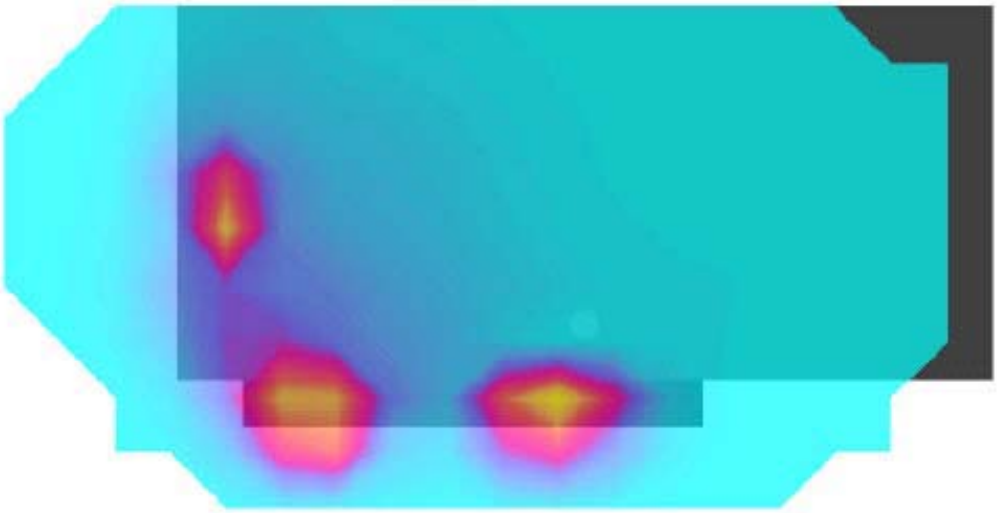
**WLAN 2412 MHz, PCS CDMA 1880 MHz, Bluetooth 2441 MHz - Bottom of Laptop - Area Scan Only/Area Scan (19x24x1):**
Measurement grid: dx=15mm, dy=15mm
Reference Value = 0.512 V/m
Maximum value of SAR = 0.00905 mW/g

## Coarse Scan to Show Remaining Area of Laptop Bottom



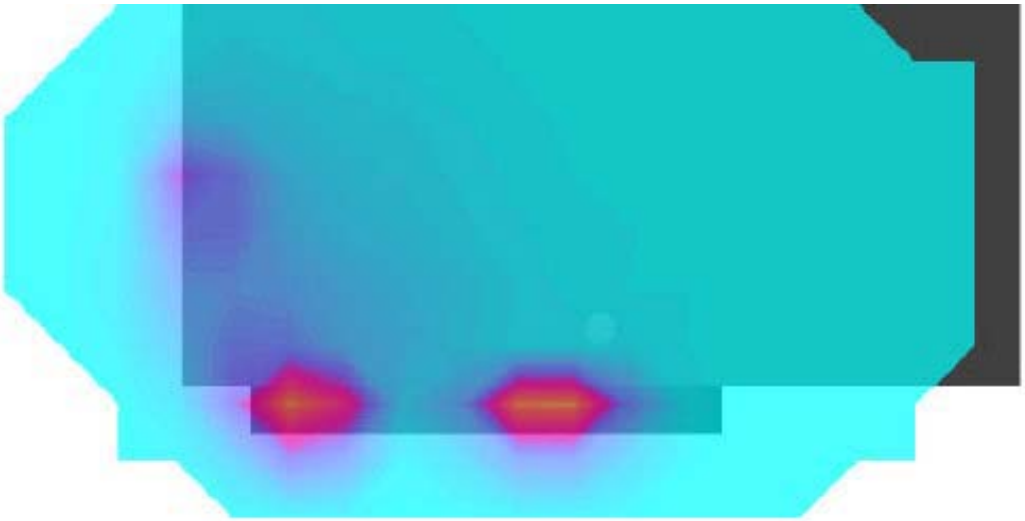
## 2450 MHz Muscle Fluid with WLAN, Bluetooth, & PCS CDMA simultaneously transmitting to show contour comparison

Back of LCD - Display Closed (CDMA Dipole Antenna Parallel to Planar Phantom - Stowed Position)
0.0 cm Separation Distance from Back of LCD to Planar Phantom
IX260 Rugged Laptop PC
Cisco DSSS WLAN Card MPI-350 Mini-PCI with Internal Antenna
Co-located with Sierra Wireless AirCard 555 Dual Band CDMA Modem Card (PCS) with External Dipole Antenna
and Mitsumi WML-C11N Bluetooth Transmitter with Internal Antenna
Simultaneous Transmit with co-located WLAN, CDMA, and Bluetooth Transmitters
DSSS Mode
Channel 1 (2412 MHz)
Conducted Power: 18.80 dBm
Ambient Temp: 23.9°C; Fluid Temp: 23.9°C
Date Tested: August 29, 2003




## 1900 MHz Muscle Fluid with PCS CDMA, WLAN, & Bluetooth simultaneously transmitting to show contour comparison

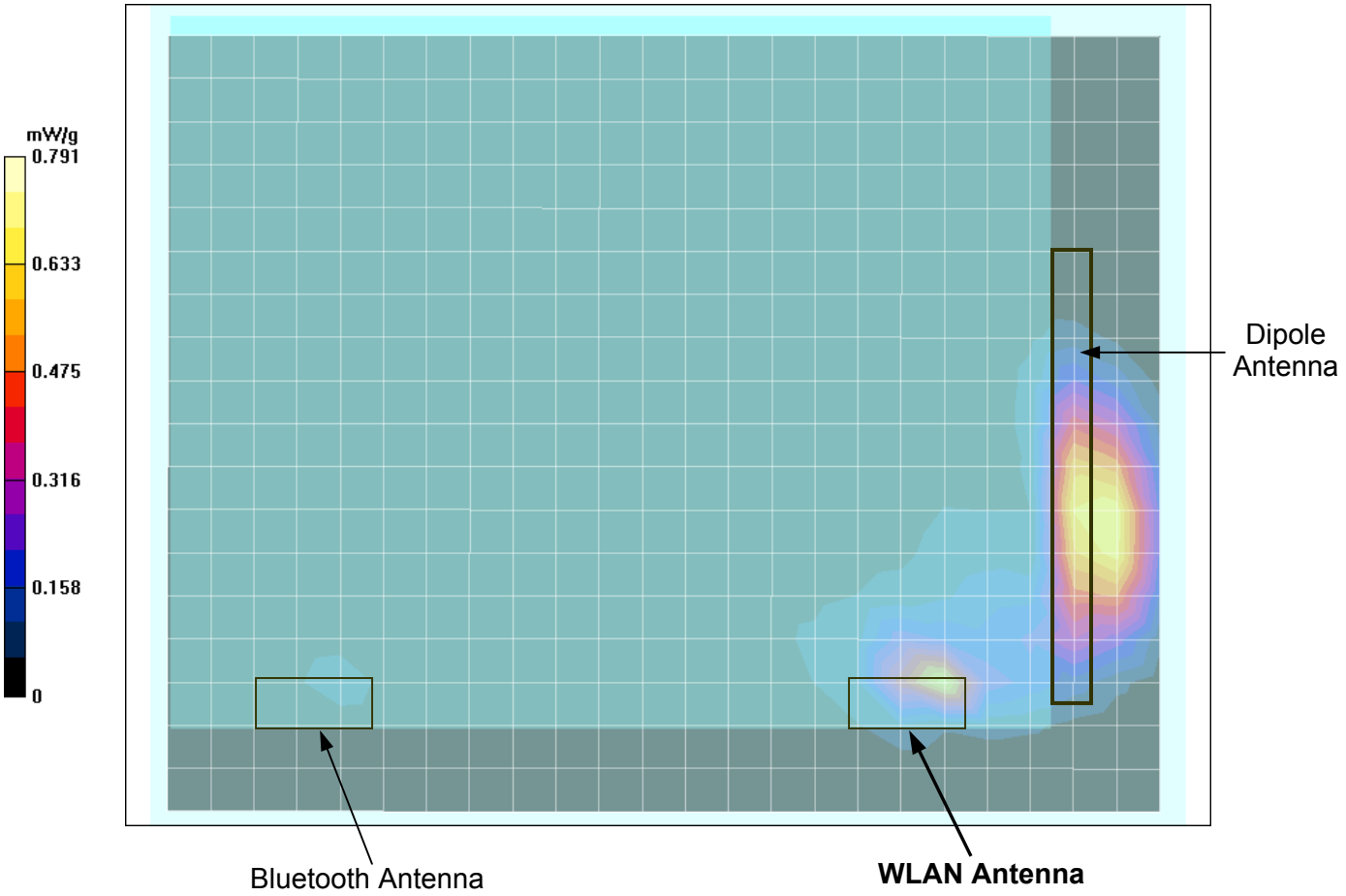
Back of LCD (Display Closed) - CDMA Dipole Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD to Planar Phantom
IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 Dual Band CDMA Modem Card
Co-located with Cisco MPI-350 Mini-PCI DSSS WLAN Card with Internal Antenna
and Mitsumi WML-C11N Bluetooth Transmitter with Internal Antenna
PCS CDMA Mode
Simultaneous Transmit with co-located DSSS WLAN and Bluetooth Transmitters
Channel 600 [1880.00 MHz]
Conducted Power: 23.27 dBm
Ambient Temp: 24.7°C; Fluid Temp: 22.4°C
Date Tested: August 29, 2003



## 2450 MHz Muscle Fluid with WLAN, Bluetooth, & Cellular CDMA simultaneously transmitting to show contour comparison

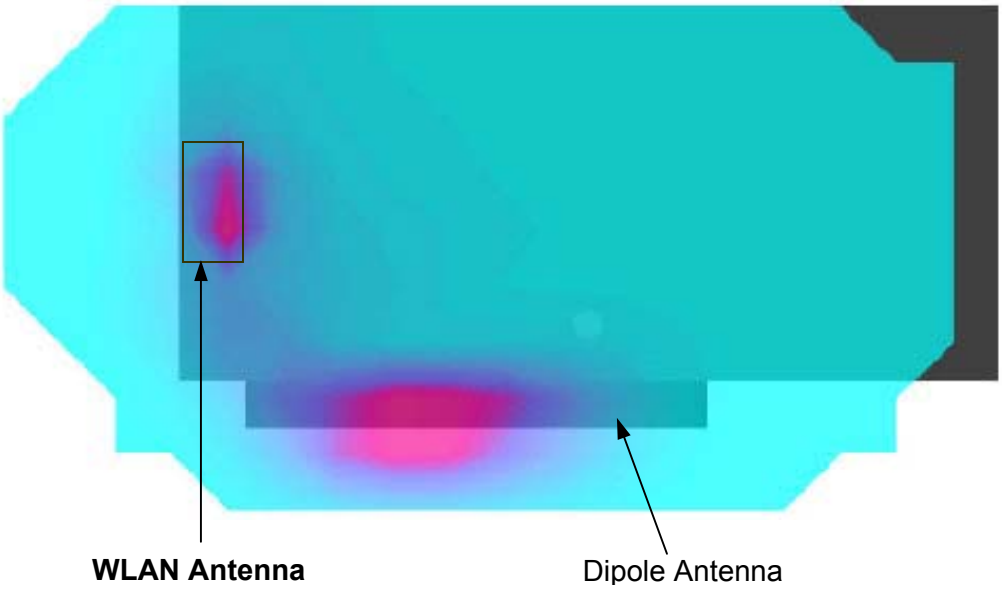
Phantom: Barski Planar; Type: Fiberglas; S/N: 03-01
Probe: ET3DV6 – SN1387; ConvF(4.6,4.6,4.6); Crest factor: 1.0
Muscle 2450 MHz: $\sigma$ = 1.97 mho/m; $\varepsilon_r$ = 50.2 mho/m; $\rho$ = 1970 kg/m$^3$
Coarse: Dx = 5 mm, Dy = 5 mm, Dz = 5 mm
Cube 7x7x7
SAR (1g): 0.710 mW/g, SAR (10g): 0.359 mW/g

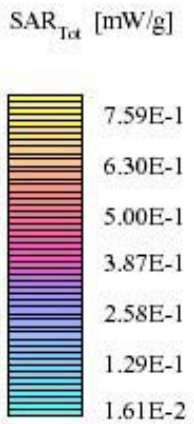
Back of LCD - Display Closed (CDMA Dipole Antenna Parallel to Planar Phantom - Stowed Position)
0.0 cm Separation Distance from Back of LCD to Planar Phantom
IX260 Rugged Laptop PC
Cisco DSSS WLAN Card MPI-350 Mini-PCI with Internal Antenna
Co-located with Sierra Wireless AirCard 555 Dual Band CDMA Modem with External Dipole Antenna
& Mitsumi WML-C11N Bluetooth Transmitter with Internal Antenna
WLAN Simultaneous Transmit with co-located Cellular CDMA & Bluetooth Transmitters
WLAN DSSS Mode
Channel 1 (2412 MHz)
Conducted Power: 21.2 dBm
Ambient Temp: 25.0ºC; Fluid Temp: 23.5ºC; Barometric Pressure: 100.9 kPa; Humidity: 35%
Date Tested: February 02, 2004



**835 MHz Muscle Fluid with Cellular CDMA, WLAN, & Bluetooth simultaneously transmitting for contour comparison**

Back of LCD (Display Closed) - CDMA Dipole Antenna Parallel to Planar Phantom (Stowed Position)
0.0 cm Separation Distance from Back of LCD to Planar Phantom
IX260 Rugged Laptop PC
with Sierra Wireless AirCard 555 Dual Band CDMA Modem Card
Co-located with Cisco MPI-350 Mini-PCI DSSS WLAN Card with Internal Antenna
and Mitsumi WML-C11N Bluetooth Transmitter with Internal Antenna
Cellular CDMA Mode
Simultaneous Transmit with colocated CDMA, DSSS WLAN, and Bluetooth Transmitters
Channel 363 [835.89 MHz]
Conducted Power: 23.05 dBm
Ambient Temp: 23.9°C; Fluid Temp: 23.2°C
Date Tested: August 28, 2003



# 2450 MHz DUT Evaluation (Body)

## Measured Fluid Dielectric Parameters (Muscle)

February 02, 2004

| Frequency | e' | e" |
|---|---|---|
| 2.350000000 GHz | 50.5255 | 14.0376 |
| 2.360000000 GHz | 50.4971 | 14.0980 |
| 2.370000000 GHz | 50.4824 | 14.1287 |
| 2.380000000 GHz | 50.4448 | 14.1507 |
| 2.390000000 GHz | 50.4028 | 14.1677 |
| 2.400000000 GHz | 50.3543 | 14.1751 |
| 2.410000000 GHz | 50.3084 | 14.2017 |
| 2.420000000 GHz | 50.2550 | 14.2631 |
| 2.430000000 GHz | 50.2299 | 14.2986 |
| 2.440000000 GHz | 50.1833 | 14.3750 |
| 2.450000000 GHz | 50.1619 | 14.4469 |
| 2.460000000 GHz | 50.1217 | 14.4990 |
| 2.470000000 GHz | 50.1105 | 14.5526 |
| 2.480000000 GHz | 50.0986 | 14.5896 |
| 2.490000000 GHz | 50.0536 | 14.6278 |
| 2.500000000 GHz | 50.0380 | 14.6415 |
| 2.510000000 GHz | 49.9750 | 14.6453 |
| 2.520000000 GHz | 49.9120 | 14.6861 |
| 2.530000000 GHz | 49.8600 | 14.7142 |
| 2.540000000 GHz | 49.8125 | 14.7739 |
| 2.550000000 GHz | 49.7843 | 14.8247 |

# 2450 MHz System Performance Check

## Measured Fluid Dielectric Parameters (Brain)

February 02, 2004

| Frequency | e' | e" |
|---|---|---|
| 2.350000000 GHz | 37.8546 | 13.5836 |
| 2.360000000 GHz | 37.8125 | 13.6219 |
| 2.370000000 GHz | 37.7982 | 13.6523 |
| 2.380000000 GHz | 37.7517 | 13.6616 |
| 2.390000000 GHz | 37.7212 | 13.6832 |
| 2.400000000 GHz | 37.6784 | 13.6984 |
| 2.410000000 GHz | 37.6292 | 13.7080 |
| 2.420000000 GHz | 37.5583 | 13.7543 |
| 2.430000000 GHz | 37.5298 | 13.7945 |
| 2.440000000 GHz | 37.4671 | 13.8349 |
| 2.450000000 GHz | 37.4185 | 13.8917 |
| 2.460000000 GHz | 37.3828 | 13.9193 |
| 2.470000000 GHz | 37.3638 | 13.9799 |
| 2.480000000 GHz | 37.3423 | 13.9993 |
| 2.490000000 GHz | 37.3205 | 14.0272 |
| 2.500000000 GHz | 37.2812 | 14.0560 |
| 2.510000000 GHz | 37.2321 | 14.0551 |
| 2.520000000 GHz | 37.1762 | 14.0846 |
| 2.530000000 GHz | 37.1314 | 14.1135 |
| 2.540000000 GHz | 37.0585 | 14.1334 |
| 2.550000000 GHz | 37.0161 | 14.1826 |

# Feb 02, 2004 - System Performance Check - 2450 MHz Dipole

DUT: Dipole 2450 MHz; Model: D2450V2; Type: System Performance Check; Serial: 150

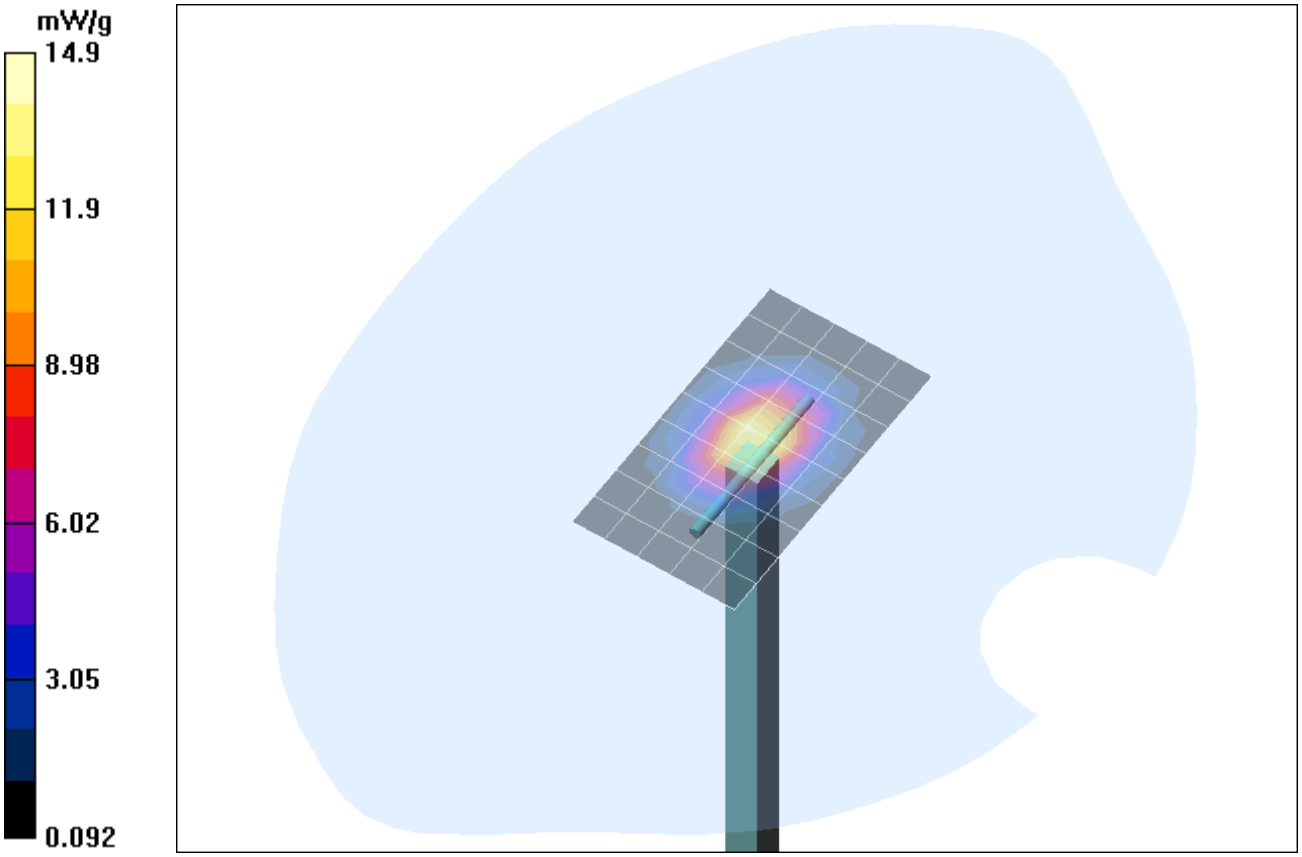
Ambient Temp: 25.0ºC; Fluid Temp: 24.0ºC; Barometric Pressure: 100.9 kPa; Humidity: 35%

Forward Conducted Power: 250 mW
Communication System: CW
Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL2450 ($\sigma$ = 1.89 mho/m; $\varepsilon_r$ = 37.4; $\rho$ = 1000 kg/m$^3$)

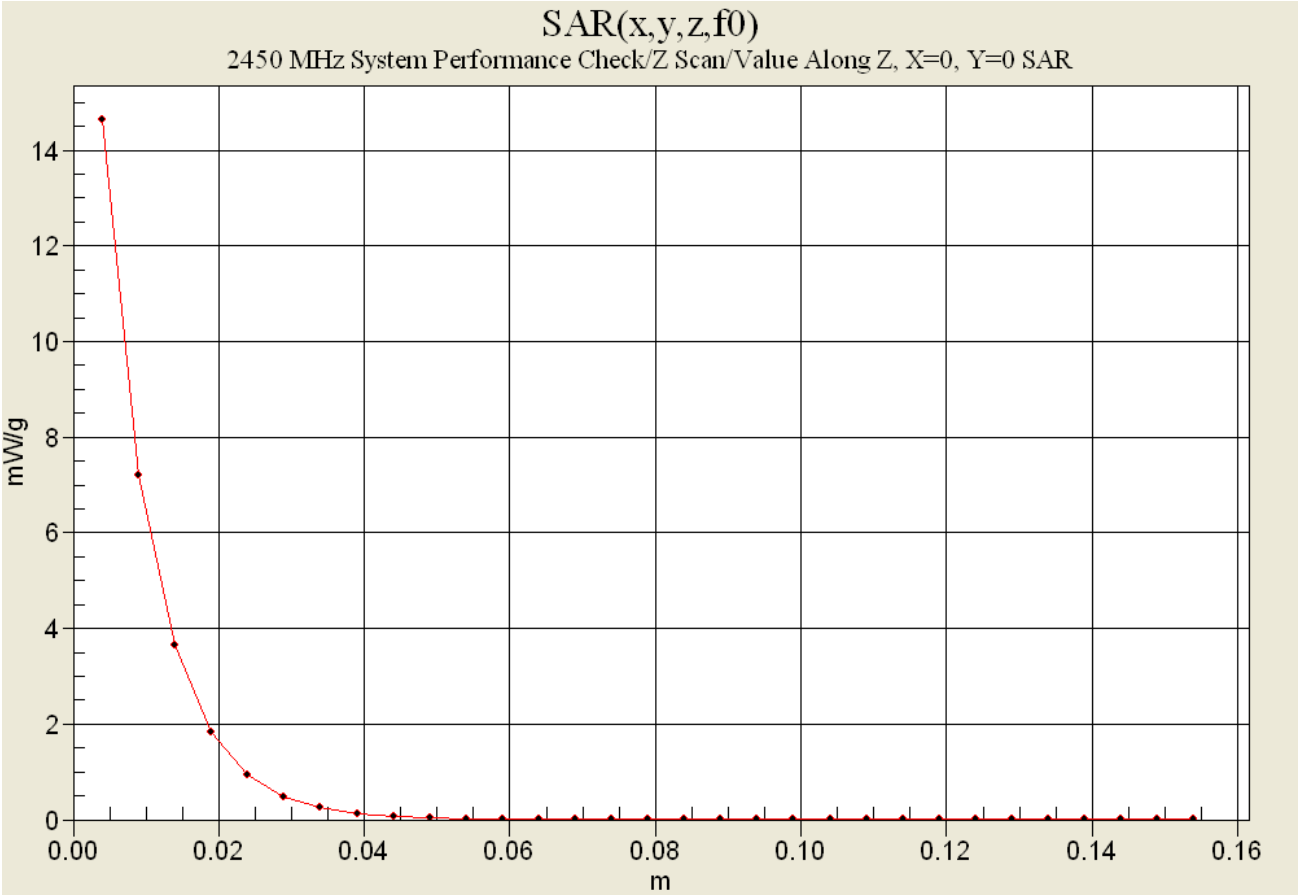
- Probe: ET3DV6 - SN1387; ConvF(5, 5, 5); Calibrated: 26/02/2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn353; Calibrated: 19/12/2003
- Phantom: SAM front; Type: Fiberglas; Serial: 1033
- Measurement SW: DASY4, V4.2 Build 12; Postprocessing SW: SEMCAD, V1.8 Build 94

**2450 MHz System Performance Check/Area Scan (6x10x1):**
Measurement grid: dx=10mm, dy=10mm

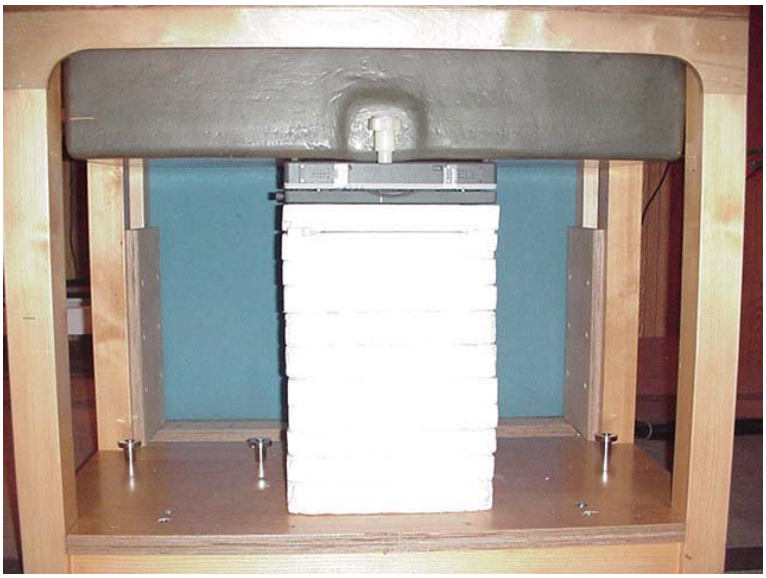
**2450 MHz System Performance Check/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 27.4 W/kg
**SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.12 mW/g**
Reference Value = 93.1 V/m
Power Drift = -0.1 dB

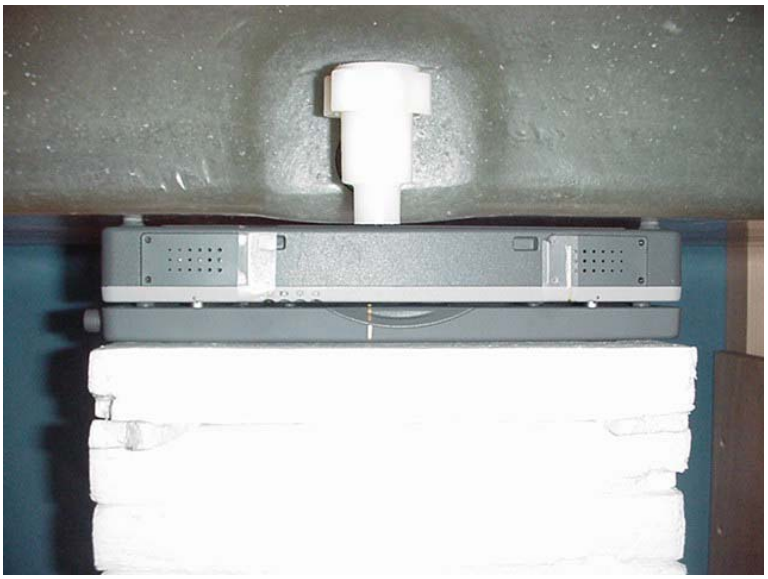


## Feb 02, 2004 - Z-Axis Scan

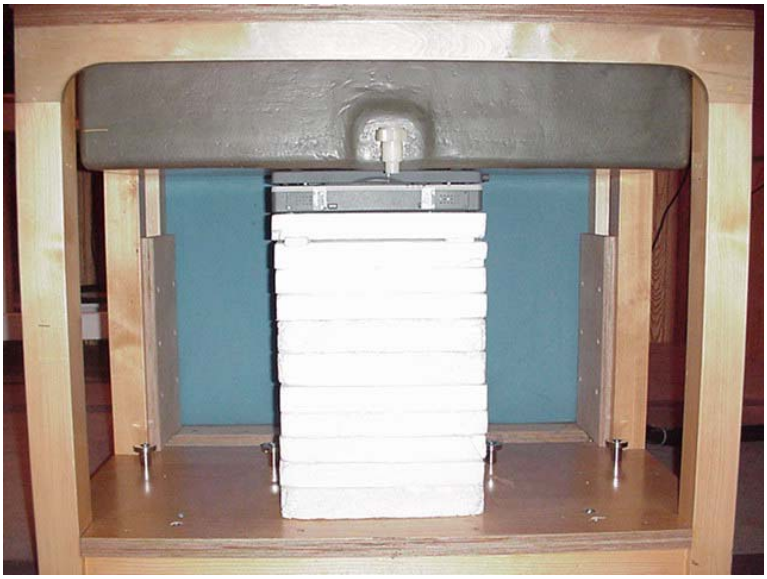


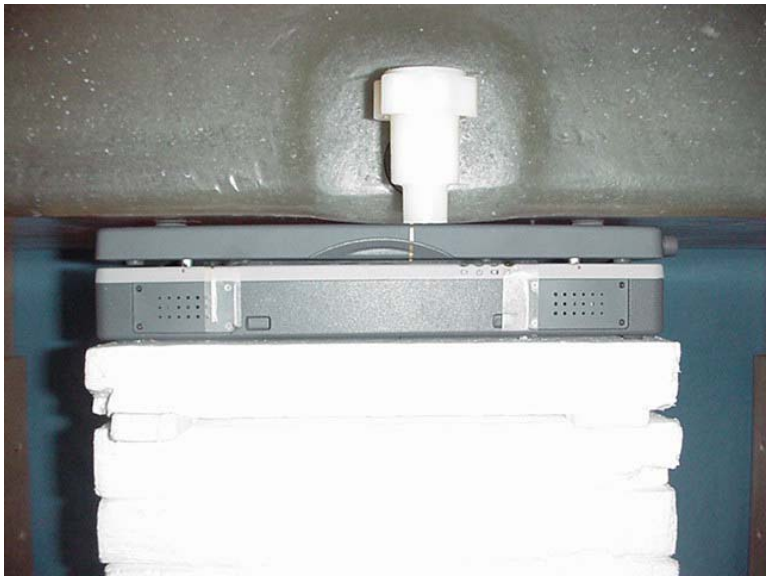
**Feb 02, 2004 - SAR Test Setup Photos - Bottom of Laptop PC - Planar Phantom**





## Feb 02, 2004 - SAR Test Setup Photos - Back of LCD Display - Planar Phantom





2378 Westlake Road
Kelowna, B.C. Canada
V1Z-2V2

BARSKI INDUSTRIES (1985) LTD.

Ph. # 250-769-6848
Fax # 250-769-6334
E-mail: barskiind@shaw.ca
Web: www.bcfiberglass.com

**FIBERGLASS FABRICATORS**

# Certificate of Conformity

Item : Flat Planar Phantom Unit # 03-01
Date: June 16, 2003
Manufacturer: Barski Industries (1985 Ltd)

| Test | Requirement | Details |
|---|---|---|
| Shape | Compliance to geometry according to drawing | Supplied CAD drawing |
| Material Thickness | Compliant with the requirements | 2mm +/- 0.2mm in measurement area |
| Material Parameters | Dielectric parameters for required frequencies Based on Dow Chemical technical data | 100 MHz-5 GHz Relative permittivity<5 Loss Tangent<0.05 |

Conformity

Based on the above information, we certify this product to be compliant to the requirements specified.

Signature: 

Daniel Chailler

**Fiberglass Planar Phantom - Top View**

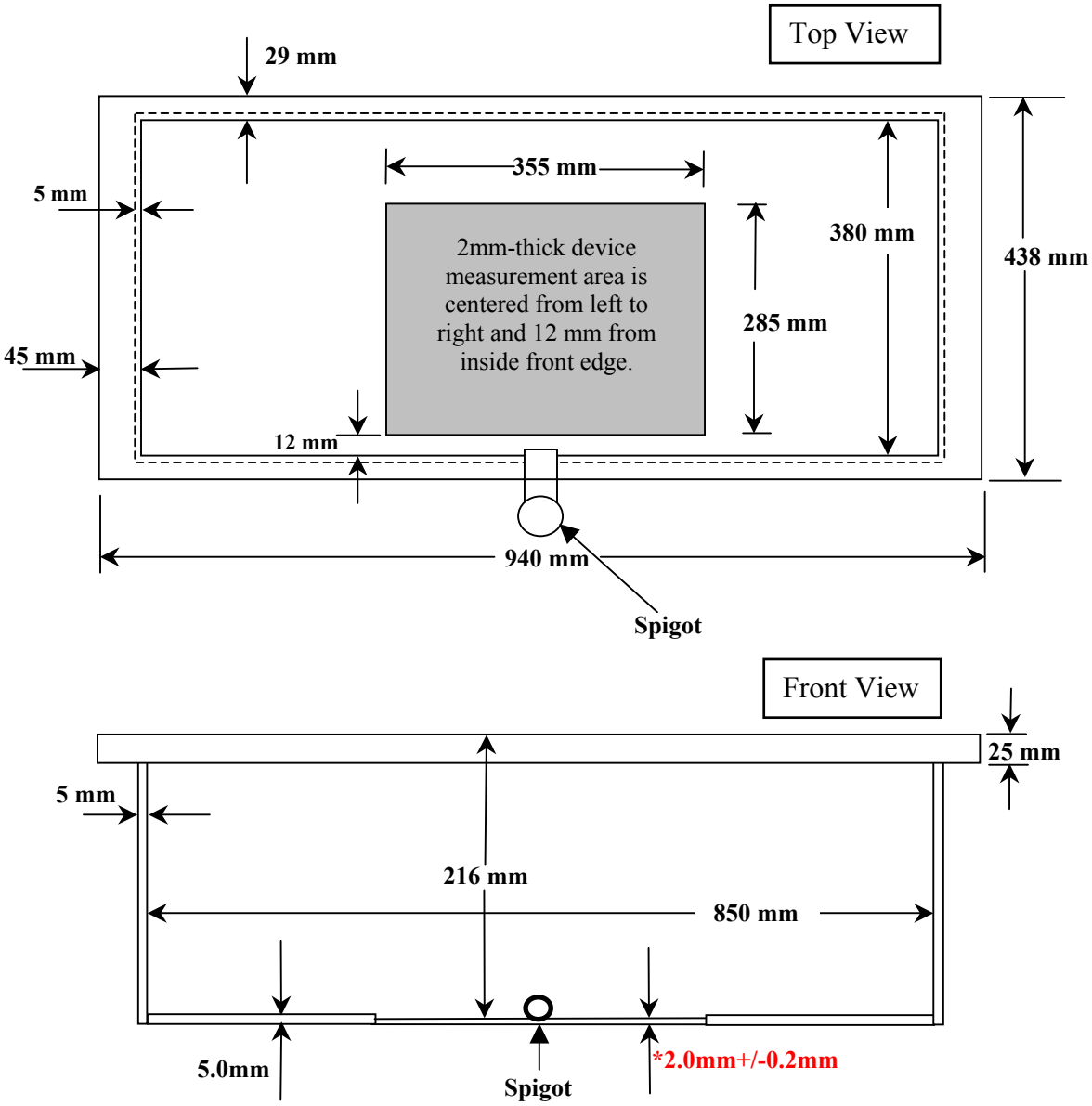
**Fiberglass Planar Phantom - Front View**

**Fiberglass Planar Phantom - Back View**

**Fiberglass Planar Phantom - Bottom View**

# Dimensions of Fiberglass Planar Phantom

**(Manufactured by Barski Industries Ltd. - Unit# 03-01)**




**Note: Measurements that aren't repeated for the opposite sides are the same as the side measured. This drawing is not to scale.**