



	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	


SAR TEST REPORT (FCC)

RF EXPOSURE EVALUATION	SPECIFIC ABSORPTION RATE	
APPLICANT/ MANUFACTURER	GENERAL DYNAMICS ITRONIX CORPORATION	
DEVICE UNDER TEST (DUT)	TABLET PC	
INTERNAL TRANSMITTER(S)	802.11a/b/g/n WLAN	
	BLUETOOTH Ver.2.0+EDR	
	RFID (13.56 MHz)	
DEVICE MODEL(S)	GD3000	
DEVICE IDENTIFIER(S)	FCC ID: KBC-GD3000	
APPLICATION TYPE	CLASS II PERMISSIVE CHANGE - Add Co-located WWAN & Antenna (Sierra Wireless Gobi2000 FCC ID: N7NGOBI2 w/ PIFA/PCB Antenna)	
STANDARD(S) APPLIED	FCC 47 CFR §2.1093	
PROCEDURE(S) APPLIED	FCC KDB 447498 D01v04	FCC KDB 178919 D01v04r04
	FCC KDB 941225 D01v02	FCC KDB 616217 D01v01r01
	FCC OET Bulletin 65, Supplement C (01-01)	
	IEEE 1528-2003	
FCC DEVICE CLASSIFICATION(S)	Digital Transmission System (DTS)	47 CFR §15 Subpart C
	Unlicensed National Information Infrastructure Transmitter (NII)	47 CFR §15 Subpart E
	Part 15 Spread Spectrum Transmitter (DSS)	47 CFR §15 Subpart C
	Part 15 Low Power Communication Device Transmitter (DXX)	47 CFR §15 Subpart C
RF EXPOSURE CATEGORY	General Population / Uncontrolled	
RF EXPOSURE EVALUATION(S)	Body (Lap-held)	
DATE OF SAMPLE RECEIPT	May 18, 2010	
DATE(S) OF EVALUATION(S)	May 21, 2010	
TEST REPORT SERIAL NO.	051810KBC-T1019-S24M	
TEST REPORT REVISION NO.	Revision 1.0	Initial Release
	July 02, 2010	
TEST REPORT SIGNATORIES	Testing Performed By	Test Report Prepared By
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TEST LAB AND LOCATION	Celltech Compliance Testing and Engineering Laboratory	
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TEST LAB CONTACT INFO.	Tel.: 250-765-7650	Fax: 250-765-7645
	info@celltechlabs.com	www.celltechlabs.com
TEST LAB ACCREDITATION(S)	ISO/IEC 17025:2005 (A2LA Test Lab Certificate No. 2470.01)	

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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DECLARATION OF COMPLIANCE - SAR RF EXPOSURE EVALUATION (FCC/IC)

Test Lab Information	Name	CELLTECH LABS INC.	Address	21-364 Lougheed Road, Kelowna B.C. V1X 7R8 Canada			
Applicant Information	Name	GD ITRONIX CORPORATION	Address	509 North Sullivan - C441, Spokane Valley, WA 99037 USA			
Standard(s) Applied	FCC	47 CFR §2.1093					
Procedure(s) Applied	FCC	OET Bulletin 65, Supplement C (01-01)					
	IEEE	1528-2003					
Device Classification(s)	WLAN	DTS - Digital Transmission System (Part 15 Subpart C)					
		NII - Unlicensed National Information Infrastructure Transmitter (Part 15 Subpart E)					
	Bluetooth	DSS - Part 15 Spread Spectrum Transmitter (Part 15 Subpart C)					
	RFID	DXX - Part 15 Low-Power Communication Device Transmitter (Part 15 Subpart C)					
Device Identifier(s)	FCC ID:	KBC-GD3000					
Device Under Test (DUT)	Tablet PC						
Device Model(s)	GD3000						
User Display Orientations	180-degrees Landscape		90-Degrees Portrait		-90-Degrees Portrait		
Internal Transmitter(s)	802.11a/b/g/n WLAN		RFID (13.56 MHz)		Bluetooth Ver.2.0+EDR		
Application Type	Class II Permissive Change - Add co-location with WWAN Module* and PIFA/PCB diversity antenna (MAIN Tx/Rx, AUX Rx)						
	* Sierra Wireless Inc. Gobi2000 GPRS/EDGE/WCDMA/HSPA/EV-DO Mini-PCI Express Card (Modular FCC ID: N7NGOBI2)						
WWAN Co-Transmission	WWAN and Bluetooth						
Antenna-to-Antenna Distance	WWAN-WLAN = 5.3 cm		WWAN-Bluetooth = 12.0 cm		WWAN-RFID = 4.5 cm		
Antenna-to-Edge Distances	WWAN to Left Edge = 10.2 cm			WWAN to Right Edge = 10.7 cm			
	WWAN to Bottom Side = 1.3 cm			WWAN to Bottom Edge = 23.5 cm			
Test Sample Serial No.(s)	GD3000	SY0120000313 (Identical Prototype)					
Transmit Frequency Range(s)	Cell Band	824.2-848.8 MHz (GPRS/EDGE)		826.4-846.6 MHz (WCDMA/HSPA)		824.70-848.31 MHz (CDMA/EV-DO)	
	PCS Band	1850.2-1909.8 MHz (GPRS/EDGE)		1852.4-1907.5 MHz (WCDMA/HSPA)		1851.25-1908.75 MHz (CDMA/EV-DO)	
Max. RF Output Power Tested	Band	Mode	Frequency	Channel	dBm	Watts	Method
	Cellular	GPRS - 2 Uplink	836.6 MHz	190	32.3	1.70	Conducted (BAP)
		WCDMA - 12.2k RMC	836.4 MHz	4182	24.2	0.263	Conducted (MAP)
		CDMA 1xRTT RC3 (SO55)	836.52 MHz	384	24.2	0.263	Conducted (MAP)
	PCS	GPRS - 2 Uplink	1880.0 MHz	661	29.4	0.871	Conducted (BAP)
		WCDMA - 12.2k RMC	1880.0 MHz	9400	24.4	0.275	Conducted (MAP)
EV-DO Rel. 0 / Rev. A		1880.0 MHz	600	24.2	0.263	Conducted (MAP)	
Max. Duty Cycle(s) Tested	GPRS Cls 10	25% (2 Uplink Slots)	WCDMA	100%	EV-DO	100%	
Antenna Type(s) Tested	Internal WWAN (located in handle above LCD display)		MAIN Diversity	Type: PIFA/PCB	Part No.: TWT10GPPI01+G		
Power Source(s) Tested	Dual Lithium-Ion Rechargeable Battery (11.1V, 2.4Ah)						
Configuration(s) Tested	Bottom Side of Tablet PC (Touch position)						
Max. SAR Level(s) Evaluated	BODY (LAP)	0.264 W/kg	1g average	Cellular Band	FCC/IC SAR Limit	1.6 W/kg	1g average
		0.533 W/kg	1g average	PCS Band			
Celltech Labs Inc. declares under its sole responsibility that this wireless device is compliant with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC 47 CFR §2.1093 for the General Population / Uncontrolled Exposure environment. The device was tested in accordance with the measurement standards and procedures specified in FCC OET Bulletin 65, Supplement C (Edition 01-01) and IEEE Standard 1528-2003. All measurements were performed in accordance with the SAR system manufacturer recommendations.							
I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.							
The results and statements contained in this report pertain only to the device(s) evaluated.							
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Test Report Approved By			Sean Johnston	Lab Manager	Celltech Labs Inc.		

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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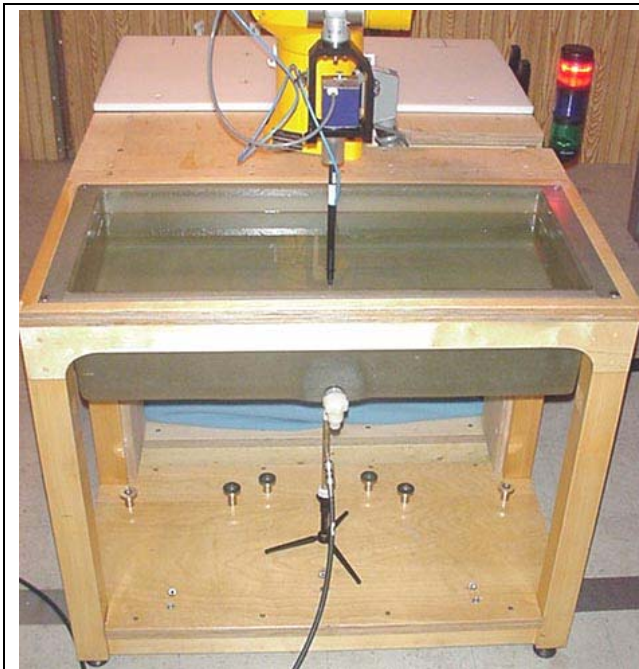
	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
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1.0 INTRODUCTION

This measurement report demonstrates that the General Dynamics Itronix Corporation Model: GD3000 Tablet PC, with the Class II Permissive Change(s) described in this report, complies with the SAR (Specific Absorption Rate) RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) for the General Population / Uncontrolled Exposure environment. The test procedures described in FCC OET Bulletin 65, Supplement C, Edition 01-01 and IEEE 1528-2003 were employed. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used, and the various provisions of the rules are included within this test report.

2.0 SAR MEASUREMENT SYSTEM

Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 measurement system is comprised of the measurement server, robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for head and/or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the DASY4 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the DASY4 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot utilizes a controller with built in VME-bus computer.





DASY4 Measurement System with Fiberglass Planar Phantom



DASY4 Measurement Server

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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3.0 OUTPUT POWER MEASUREMENTS

GPRS Mode


Procedure used to establish test signal



The following setting was used to configure the Agilent 8960 Series E5515C wireless communications test set.

Service Selection > Test Mode A - Auto Slot Config. > off
 Main Service > Packet Data
 Network Support > GSM+GPRS
 Slot Config > 33 dBm (GSM850) & 30 dBm (GSM1900)
 BAP: Burst Average Power
 Pavg: Average power over all time slots

RF CONDUCTED OUTPUT POWER MEASUREMENT RESULTS – GPRS Mode									
2 Uplink Slots									
Mode / Band	Channel	Freq. (MHz)	Burst-Average Power		Mode / Band	Channel	Freq. (MHz)	Burst-Average Power	
			dBm	Watts				dBm	Watts
GPRS 850	128	824.2	32.0	1.58	GPRS 1900	512	1850.2	29.3	0.851
	190	836.6	32.3	1.70		661	1880.0	29.4	0.871
	251	848.8	32.2	1.66		810	1909.8	29.3	0.851

Note: The EDGE mode conducted power levels specified by Sierra Wireless Inc. for the Gobi2000 WWAN module are ~ 5 dB lower than the conducted output power levels specified for GPRS mode and therefore EDGE mode was not evaluated.

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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OUTPUT POWER MEASUREMENTS (Cont.)

WCDMA Mode

Procedure used to establish test signal

This procedure assumes the Agilent 8960 Series E5515C wireless communications test set has the following applications installed and with valid license.

Application: WCDMA Mobile Test

Rev, License: A.07.13, L

Call Setup > Shift & Preset

Cell Parameters: PS Domain Information > Present
ATT (IMSI Attach) Flag State > Set

Security Parameter - System Operations > None

Channel Type: RMC - 12.2k, 64k, 144k, 384k
AMC - 12.2k UL / 64 DL AM RMC,
12.2k UL / 144 DL AM RMC,
12.2k UL / 384 DL AM RMC

Paging Service: RB Test Mode

Channel Parameters (UARFCN):

DL Channel: PCS: 9662 / 9800 / 9938
Cell: 4357 / 4407 / 4458


UL Channel: PCS: 9262 / 9400 / 9538
Cell: 4132 / 4182 / 4233



DL DTCH Data: All Ones
RLC Reestablish: Off
Call Limit State: Off
Call Drop Timer: Off
SRB Config: 13.6k DCCH
UE Target Power: 25 dBm
UL CL Pwr Ctrl Mode: All Up Bits

RF CONDUCTED OUTPUT POWER MEASUREMENT RESULTS – WCDMA Mode

Channel Type: 12.2k RMC									
Mode / Band	Channel	Freq. (MHz)	Channel Power		Mode / Band	Channel	Freq. (MHz)	Channel Power	
			dBm	Watts				dBm	Watts
WCDMA 850	4132	826.4	24.2	0.263	WCDMA 1900	9262	1852.4	24.0	0.251
	4180	836.4	24.2	0.263		9400	1880.0	24.4	0.275
	4233	846.6	23.7	0.234		9538	1907.6	23.7	0.234

Note: The conducted output power levels for HSDPA/HSUPA modes specified by Sierra Wireless Inc. for the Gobi2000 WWAN module are lower than the conducted output power levels specified for WCDMA mode; therefore HSDPA/HSUPA modes were not evaluated.

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000		
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change			
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OUTPUT POWER MEASUREMENTS (Cont.)

1xEv-Do Rel. 0 Mode

Procedure used to establish test signal

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

<u>Application</u>	<u>Rev. License</u>
1xEv-Do Terminal Test	A.07.13, L

FTAP

- Call Setup → Shift & Preset
- Protocol Rev → 0 (1xEv-Do)
- Application Config → Enhanced Test Application Protocol → FTAP
- FTAP Rate → 307.2 kbps (2 Slot, QPSK)
- Access Network Info → Cell Parameters → Sector ID → 00840AC0 → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)



RTAP

- Call Setup → Shift & Preset
- Protocol Rev → 0 (1xEv-Do)
- Application Config → Enhanced Test Application Protocol → RTAP
- RTAP Rate → 153.6 kbps
- Access Network Info → Cell Parameters → Sector ID → 00840AC0 → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RF CONDUCTED OUTPUT POWER MEASUREMENT RESULTS - 1xEv-Do Rel. 0 Mode

FTAP Rate = 307 kbps (2 slot) / RTAP Rate = 76.8 kbps									
Mode / Band	Channel	Freq. (MHz)	Channel Power		Mode / Band	Channel	Freq. (MHz)	Channel Power	
			dBm	Watts				dBm	Watts
1xEv-Do Rel. 0 (850)	1013	824.70	24.3	0.269	1xEv-Do Rel. 0 (1900)	25	1851.25	23.8	0.240
	384	836.52	24.1	0.257		600	1880.00	24.2	0.263
	777	848.31	23.8	0.240		1175	1908.75	24.0	0.251

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	GENERAL DYNAMICS Itronix
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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OUTPUT POWER MEASUREMENTS (Cont.)

1xEv-Do Rev. A Mode

Procedure used to establish test signal

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

Application

1xEv-Do Terminal Test

Rev. License

A.07.13, L

FETAP

- Call Setup → Shift & Preset
- Protocol Rev → A (1xEv-Do-A)
- Application Config → Enhanced Test Application Protocol → FETAP
- FTAP Rate → 307.2 kbps (2 Slot, QPSK)
- Protocol Subtype Config → Release A Physical Layer Subtype → Subtype 0
- Access Network Info → Cell Parameters → Sector ID → 00840AC0 → Subnet Mask → 0
- Generator Info → Termination Parameters > Max Forward Packet Duration → 16 Slots
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RETAP



- Call Setup → Shift & Preset
- Protocol Rev → A (1xEv-Do-A)
- Application Config → Enhanced Test Application Protocol → RETAP
- F-Traffic Format → 4 (1024, 2,128) Canonical (307.2k, QPSK)
- R-Data Pkt Size → 4096
- Protocol Subtype Config → Release A Physical Layer Subtype → Subtype 2
→ PL Subtype 2 Access Channel MAC Subtype → Default (Subtype 0)
- Access Network Info → Cell Parameters → Sector ID → 00840AC0 → Subnet Mask → 0
- Generator Info → Termination Parameters → Max Forward Packet Duration > 16 Slots
→ ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RF CONDUCTED OUTPUT POWER MEASUREMENT RESULTS - 1xEv-Do Rev. A Mode

FETAP Rate = 307 kbps (2 slot) / RETAP Rate = 2048 bps

Mode / Band	Channel	Freq. (MHz)	Channel Power		Mode / Band	Channel	Freq. (MHz)	Channel Power	
			dBm	Watts				dBm	Watts
1xEv-Do Rev. A (850)	1013	824.70	24.3	0.269	1xEv-Do Rev. A (1900)	25	1851.25	24.0	0.251
	384	836.52	24.2	0.263		600	1880.00	24.1	0.257
	777	848.31	24.0	0.251		1175	1908.75	24.1	0.257

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	GENERAL DYNAMICS Itronix
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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OUTPUT POWER MEASUREMENTS (Cont.)

CDMA 1xRTT Mode

Procedure used to establish test signal

This procedure assumes the Agilent 8960 Series 10 E5515C Wireless Communications Test Set contains the following applications installed and with valid license.

Application

Rev. License

CDMA2000 Mobile Test


B.12.12, L




1xRTT

- Call Setup → Shift & Preset
- Protocol Rev → 6 (IS-2000-0)
- Radio Config (RC) → RC3 (Fwd3, Rvs3)
- FCH Service Option (SO) Setup → SO55
- Traffic Data Rate → Full
- Cell info → Cell Parameters → System ID (SID) → 2238 (for Cellular) and 4145 (for PCS)
→ Network ID (NID) → 65535
- Rvs Power Ctrl → All Bits Up (to get the maximum power)

RF CONDUCTED OUTPUT POWER MEASUREMENT RESULTS - 1xRTT Mode

RC3, SO55									
Mode / Band	Channel	Freq. (MHz)	Channel Power		Mode / Band	Channel	Freq. (MHz)	Channel Power	
			dBm	Watts				dBm	Watts
1xRTT 850	1013	824.70	24.3	0.269	1xRTT 1900	25	1851.25	23.9	0.246
	384	836.52	24.2	0.263		600	1880.00	24.1	0.257
	777	848.31	23.8	0.240		1175	1908.75	24.0	0.251

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID		Class II Permissive Change			
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4.0 SAR MEASUREMENT SUMMARY

BODY (LAP-HELD) SAR EVALUATION RESULTS


Test Date	Band	Freq.	Chan.	Test Mode		Host PC Position to Planar Phantom	WWAN Antenna Distance to Planar Phantom	Battery Type	Conducted Power Before Test		SAR Drift During Test	Measured SAR 1g
		MHz							dBm	Mode	dB	W/kg
May 21	Cellular	836.6	190	GPRS	2 Uplink Slots	Bottom Side Touch	1.3 cm	Li-ion	32.3	BAP	-0.125	0.162
May 21	Cellular	836.4	4182	WCDMA	12.2k RMC	Bottom Side Touch	1.3 cm	Li-ion	24.2	MAP	0.086	0.220
May 21	Cellular	836.52	384	EV-DO 0	FTAP 2 slot 307 kbps	Bottom Side Touch	1.3 cm	Li-ion	24.1	MAP	0.047	0.258
May 21	Cellular	836.52	384	EV-DO A	FETAP 2 slot 307 kbps	Bottom Side Touch	1.3 cm	Li-ion	24.2	MAP	-0.021	0.261
May 21	Cellular	836.52	384	1xRTT	RC3 (SO55)	Bottom Side Touch	1.3 cm	Li-ion	24.2	MAP	0.010	0.264
May 21	PCS	1880.0	661	GPRS	2 Uplink Slots	Bottom Side Touch	1.3 cm	Li-ion	29.4	BAP	-0.030	0.245
May 21	PCS	1880.0	9400	WCDMA	12.2k RMC	Bottom Side Touch	1.3 cm	Li-ion	24.4	MAP	-0.127	0.518
May 21	PCS	1880.0	600	EV-DO 0	FTAP 2 slot 307 kbps	Bottom Side Touch	1.3 cm	Li-ion	24.2	MAP	0.183	0.533
May 21	PCS	1880.0	600	EV-DO A	FETAP 2 slot 307 kbps	Bottom Side Touch	1.3 cm	Li-ion	24.1	MAP	0.131	0.529
May 21	PCS	1880.0	600	1xRTT	RC3 (SO55)	Bottom Side Touch	1.3 cm	Li-ion	24.1	MAP	-0.115	0.522



SAR LIMIT(S)	BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	1.6 W/kg	1g average	General Population / Uncontrolled

Test Date(s)	May 21, 2010			May 21, 2010			Measured Fluid Type	835 MHz	1880 MHz	Unit	
Dielectric Constant ϵ_r	835 MHz Body			1880 MHz Body			Relative Humidity	35	35	%	
	IEEE Target	Meas.	Dev.	IEEE Target	Meas.	Dev.	Atmospheric Pressure	101.1	101.1	kPa	
	55.2	± 5%	56.9	+3.1%	53.3	± 5%	51.1	-4.1%	Ambient Temperature	23.5	23.8
Conductivity σ (mho/m)	835 MHz Body			1880 MHz Body			Fluid Temperature	22.1	23.0	°C	
	IEEE Target	Meas.	Dev.	IEEE Target	Meas.	Dev.	Fluid Depth	≥ 15	≥ 15	cm	
	0.97	± 5%	0.96	-1.0%	1.52	± 5%	1.48	-2.7%	ρ (Kg/m ³)	1000	

Notes

1.	Detailed measurement data and plots showing the maximum SAR location of the DUT are reported in Appendix A.
2.	The SAR levels measured at the mid channel were > 3 dB below the SAR limit; therefore the low and high channels were optional (per FCC Supp. C).
3.	The power drifts of the DUT measured by the DASY4 system during the SAR evaluations were <5% from the start power.
4.	The DUT battery was fully charged prior to the SAR evaluations.
5.	The fluid temperature was measured prior to and after the SAR evaluations to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
6.	The dielectric parameters of the simulated tissue mixture were measured prior to the SAR evaluations using an HP 85070C Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C).

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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5.0 SIMULTANEOUS TRANSMISSION ASSESSMENT


Assessment of the DUT for simultaneous transmission was based on applying the provision of FCC KDB 447498 D01v04 Section 4)d) whereby the applicable criteria of FCC KDB 616217 D01v01r01 was further implemented as described below.



WWAN Co-Transmission: WWAN (MAIN) does not co-transmit simultaneously with WLAN
 WWAN (MAIN) can transmit simultaneously with Bluetooth
 Max. Bluetooth Output Power = < 60/f mW

Antenna-to-Antenna Distance: WWAN (MAIN) to WLAN = 5.3 cm
 WWAN (MAIN) to Bluetooth = 12 cm
 WWAN to RFID = 4.5 cm

Antenna-to-User Distance: WWAN (MAIN) to Bottom Edge = 23.5 cm (180 degrees Landscape)
 WWAN (MAIN) to Left Edge = 10.2 cm (-90 degrees Portrait)
 WWAN (MAIN) to Right Edge = 10.2 cm (90 degrees Portrait)
 WWAN (MAIN) to Bottom Side = 1.3 cm (Lap)
 Bluetooth to Bottom Side = < 5 cm (Lap)

Summary: Simultaneous transmission test exclusion applies to the WWAN and Bluetooth based on the maximum conducted output power of the Bluetooth is < 60/f mW and the antenna to antenna separation distance (WWAN to Bluetooth) is > 5 cm.

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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6.0 DETAILS OF SAR EVALUATION

The General Dynamics Itronix Corporation Model: GD3000 Tablet PC with Gobi2000 WWAN Module was evaluated for SAR based on the test provisions and conditions described below. The detailed test setup photographs are shown in Appendix D.

Test Configuration(s)

- The DUT was tested for body SAR (lap-held) with the bottom side of the GD3000 Tablet PC placed parallel to, and touching, the outer surface of the planar phantom.

Test Mode(s)


- For the SAR evaluations in GPRS mode an air-link communication was established using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set with 2 uplink slots (Multi-slot Class 10).
- For the SAR evaluations in WCDMA mode an air-link communication was established using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set with 12.2 kbps RMC channel and the TPC bits configured to all "1s".
- For the SAR evaluations in CDMA/EV-DO modes an air-link communication was established using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set at maximum power in "all bits up" power control mode.



Power Level(s)

- The conducted power levels of the DUT were measured prior to the SAR evaluations using the Agilent 8960 Series 10 E5515C Wireless Communications Test Set and Gigatronix Universal Power Meter with Burst Average Power (GPRS) and Modulated Average Power (WCDMA, CDMA/EV-DO).

7.0 SAR EVALUATION PROCEDURES

- The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated using the SAM phantom.
 - For body-worn and face-held devices a planar phantom was used.
- The SAR was determined by a pre-defined procedure within the DASY4 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 15mm x 15mm.
An area scan was determined as follows:
- Based on the defined area scan grid, a more detailed grid is created to increase the points by a factor of 10. The interpolation function then evaluates all field values between corresponding measurement points.
- A linear search is applied to find all the candidate maxima. Subsequently, all maxima are removed that are >2 dB from the global maximum. The remaining maxima are then used to position the cube scans.
A 1g and 10g spatial peak SAR was determined as follows:
- Extrapolation is used to determine the values between the dipole center of the probe and the surface of the phantom. For E-Field Probe EX3DV4 this data cannot be measured because the center of the dipole sensors is 1.0 mm away from the probe tip and the distance between the probe and the boundary must be larger than 25% of the probe diameter. The probe diameter is 2.4 mm (see probe calibration document in Appendix F). In the DASY4 software, the distance between the sensor center and phantom surface is set to 2.0 mm. This provides a distance of 1.0 mm between the probe tip and the surface. For E-Field Probe ET3DV6 this data cannot be measured, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.4 mm (see probe calibration document in Appendix F). The extrapolation of the values between the dipole center and the surface of the phantom was based on trivariate quadratics computed from the previously calculated 3D interpolated points nearest the phantom surface.
- Interpolated data is used to calculate the average SAR over 1g and 10g cubes by spatially discretizing the entire measured cube. The volume used to determine the averaged SAR is a 1mm grid (42875 interpolated points).
- A zoom scan volume of 32 mm x 32 mm x 30 mm (5 x 5 x 7 points) centered at the peak SAR location determined from the area scan is used for all zoom scans for devices with a transmit frequency < 800 MHz. Zoom scans for frequencies ≥ 800 MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7 x 7 x 7) to ensure complete capture of the peak spatial-average SAR.

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID		Class II Permissive Change			
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8.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations, daily system checks were performed using a planar phantom with 835 MHz and 1900 MHz SPEAG dipoles (see Appendix B for system performance check evaluation plots) in accordance with the procedures described in IEEE Standard 1528-2003. The dielectric parameters of the simulated tissue mixtures were measured prior to the system performance checks using an HP 85070C Dielectric Probe Kit and an HP 8753ET Network Analyzer (see Appendix C). A forward power of 250 mW was applied to the dipole and the system was verified to a tolerance of $\pm 10\%$ from the system manufacturer's dipole calibration target SAR values (see Appendix E for system manufacturer's dipole calibration procedures).

SYSTEM PERFORMANCE CHECK EVALUATION RESULTS


Test Date	Fluid Freq.	SAR 1g (W/kg)			Dielectric Constant ϵ_r			Conductivity σ (mho/m)			ρ (Kg/m ³)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
		Body (MHz)	SPEAG Target	Meas.	Dev.	SPEAG Target	Meas.	Dev.	SPEAG Target	Meas.						
May-21	835	2.49 $\pm 10\%$	2.42	-2.8%	55.2 $\pm 5\%$	56.9	+3.1%	0.97 $\pm 5\%$	0.96	-1.0%	1000	23.5	22.1	≥ 15	35	101.1
May-21	1900	10.6 $\pm 10\%$	10.3	-2.9%	53.3 $\pm 5\%$	51.0	-4.3%	1.52 $\pm 5\%$	1.49	-2.0%	1000	23.8	23.0	≥ 15	35	101.1
Notes	1. The target SAR values are the measured values from the dipole calibration performed by SPEAG (see Appendix E).															
	2. The target dielectric parameters are the nominal values from the dipole calibration performed by SPEAG (see Appendix E).															
	3. The fluid temperature was measured prior to and after the system performance check to ensure the temperature remained within $\pm 2^\circ\text{C}$ of the fluid temperature reported during the dielectric parameter measurements.															
	4. The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).															



9.0 SAR PROBE CALIBRATION & MEASUREMENT FREQUENCIES

The following procedures are recommended for measurements at 150 MHz - 3 GHz to minimize probe calibration and tissue dielectric parameter discrepancies. In general, SAR measurements below 300 MHz should be within ± 50 MHz of the probe calibration frequency. At 300 MHz to 3 GHz, measurements should be within ± 100 MHz of the probe calibration frequency. Measurements exceeding 50% of these intervals, ± 25 MHz < 300 MHz and ± 50 MHz ≥ 300 MHz, require additional steps (per FCC KDB 450824 D01 v01r01).

Probe Calibration Freq.	Device Measurement Freq.	Frequency Interval	± 50 MHz ≥ 300 MHz
835 MHz	836.6 MHz	1.6 MHz	< 50 MHz
	836.4 MHz	1.4 MHz	< 50 MHz
	836.52 MHz	1.52 MHz	< 50 MHz
1900 MHz	1880.0 MHz	20 MHz	< 50 MHz

The probe calibration and measurement frequency interval is < 50 MHz; therefore the additional steps were not required.

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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10.0 SIMULATED EQUIVALENT TISSUES


The simulated equivalent tissue recipes listed in the table below are derived from the SAR system manufacturer's suggested recipe in the DASY4 manual in accordance with the procedures and requirements specified in IEEE Standard 1528-2003. The ingredient percentage may have been adjusted minimally in order to achieve the appropriate target dielectric parameters within the specified tolerance.



PCS BAND TISSUE MIXTURE		
INGREDIENT	1900 MHz Body	1880 MHz Body
	System Performance Check	DUT Evaluation
Water	69.85 %	69.85 %
Glycol Monobutyl	29.89 %	29.89 %
Salt	0.26 %	0.26 %

CELL BAND TISSUE MIXTURE		
INGREDIENT	835 MHz Body	835 MHz Body
	System Performance Check	DUT Evaluation
Water	53.79 %	53.79 %
Sugar	45.13 %	45.13 %
Salt	0.98 %	0.98 %
Bactericide	0.10 %	0.10 %

11.0 SAR LIMITS

SAR RF EXPOSURE LIMITS		
FCC 47 CFR 2.1093	(General Population / Uncontrolled Exposure)	(Occupational / Controlled Exposure)
Spatial Average (averaged over the whole body)	0.08 W/kg	0.4 W/kg
Spatial Peak (averaged over any 1 g of tissue)	1.6 W/kg	8.0 W/kg
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0 W/kg	20.0 W/kg
The Spatial Average value of the SAR averaged over the whole body.		
The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.		
The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.		
Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.		
Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.		



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
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12.0 ROBOT SYSTEM SPECIFICATIONS

<u>Specifications</u>	
Positioner	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability	0.02 mm
No. of axis	6
<u>Data Acquisition Electronic (DAE) System</u>	
<u>Cell Controller</u>	
Processor	AMD Athlon XP 2400+
Clock Speed	2.0 GHz
Operating System	Windows XP Professional
<u>Data Converter</u>	
Features	Signal Amplifier, multiplexer, A/D converter, and control logic
Software	Measurement Software: DASY4, V4.7 Build 44
	Postprocessing Software: SEMCAD, V1.8 Build 171
Connecting Lines	Optical downlink for data and status info.; Optical uplink for commands and clock
<u>DASY4 Measurement Server</u>	
Function	Real-time data evaluation for field measurements and surface detection
Hardware	PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM
Connections	COM1, COM2, DAE, Robot, Ethernet, Service Interface
<u>E-Field Probe</u>	
<u>Probe (Cell Band)</u>	
Model	ET3DV6
Serial No.	1590
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
<u>Probe (PCS Band)</u>	
Model	EX3DV4
Serial No.	3600
Construction	Symmetrical design with triangular core
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
<u>Phantom(s)</u>	
Type	Barski Planar Phantom
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 70 liters

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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13.0 PROBE SPECIFICATIONS

ET3DV6 E-Field Probe

Construction: Symmetrical design with triangular core
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, glycol)

Calibration: In air from 10 MHz to 2.5 GHz
In brain simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy $\pm 8\%$)

Frequency: 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)

Directivity: ± 0.2 dB in brain tissue (rotation around probe axis)
 ± 0.4 dB in brain tissue (rotation normal to probe axis)

Dynamic Range: $5 \mu\text{W/g}$ to > 100 mW/g; Linearity: ± 0.2 dB

Surface Detect: ± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces

Dimensions: Overall length: 330 mm
Tip length: 16 mm
Body diameter: 12 mm
Tip diameter: 6.8 mm
Distance from probe tip to dipole centers: 2.7 mm

Application: General dosimetry up to 3 GHz
Compliance tests of mobile phone



ET3DV6 E-Field Probe

EX3DV4 E-Field Probe

Construction: Symmetrical design with triangular core
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g. DGBE)

Calibration: Basic Broadband Calibration in air: 10-3000 MHz
Conversion Factors (CF) for HSL 900 and HSL 1750

Frequency: 10 MHz to >6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)

Directivity: ± 0.3 dB in HSL (rotation around probe axis)
 ± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range: $10 \mu\text{W/g}$ to >100 mW/g; Linearity: ± 0.2 dB (noise: typically < $1 \mu\text{W/g}$)

Dimensions: Overall length: 330 mm (Tip: 20 mm)
Tip diameter: 2.5 mm (Body: 12 mm)
Typical distance from probe tip to dipole centers: 1.0 mm

Application: High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better than 30%.



EX3DV4 E-Field Probe

14.0 BARSKI PLANAR PHANTOM

The Barski Planar Phantom is a fiberglass shell phantom with a 2.0 mm (+/-0.2mm) thick device measurement area at the center of the phantom for SAR evaluations of devices with a larger surface area than the planar section of the SAM phantom. The planar phantom is integrated in a wooden table. The planar phantom was used for the DUT SAR evaluations and the system performance check evaluations. See Appendix G for dimensions and specifications of the Barski Planar Phantom.



Barski Planar Phantom



15.0 DEVICE HOLDER

The DASY4 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. For evaluations of larger devices a Plexiglas platform is attached to the device holder.




Device Holder



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16.0 TEST EQUIPMENT LIST

TEST EQUIPMENT		ASSET NO.	SERIAL NO.	DATE CALIBRATED	CALIBRATION INTERVAL
USED	DESCRIPTION				
x	Schmid & Partner DASY4 System	-	-	-	-
x	-DASY4 Measurement Server	00158	1078	CNR	CNR
x	-Robot	00046	599396-01	CNR	CNR
x	-DAE4	00019	353	27Apr10	Annual
x	-ET3DV6 E-Field Probe	00017	1590	16Jul09	Annual
x	-EX3DV4 E-Field Probe	00213	3600	29Apr10	Annual
x	-D835V2 Validation Dipole	00217	4d075	20Apr09	Biennial
x	-D1900V2 Validation Dipole	00218	5d107	21Apr09	Biennial
x	-Barski Planar Phantom	00155	03-01	CNR	CNR
x	HP 85070C Dielectric Probe Kit	00033	none	CNR	CNR
x	Gigatronics 8652A Power Meter	00007	1835272	04May10	Biennial
x	Gigatronics 80701A Power Sensor	00014	1833699	04May10	Biennial
x	HP 8753ET Network Analyzer	00134	US39170292	04May10	Biennial
x	Agilent 8960 Series 10 Communication Test Set	N/A	GB46311315	24Sep09	Biennial
x	Rohde & Schwarz SMR20 Signal Generator	00006	100104	CNR	CNR
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	CNR	CNR
Abbr.	CNR = Calibration Not Required; N/A = Not Applicable				


Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
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17.0 MEASUREMENT UNCERTAINTIES

UNCERTAINTY BUDGET FOR DEVICE EVALUATION									
Uncertainty Component	IEEE 1528 Section	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	ci 10g	Uncertainty Value ±% (1g)	Uncertainty Value ±% (10g)	V _i or V _{eff}
Measurement System									
Probe Calibration	E.2.1	5.5	Normal	1	1	1	5.5	5.5	∞
Axial Isotropy	E.2.2	4.7	Rectangular	1.732050808	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	Rectangular	1.732050808	0.7	0.7	3.9	3.9	∞
Boundary Effect	E.2.3	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	Rectangular	1.732050808	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	Rectangular	1.732050808	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	Rectangular	1.732050808	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3	Rectangular	1.732050808	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	Rectangular	1.732050808	1	1	0.2	0.2	∞
Probe Positioning wrt Phantom Shell	E.6.3	2.9	Rectangular	1.732050808	1	1	1.7	1.7	∞
Extrapolation, interpolation & integration algorithms for max. SAR evaluation	E.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	2.9	Normal	1	1	1	2.9	2.9	12
Device Holder Uncertainty	E.4.1	3.6	Normal	1	1	1	3.6	3.6	8
SAR Drift Measurement	6.6.2	5	Rectangular	1.732050808	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4	Rectangular	1.732050808	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5	Rectangular	1.732050808	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measured)	E.3.3	2.7	Normal	1	0.64	0.43	1.7	1.2	∞
Liquid Permittivity (target)	E.3.2	5	Rectangular	1.732050808	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measured)	E.3.3	4.1	Normal	1	0.6	0.49	2.5	2.0	∞
Combined Standard Uncertainty			RSS				10.78	10.47	
Expanded Uncertainty (95% Confidence Interval)			k=2				21.56	20.94	


Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

18.0 REFERENCES



- [1] Federal Communications Commission - "Radiofrequency radiation exposure evaluation: portable devices", Rule Part 47 CFR §2.1093.
- [2] Federal Communications Commission - "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.
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- [4] Federal Communications Commission, Office of Engineering and Technology - "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies"; KDB 447498 D01v04: November 2009.
- [5] Federal Communications Commission, Office of Engineering and Technology - "Permissive Change Policies"; KDB 178919 D01v04r04: August 2009.
- [6] Federal Communications Commission - "SAR Measurement Procedures for 3G Devices"; KDB 941225 D01v02: October 2007.
- [7] Federal Communications Commission - "SAR Evaluation Considerations for Laptop Computers with Antennas Built-in on Display Screens"; KDB 616217 D01v01r01: December 2007.
- [8] Federal Communications Commission, Office of Engineering and Technology - "Application Note: SAR Probe Calibration and System Verification Considerations for Measurements at 150 MHz - 3 GHz"; KDB 450824 D01 v01r01: January 2007.
- [9] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 17 Application Note, Body Tissue Recipe: Sept. 2005.
- [10] ISO/IEC 17025 - "General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)."

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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APPENDIX A - SAR MEASUREMENT DATA

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - GPRS 850 - 2 Uplink Slots - Cell Band - 836.6 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: GPRS - 2 Uplink
 Frequency: 836.6 MHz; Duty Cycle: 1:4.16

Medium: M835 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (12x17x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (measured) = 0.173 mW/g

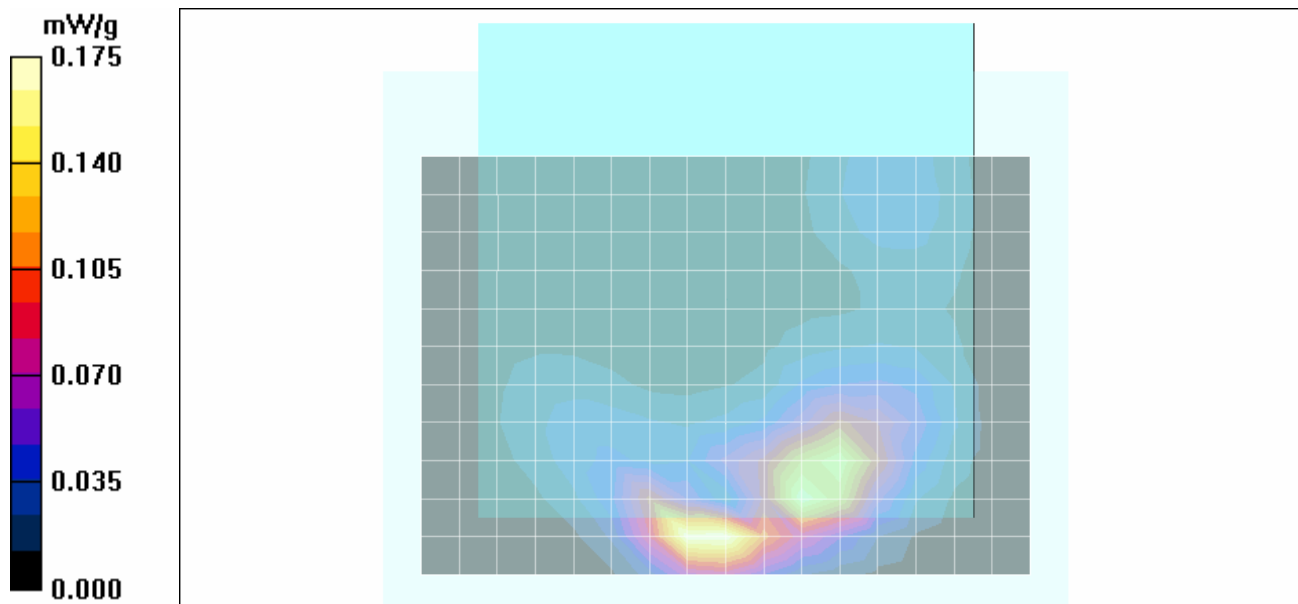
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 13.7 V/m; Power Drift = -0.125 dB



Peak SAR (extrapolated) = 0.233 W/kg

SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.102 mW/g

Maximum value of SAR (measured) = 0.175 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - WCDMA 850 - 12.2kbps - Cell Band - 836.4 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: WCDMA 850

Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: $f = 836.6 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (12x17x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (measured) = 0.226 mW/g

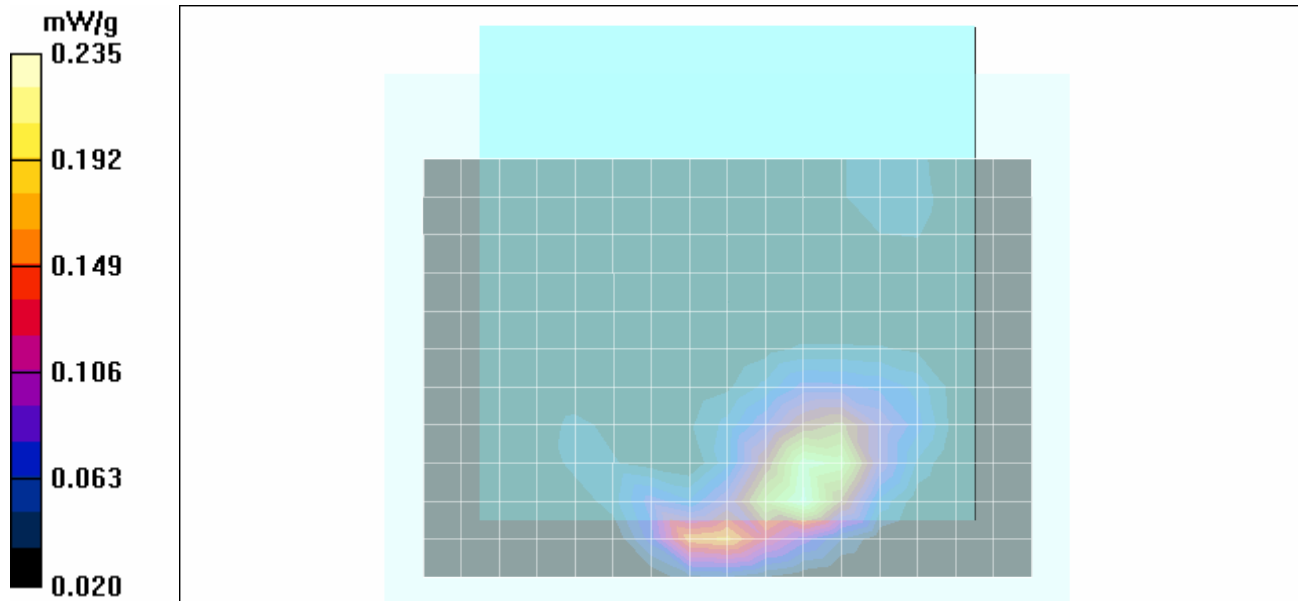
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.5 V/m; Power Drift = 0.086 dB



Peak SAR (extrapolated) = 0.304 W/kg

SAR(1 g) = 0.220 mW/g; SAR(10 g) = 0.151 mW/g

Maximum value of SAR (measured) = 0.235 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - EV-DO Rel. 0 - FTAP 307kbps - Cell Band - 836.52 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: EV-DO Rel. 0

Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: $f = 836.52 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (12x17x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (measured) = 0.225 mW/g

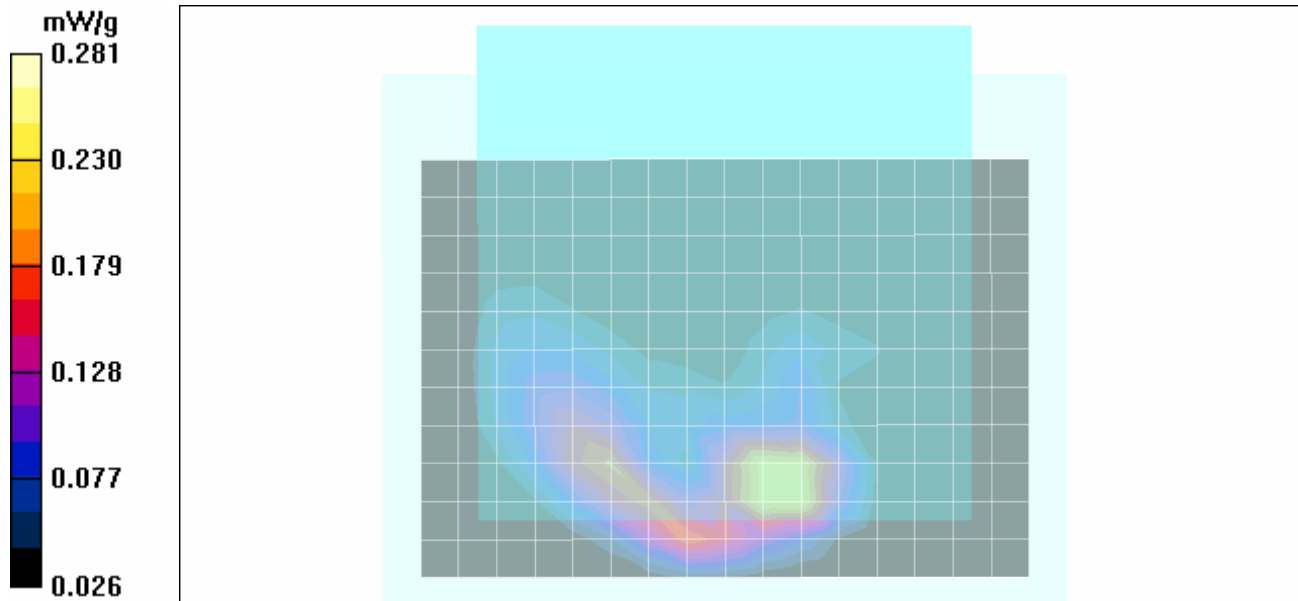
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.2 V/m; Power Drift = 0.047 dB



Peak SAR (extrapolated) = 0.346 W/kg

SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.177 mW/g

Maximum value of SAR (measured) = 0.281 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - EV-DO Rev. A - FETAP 307kbps - Cell Band - 836.52 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: EV-DO Rev. A

Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: $f = 836.52 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fibreglas Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (12x17x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (measured) = 0.227 mW/g

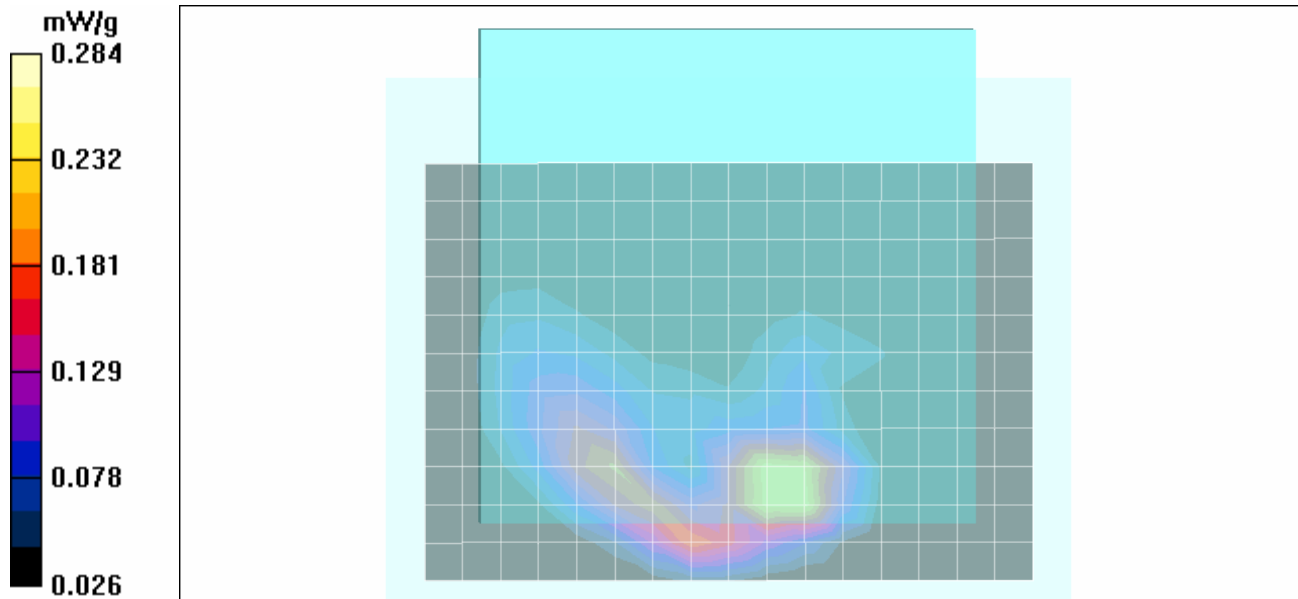
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 16.0 V/m; Power Drift = -0.021 dB



Peak SAR (extrapolated) = 0.350 W/kg

SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.179 mW/g

Maximum value of SAR (measured) = 0.284 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - CDMA 1xRTT - RC3 (SO55) - Cell Band - 836.52 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CDMA 1xRTT

Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: $f = 836.52 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (12x17x1): Measurement grid: $dx=20\text{mm}$, $dy=20\text{mm}$

Maximum value of SAR (measured) = 0.230 mW/g

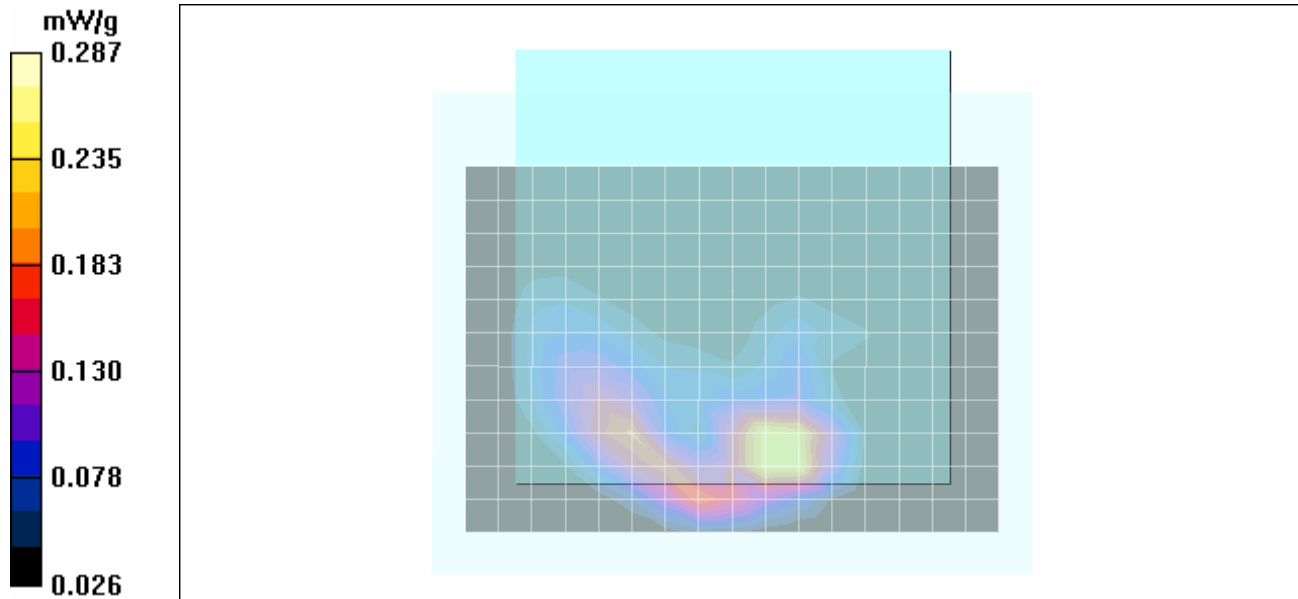
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 16.3 V/m; Power Drift = 0.010 dB



Peak SAR (extrapolated) = 0.353 W/kg

SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.181 mW/g

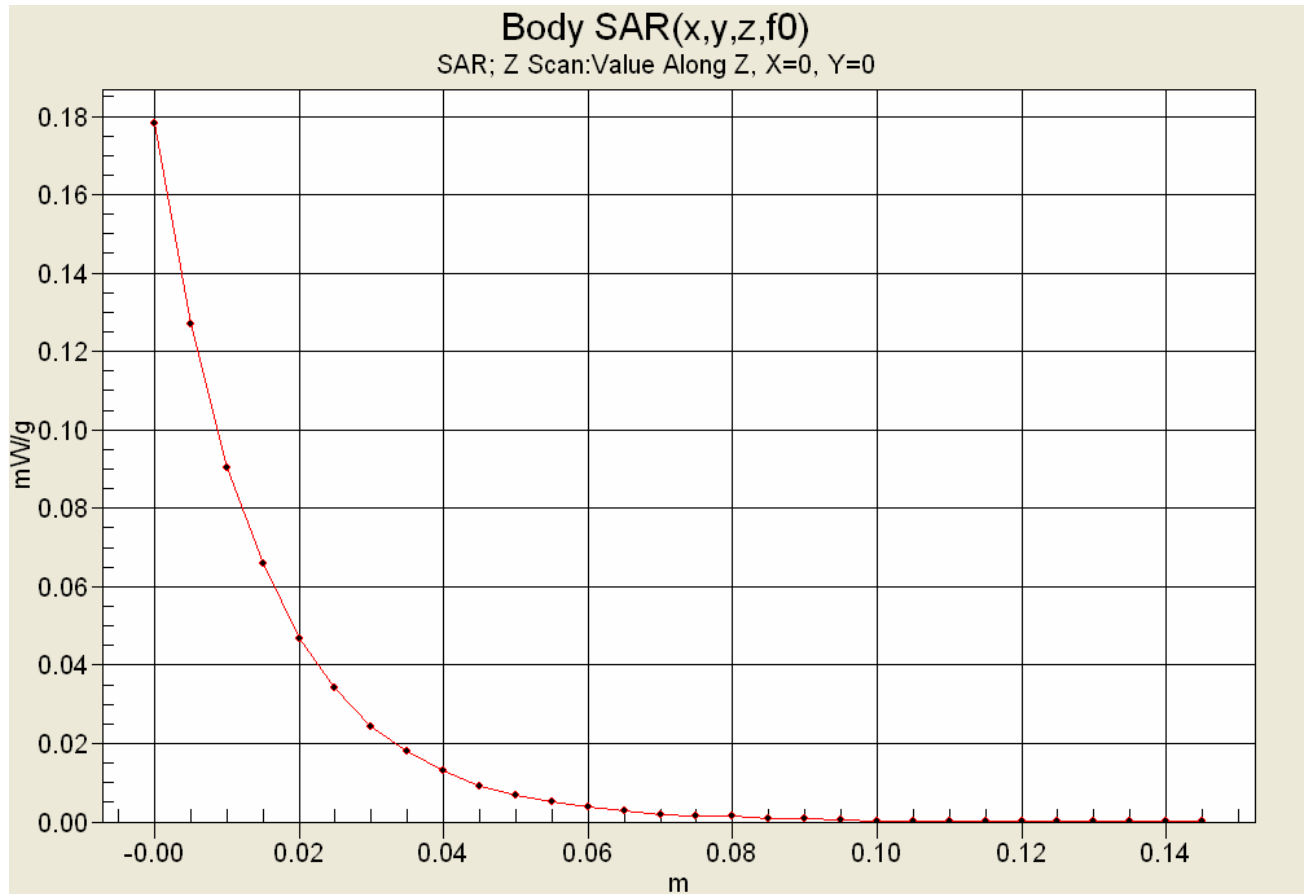
Maximum value of SAR (measured) = 0.287 mW/g






Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Z-Axis Scan



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - GPRS 1900 - 2 Uplink Slots - PCS Band - 1880.0 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: GPRS - 2 Uplink

Frequency: 1880 MHz; Duty Cycle: 1:4.16

Medium: M1880 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.47, 6.47, 6.47); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (15x22x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.283 mW/g

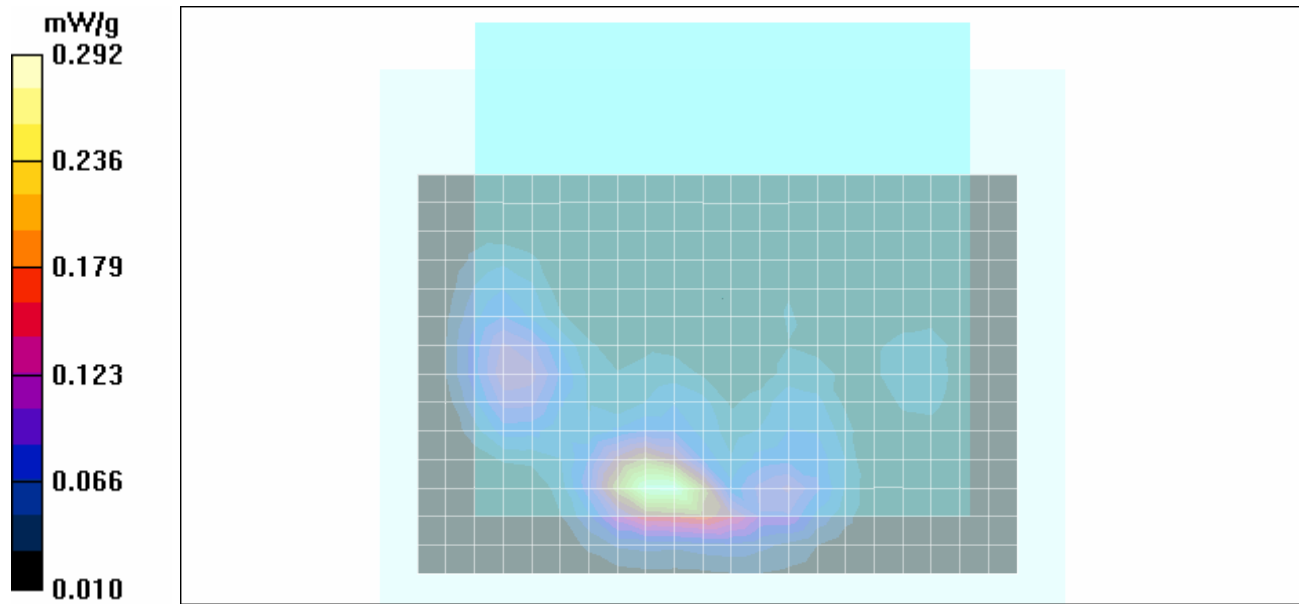
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 12.5 V/m; Power Drift = -0.030 dB



Peak SAR (extrapolated) = 0.391 W/kg

SAR(1 g) = 0.245 mW/g; SAR(10 g) = 0.149 mW/g

Maximum value of SAR (measured) = 0.292 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - WCDMA 1900 - 12.2kbps - PCS Band - 1880.0 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: WCDMA 1900

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1880 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.47, 6.47, 6.47); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (15x22x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.601 mW/g

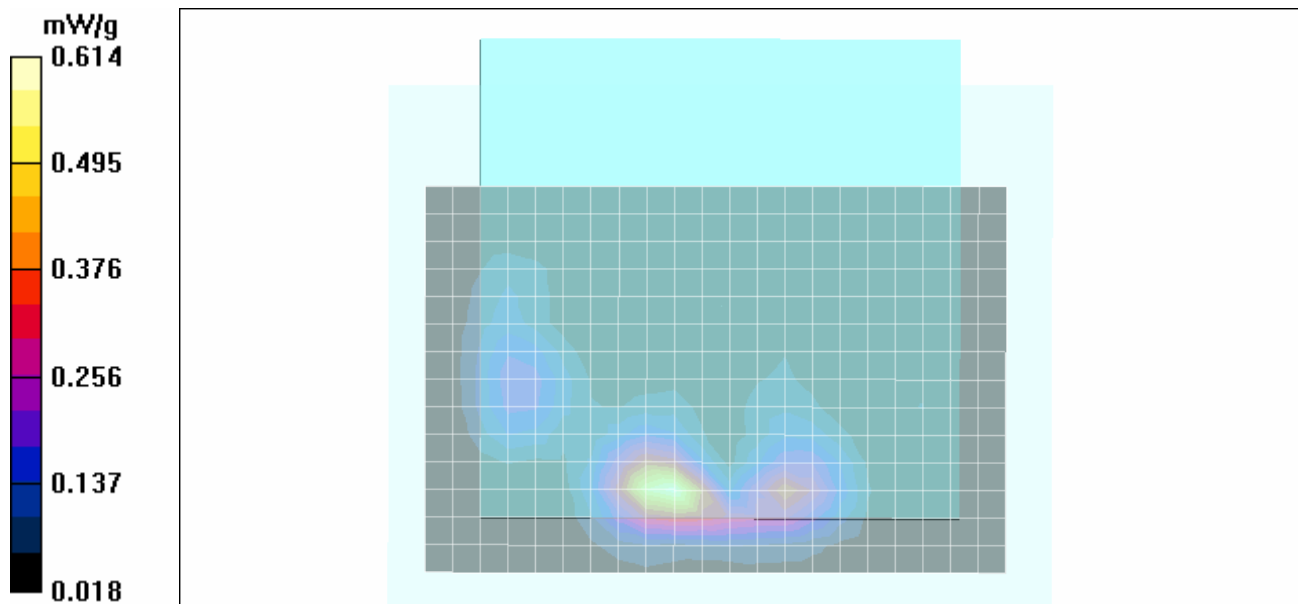
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.3 V/m; Power Drift = -0.127 dB



Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.518 mW/g; SAR(10 g) = 0.310 mW/g

Maximum value of SAR (measured) = 0.614 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	GENERAL DYNAMICS Itronix
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - EV-DO Rel. 0 - FTAP 307kbps - PCS Band - 1880.0 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: EV-DO Rel. 0

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1880 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.47, 6.47, 6.47); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (15x22x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.586 mW/g

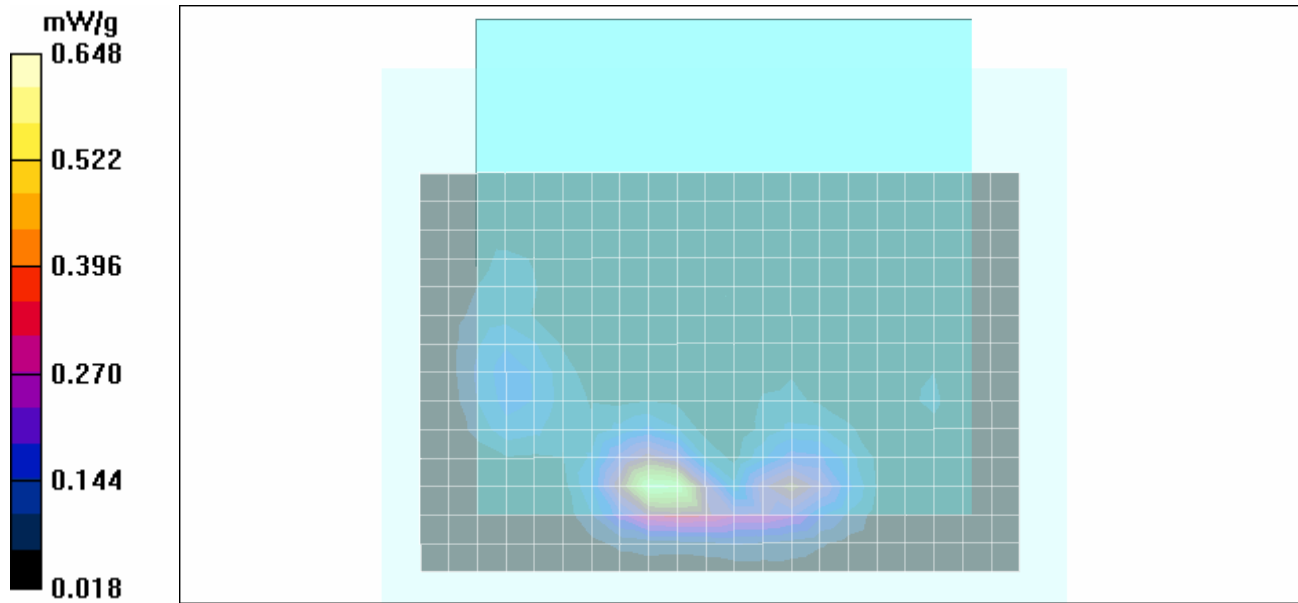
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 20.4 V/m; Power Drift = 0.183 dB

Peak SAR (extrapolated) = 0.889 W/kg

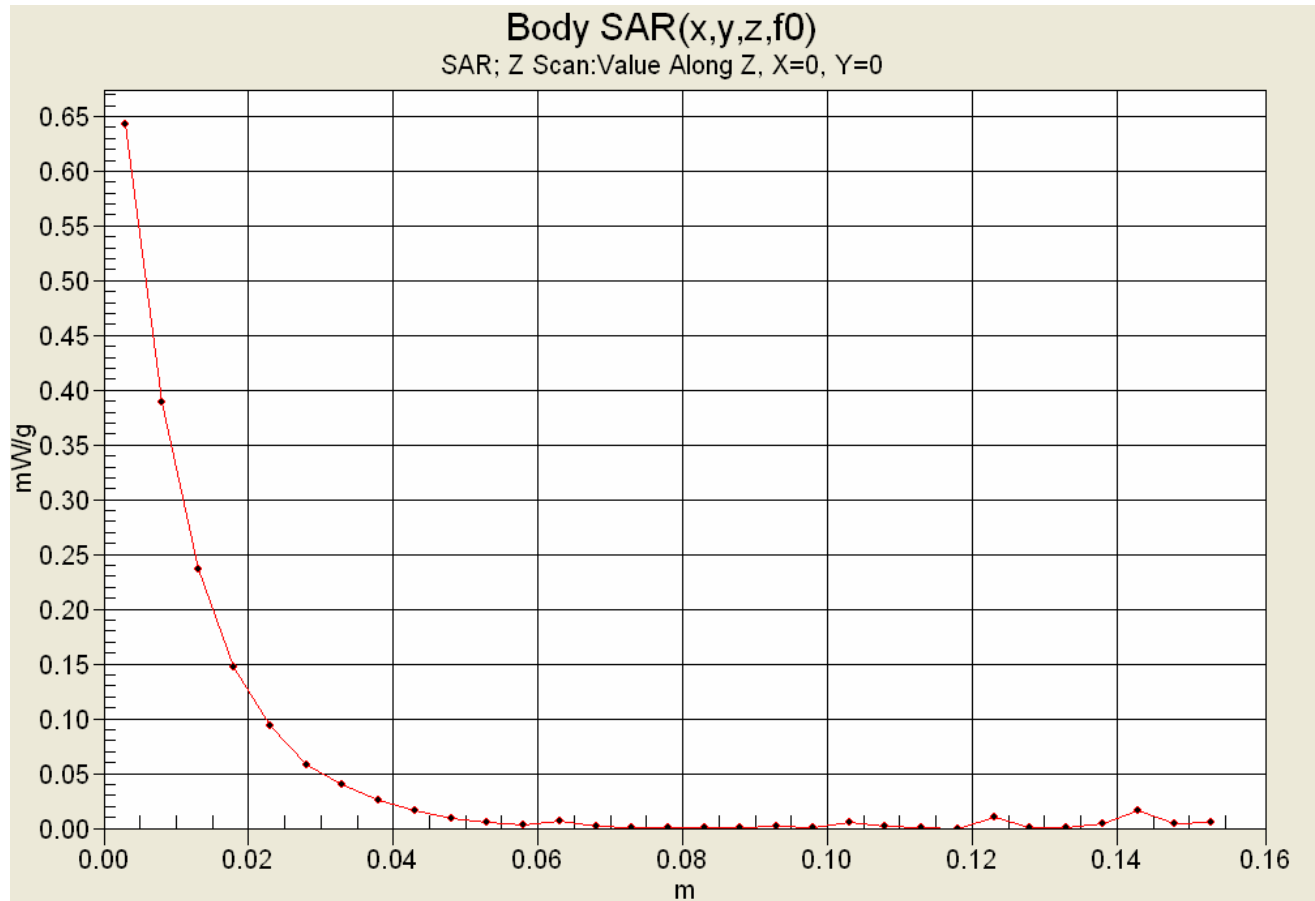
SAR(1 g) = 0.533 mW/g; SAR(10 g) = 0.318 mW/g



Maximum value of SAR (measured) = 0.648 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Z-Axis Scan



	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - EV-DO Rev. A - FETAP 307kbps - PCS Band - 1880.0 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: EV-DO Rev. A

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1880 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.47, 6.47, 6.47); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (15x22x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.582 mW/g

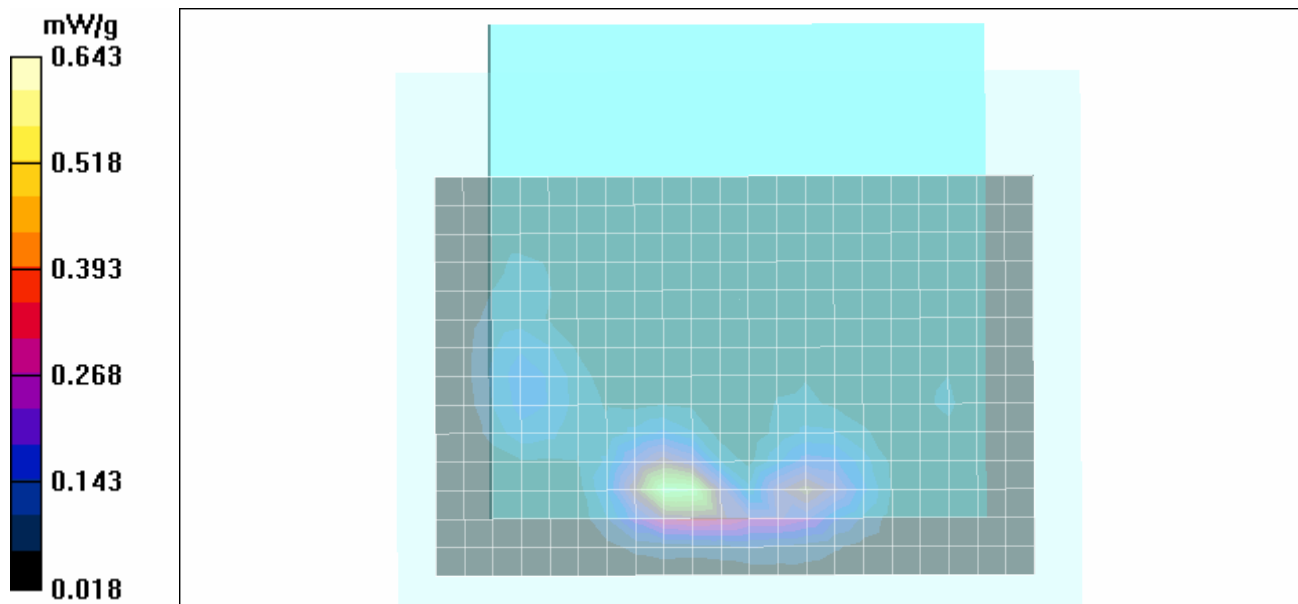
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 20.2 V/m; Power Drift = 0.131 dB



Peak SAR (extrapolated) = 0.883 W/kg

SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.315 mW/g

Maximum value of SAR (measured) = 0.643 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

Body SAR (Lap-held) - Bottom Touch - CDMA 1xRTT - RC3 (SO55) - PCS Band - 1880.0 MHz

DUT: GD Itronix Corporation GD3000; Type: Tablet PC with Gobi2000 WWAN Module; Serial: SY0120000313

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CDMA 1xRTT

Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: M1880 Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51.1$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.47, 6.47, 6.47); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASy4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body SAR (Lap-held) - Bottom Side of Tablet PC Touching Planar Phantom

Area Scan (15x22x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.574 mW/g

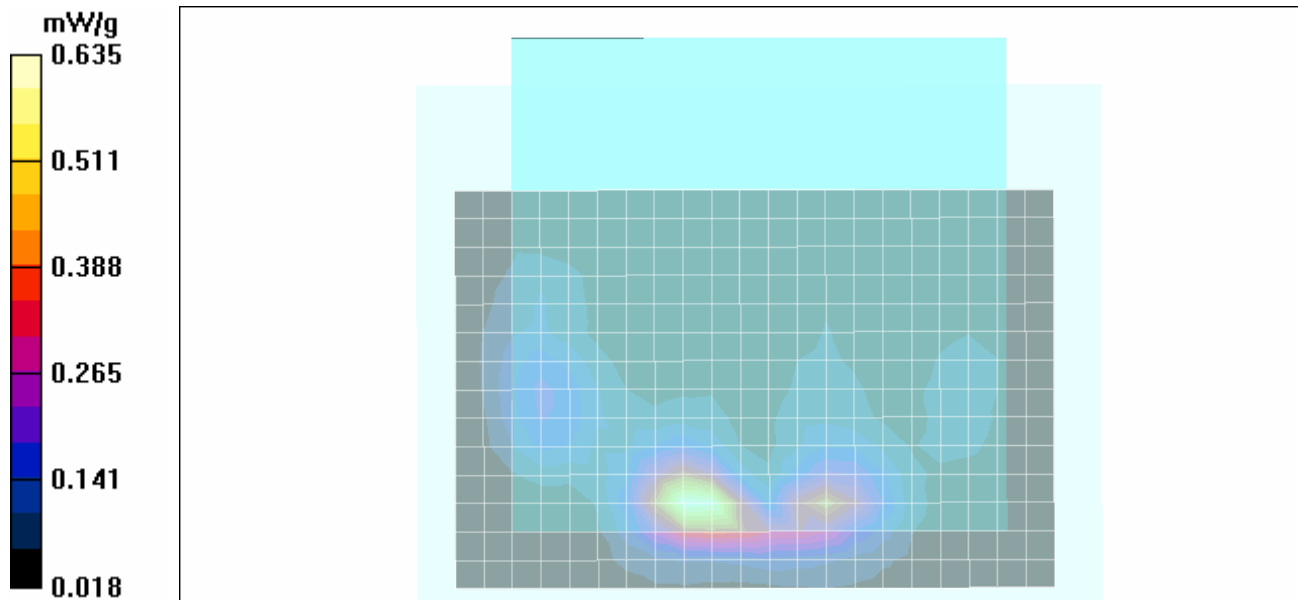
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 20.2 V/m; Power Drift = -0.115 dB



Peak SAR (extrapolated) = 0.871 W/kg

SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.311 mW/g


Maximum value of SAR (measured) = 0.635 mW/g





Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX B - SYSTEM PERFORMANCE CHECK DATA

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

System Performance Check - 835 MHz Dipole - Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d075; Calibrated: 20/04/2009

Ambient Temp: 23.5°C; Fluid Temp: 22.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Forward Conducted Power: 250 mW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.96 \text{ mho/m}$; $\epsilon_r = 56.9$; $\rho = 1000 \text{ kg/m}^3$

- Probe: ET3DV6 - SN1590; ConvF(6.34, 6.34, 6.34); Calibrated: 16/07/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

835 MHz System Performance Check

Area Scan (6x10x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 2.51 mW/g

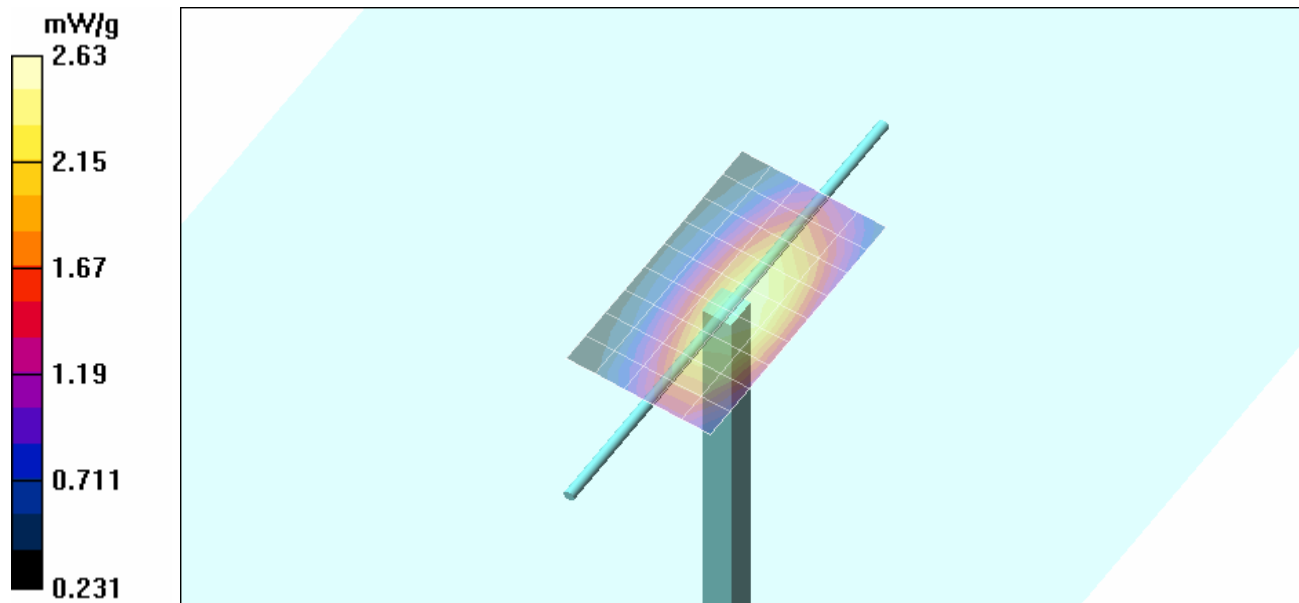
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 50.1 V/m; Power Drift = -0.220 dB



Peak SAR (extrapolated) = 3.53 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.58 mW/g

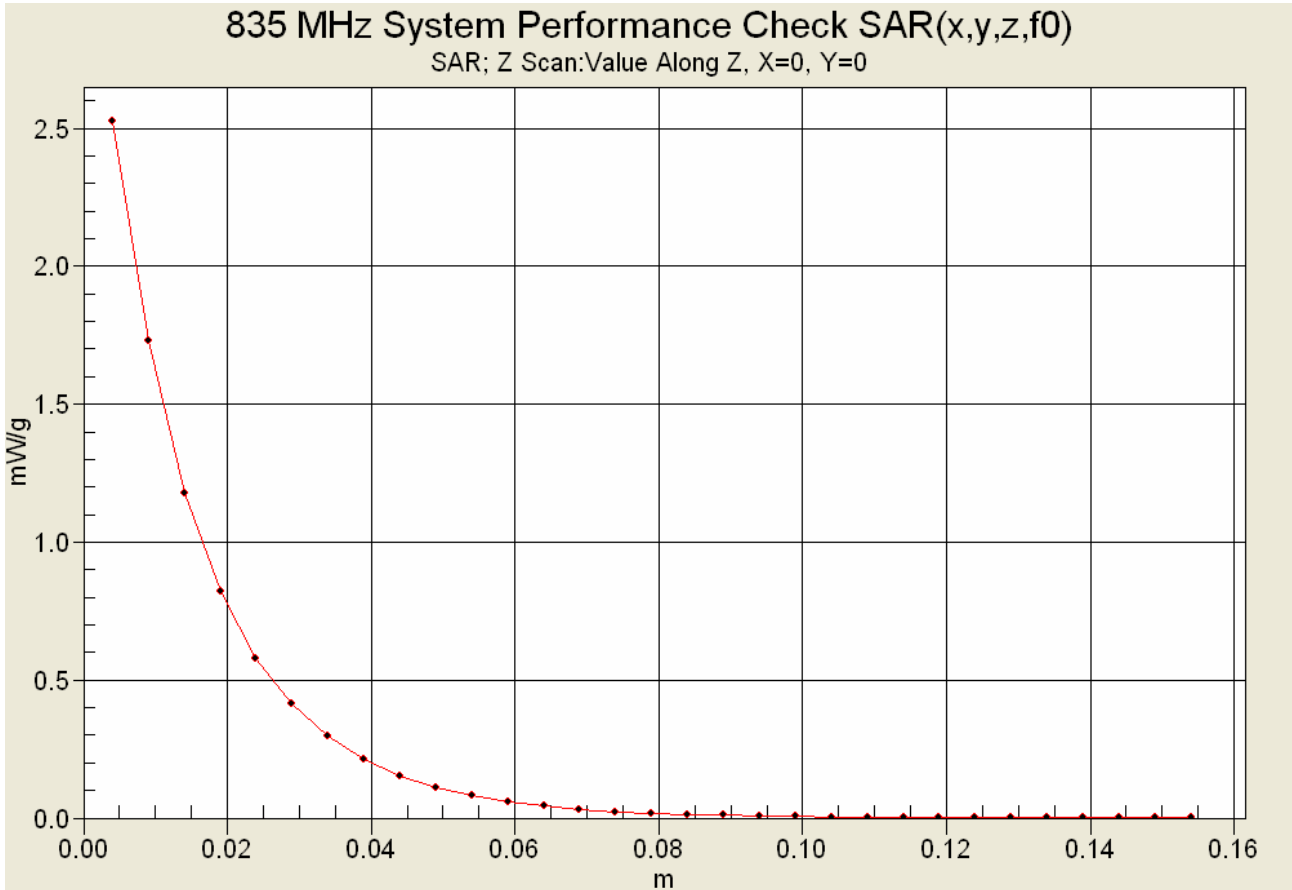
Maximum value of SAR (measured) = 2.63 mW/g





Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Z-Axis Scan



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

Date Tested: 05/21/2010

System Performance Check - 1900 MHz Dipole - Body

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d107; Calibrated: 21/04/2009

Ambient Temp: 23.8°C; Fluid Temp: 23.0°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW

Forward Conducted Power: 250 mW

Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: M1900 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.49 \text{ mho/m}$; $\epsilon_r = 51$; $\rho = 1000 \text{ kg/m}^3$

- Probe: EX3DV4 - SN3600; ConvF(6.53, 6.53, 6.53); Calibrated: 29/04/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 27/04/2010
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DAS4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

1900 MHz System Performance Check

Area Scan (5x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 11.7 mW/g

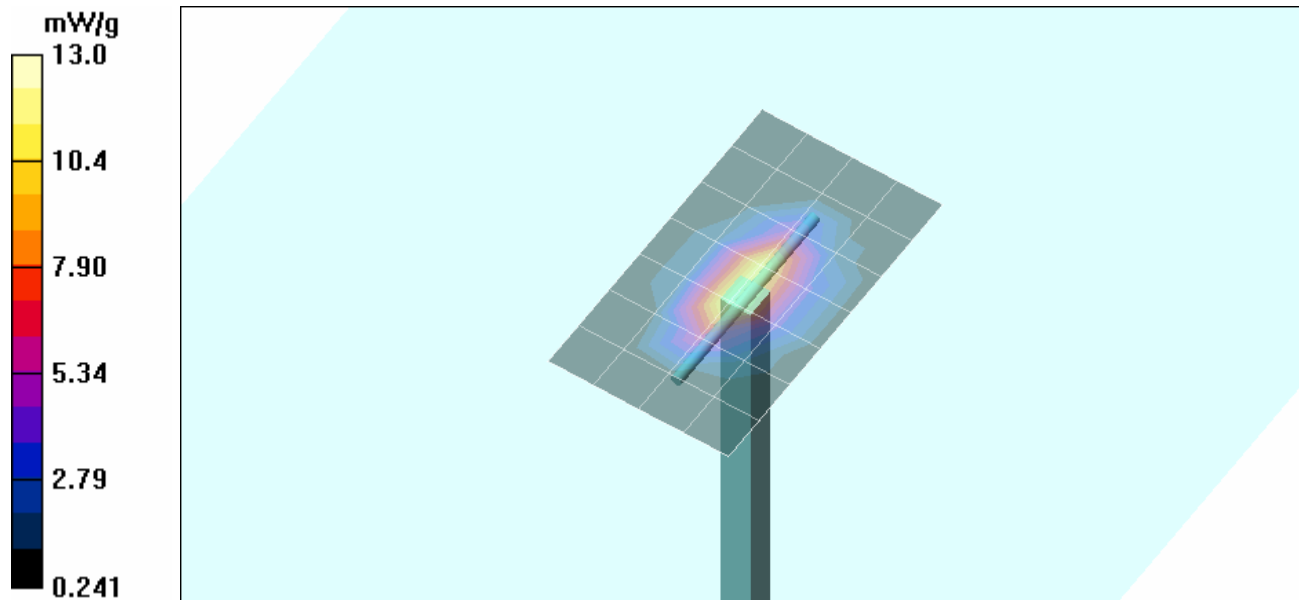
Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$


Reference Value = 92.0 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 19.0 W/kg

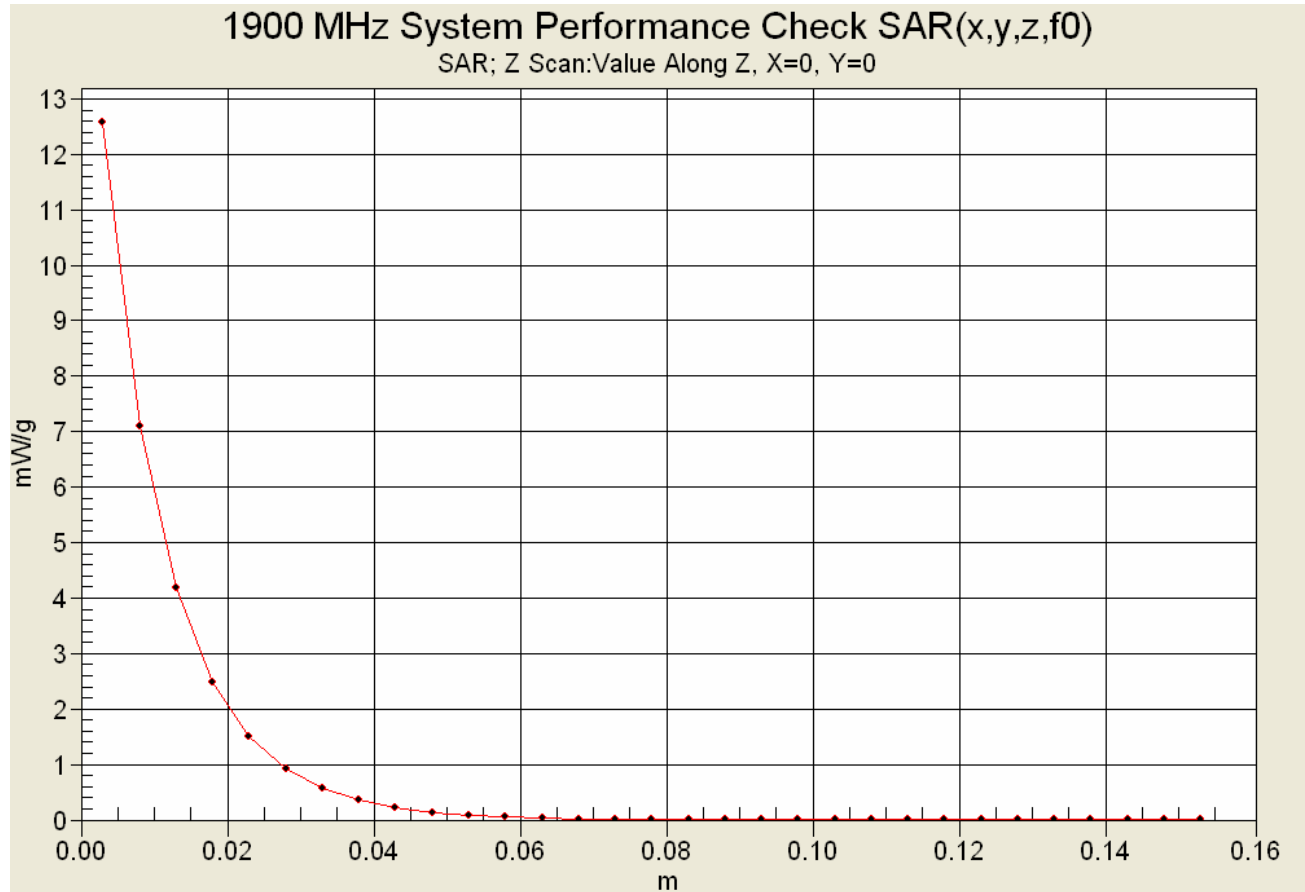
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.34 mW/g



Maximum value of SAR (measured) = 13.0 mW/g



Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Z-Axis Scan



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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS


Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

835 MHz System Performance Check & DUT Evaluation (Body)

Celltech Labs Inc.
 Test Result for UIM Dielectric Parameter
 21/May/2010
 Frequency (GHz)
 FCC_eB FCC Limits for Body Epsilon
 FCC_sB FCC Limits for Body Sigma
 Test_e Epsilon of UIM
 Test_s Sigma of UIM

Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.7350	55.59	0.96	57.78	0.86
0.7450	55.55	0.96	57.83	0.87
0.7550	55.51	0.96	57.68	0.87
0.7650	55.47	0.96	57.58	0.90
0.7750	55.43	0.97	57.60	0.91
0.7850	55.39	0.97	57.23	0.90
0.7950	55.36	0.97	56.97	0.93
0.8050	55.32	0.97	57.23	0.92
0.8150	55.28	0.97	56.98	0.93
0.8250	55.24	0.97	56.98	0.95
0.8350	55.20	0.97	56.91	0.96
0.8450	55.17	0.98	56.87	0.97
0.8550	55.14	0.99	56.78	0.98
0.8650	55.11	1.01	56.79	0.99
0.8750	55.08	1.02	56.68	1.01
0.8850	55.05	1.03	56.50	1.02
0.8950	55.02	1.04	56.56	1.01
0.9050	55.00	1.05	56.27	1.01
0.9150	55.00	1.06	56.19	1.03
0.9250	54.98	1.06	56.17	1.04
0.9350	54.96	1.07	55.97	1.04


Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

1900 MHz System Performance Check & 1880 MHz DUT Evaluation (Body)

Celltech Labs Inc.
 Test Result for UIM Dielectric Parameter
 21/May/2010
 Frequency (GHz)
 FCC_eB FCC Limits for Body Epsilon
 FCC_sB FCC Limits for Body Sigma
 Test_e Epsilon of UIM
 Test_s Sigma of UIM

Freq	FCC_eB	FCC_sB	Test_e	Test_s
1.8000	53.30	1.52	51.73	1.39
1.8100	53.30	1.52	51.45	1.41
1.8200	53.30	1.52	51.59	1.41
1.8300	53.30	1.52	51.61	1.42
1.8400	53.30	1.52	51.29	1.43
1.8500	53.30	1.52	51.35	1.44
1.8600	53.30	1.52	51.32	1.44
1.8700	53.30	1.52	51.33	1.45
1.8800	53.30	1.52	51.06	1.48
1.8900	53.30	1.52	51.32	1.49
1.9000	53.30	1.52	51.04	1.49
1.9100	53.30	1.52	51.41	1.52
1.9200	53.30	1.52	51.11	1.51
1.9300	53.30	1.52	51.07	1.52
1.9400	53.30	1.52	51.18	1.53
1.9500	53.30	1.52	51.00	1.56
1.9600	53.30	1.52	51.05	1.58
1.9700	53.30	1.52	51.03	1.59
1.9800	53.30	1.52	50.92	1.62
1.9900	53.30	1.52	50.95	1.60
2.0000	53.30	1.52	50.97	1.60

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX D - SAR TEST SETUP PHOTOGRAPHS


Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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BODY SAR TEST SETUP PHOTOGRAPHS
Bottom Side of Tablet PC Touching Planar Phantom



	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX E - DIPOLE CALIBRATION

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Calltech**

Certificate No: **D835V2-4d075_Apr09**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d075**

Calibration procedure(s) **QA CAL-05.v7
Calibration procedure for dipole validation kits**

Calibration date: **April 20, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.


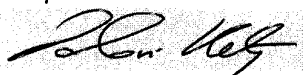
Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

Calibrated by: **Jeton Kastrati** Name: **Jeton Kastrati** Function: **Laboratory Technician**

Approved by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager**

Signature: 


Issued: April 22, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	41.1 \pm 6 %	0.89 mho/m \pm 6 %
Head TSL temperature during test	(22.1 \pm 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.35 mW / g
SAR normalized	normalized to 1W	9.40 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.46 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.54 mW / g
SAR normalized	normalized to 1W	6.16 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.19 mW / g \pm 16.5 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.9 ± 6 %	1.01 mho/m ± 6 %
Body TSL temperature during test	(22.1 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.49 mW / g
SAR normalized	normalized to 1W	9.96 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	9.61 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.64 mW / g
SAR normalized	normalized to 1W	6.56 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	6.39 mW / g ± 16.5 % (k=2)

² Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω - 3.1 j Ω
Return Loss	- 29.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.0 Ω - 4.1 j Ω
Return Loss	- 26.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.401 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 09, 2007

DASY5 Validation Report for Head TSL

Date/Time: 14.04.2009 11:20:38

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d075

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used: $f = 835$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

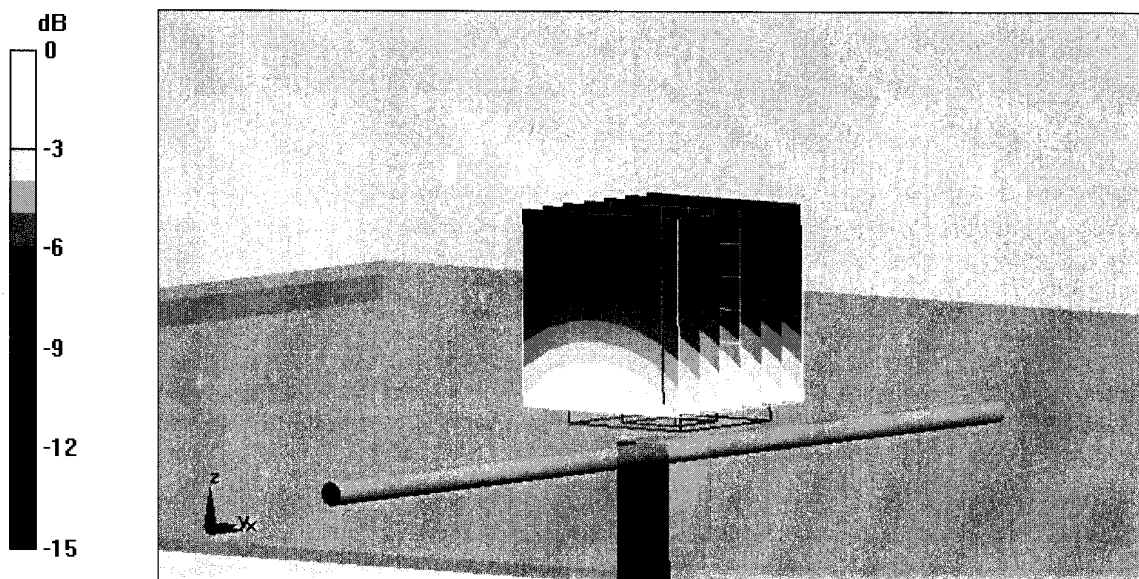
Pin=250mW; dip=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 3.47 W/kg

SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.54 mW/g

Maximum value of SAR (measured) = 2.74 mW/g



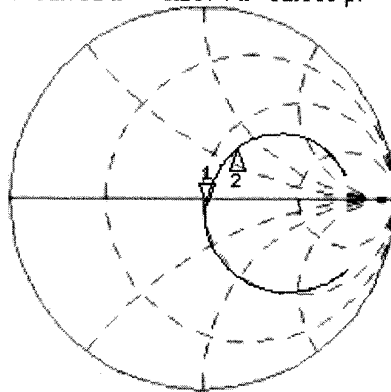
0 dB = 2.74mW/g

Impedance Measurement Plot for Head TSL

14 Apr 2009 09:17:58

CH1 S11 1 U FS 1: 51.762 Ω -3.1074 Ω 61.339 pF 835.000 000 MHz

*
De1
Cor



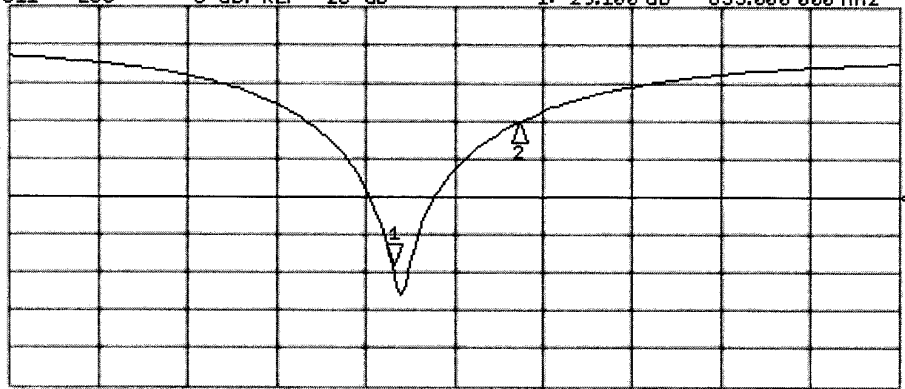
CH1 Markers
2: 60.352 Ω
33.270 Ω
900.000 MHz

Avg
16

↑

CH2 S11 LOG 5 dB/REF -20 dB 1:-29.100 dB 835.000 000 MHz

Cor



CH2 Markers
2:-10.391 dB
900.000 MHz

Avg
16

↑

START 635.000 000 MHz

STOP 1 100.000 000 MHz

DASY5 Validation Report for Body TSL

Date/Time: 20.04.2009 09:57:39

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d075

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900

Medium parameters used: $f = 835$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.9, 5.9, 5.9); Calibrated: 28.04.2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

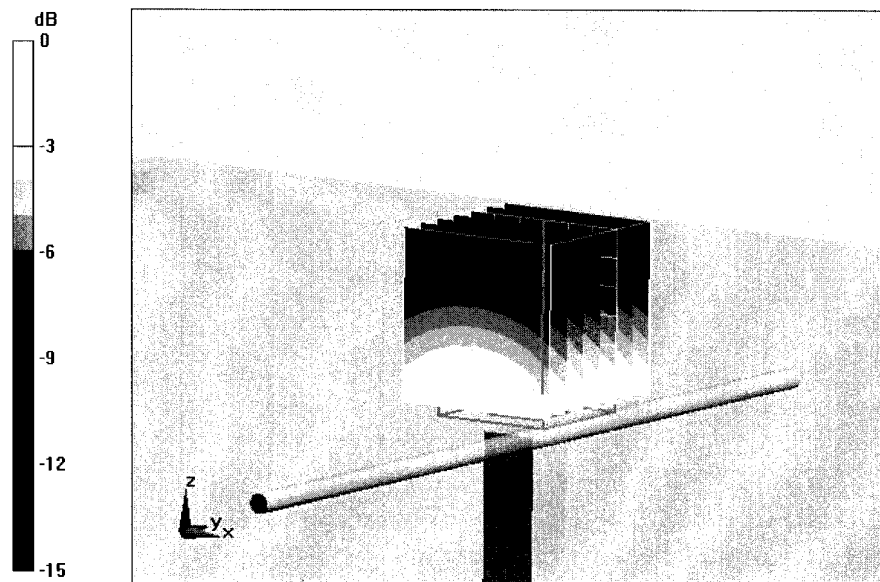
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.4 V/m; Power Drift = -0.00173 dB

Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 2.49 mW/g; SAR(10 g) = 1.64 mW/g

Maximum value of SAR (measured) = 2.9 mW/g

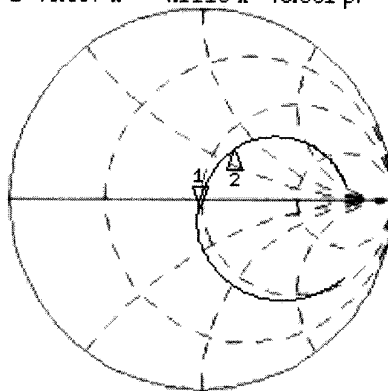


0 dB = 2.9mW/g

Impedance Measurement Plot for Body TSL

20 Apr 2009 08:13:09
CH1 S11 1 U FS 1: 48.037 Ω -4.1113 Ω 46.361 pF 835.000 000 MHz

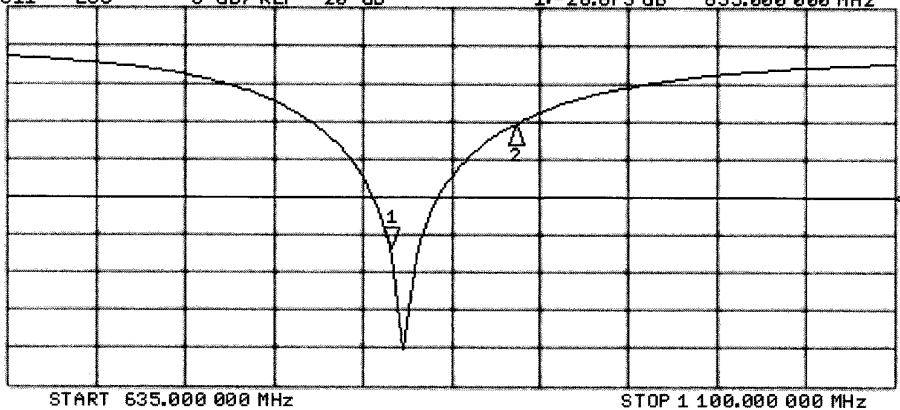
*
 Del
 Cor
 Avg
 16
 ↑



CH1 Markers
 2: 59.180 Ω
 32.740 Ω
 900.000 MHz

CH2 S11 LOG 5 dB/REF -20 dB 1:-26.673 dB 835.000 000 MHz

Cor
 Avg
 16
 ↑



CH2 Markers
 2:-10.507 dB
 900.000 MHz

START 635.000 000 MHz STOP 1 100.000 000 MHz



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Accreditation No.: **SCS 108**

Client **Celltech**

Certificate No: **D1900V2-5d107-Apr09**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d107**

Calibration procedure(s) **QA CAL-05.v7
Calibration procedure for dipole validation kits**

Calibration date: **April 21, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

Calibrated by: **Claudio Leubler** **Laboratory Technician** Signature *[Signature]*

Approved by: **Katja Pokovic** **Technical Manager** *[Signature]*

Issued: April 24, 2009

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	38.6 \pm 6 %	1.47 mho/m \pm 6 %
Head TSL temperature during test	(22.0 \pm 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	10.6 mW / g
SAR normalized	normalized to 1W	42.4 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	40.9 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.45 mW / g
SAR normalized	normalized to 1W	21.8 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	21.4 mW / g \pm 16.5 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.9 ± 6 %	1.56 mho/m ± 6 %
Body TSL temperature during test	(21.3 ± 0.2) °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.6 mW / g
SAR normalized	normalized to 1W	42.4 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	42.1 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.62 mW / g
SAR normalized	normalized to 1W	22.5 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	22.4 mW / g ± 16.5 % (k=2)

² Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.0 \Omega + 5.5 j\Omega$
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$45.9 \Omega + 6.3 j\Omega$
Return Loss	- 22.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.200 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 28, 2008

DASY5 Validation Report for Head TSL

Date/Time: 15.04.2009 15:01:47

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d107

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 28.04.2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0 mm/Zoom Scan (dist=3.0 mm, probe 0deg)

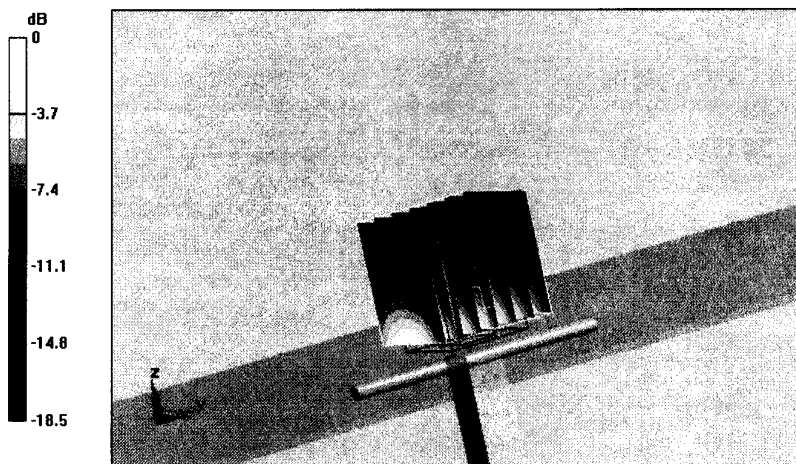
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.7 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 20 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.45 mW/g

Maximum value of SAR (measured) = 13.2 mW/g



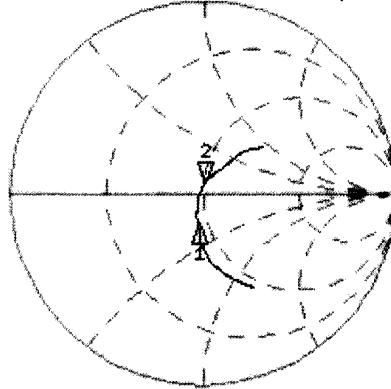
0 dB = 13.2mW/g

Impedance Measurement Plot for Head TSL

15 Apr 2009 15:06:04

CH1 S11 1 U FS 2: 50.000 Ω 5.4746 Ω 458.58 pF 1 900.000 000 MHz

*
Del
Cor



CH1 Markers
1: 45.176 Ω
-14.889 Ω
1.80000 GHz

Avg
16

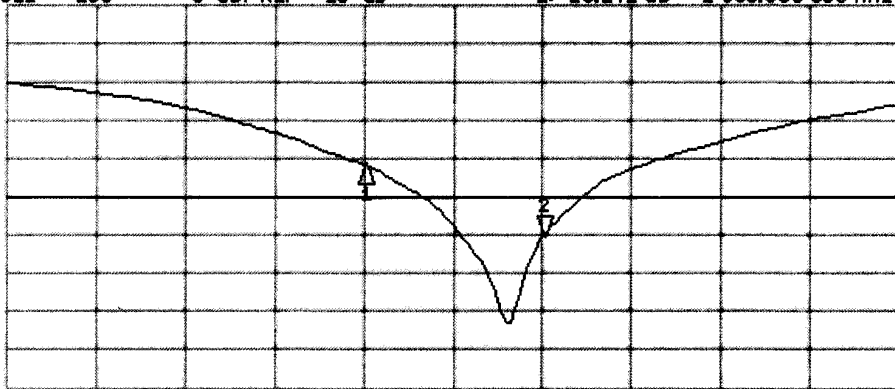
↑

CH2 S11 LOG 5 dB/ REF -20 dB 2: -25.242 dB 1 900.000 000 MHz

Cor

Avg
16

↑



CH2 Markers
1: -15.784 dB
1.80000 GHz

START 1 600.000 000 MHz

STOP 2 100.000 000 MHz

DASY5 Validation Report for Body TSL

Date/Time: 21.04.2009 15:29:55

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d107

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: MSL U10 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.5, 4.5, 4.5); Calibrated: 28.04.2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0mm/Zoom Scan (dist=3.4mm, probe 0deg)

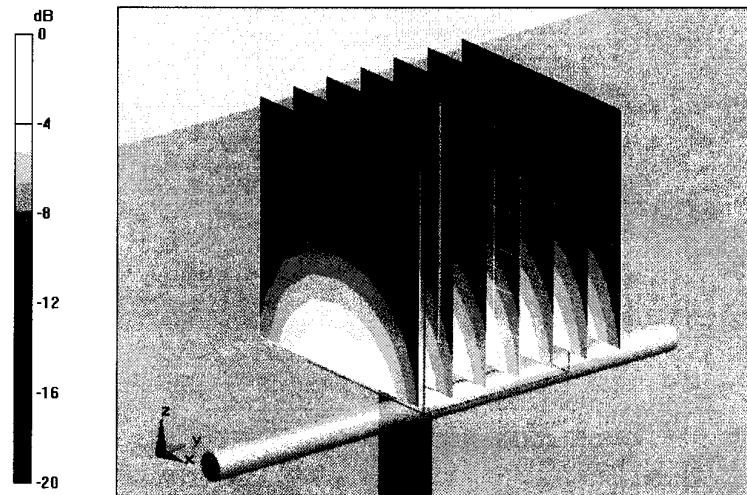
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.6 V/m; Power Drift = -0.00425 dB

Peak SAR (extrapolated) = 18.7 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.62 mW/g

Maximum value of SAR (measured) = 13.5 mW/g



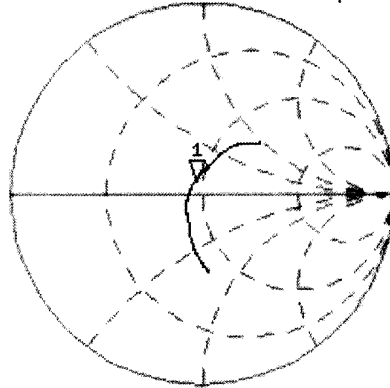
0 dB = 13.5mW/g

Impedance Measurement Plot for Body TSL

21 Apr 2009 11:38:33

CH1 S11 1 U FS 1: 45.930 Ω 6.3203 μ 529.43 pH 1 900.000 000 MHz

*
Del
CA



Avg
16

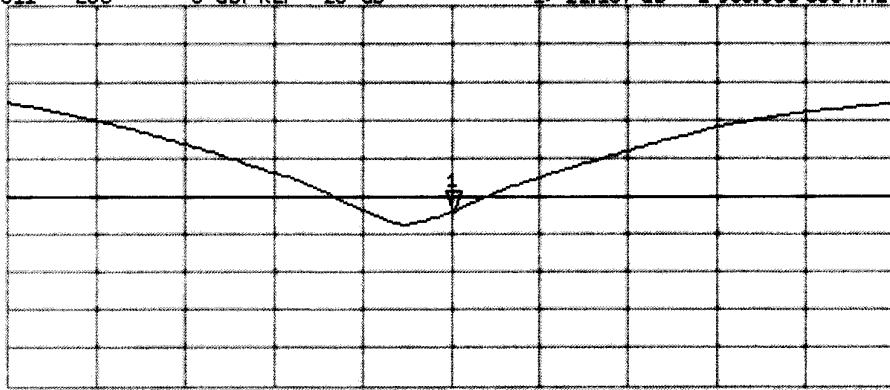
↑

CH2 S11 LOG 5 dB/REF -20 dB 1: -22.137 dB 1 900.000 000 MHz

CA



Avg
16

↑




CENTER 1 900.000 000 MHz

SPAN 400.000 000 MHz

	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX F - PROBE CALIBRATION

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
2010 Celltech Labs Inc.	This document is not to be reproduced in whole or in part without the prior written permission of Celltech Labs Inc.					Page 44 of 45



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Accreditation No.: **SCS 108**

Client **Celltech**

Certificate No: **ET3-1590_Jul09**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1590**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-12.v5, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes**

Calibration date: **July 16, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

Calibrated by:	Name	Function	Signature
	Marcel Fehr	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 16, 2009

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z} = NORM_{x,y,z} * frequency_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to **NORM_{x,y,z} * ConvF** whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1590

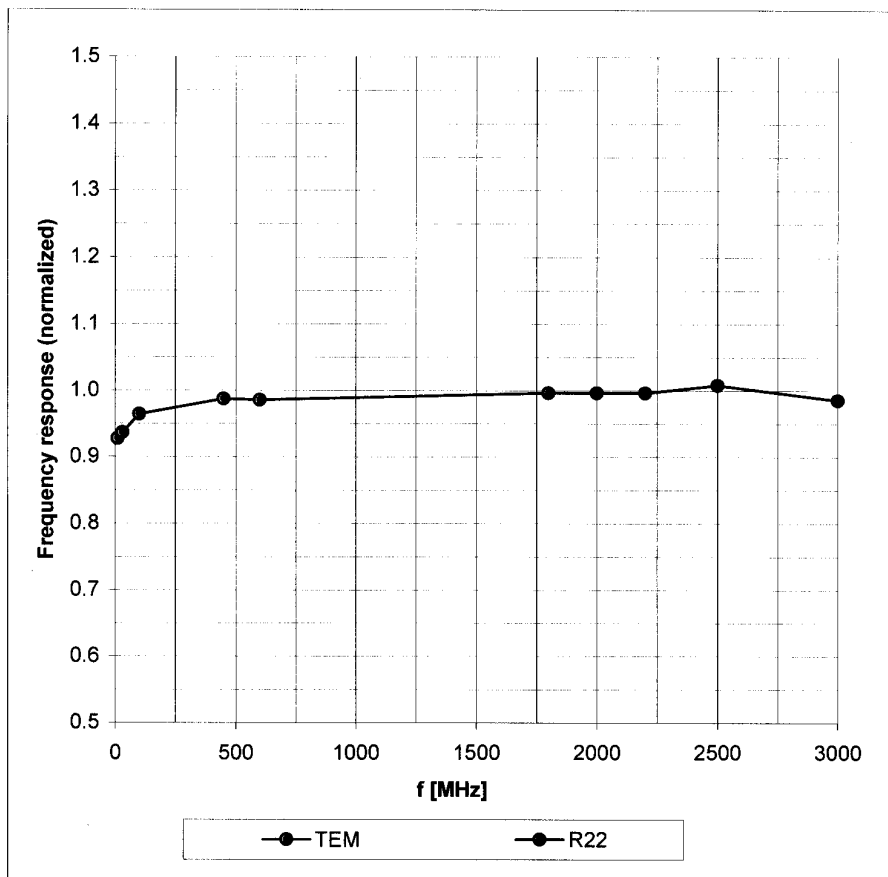
Manufactured:	March 19, 2001
Last calibrated:	July 21, 2008
Recalibrated:	July 16, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

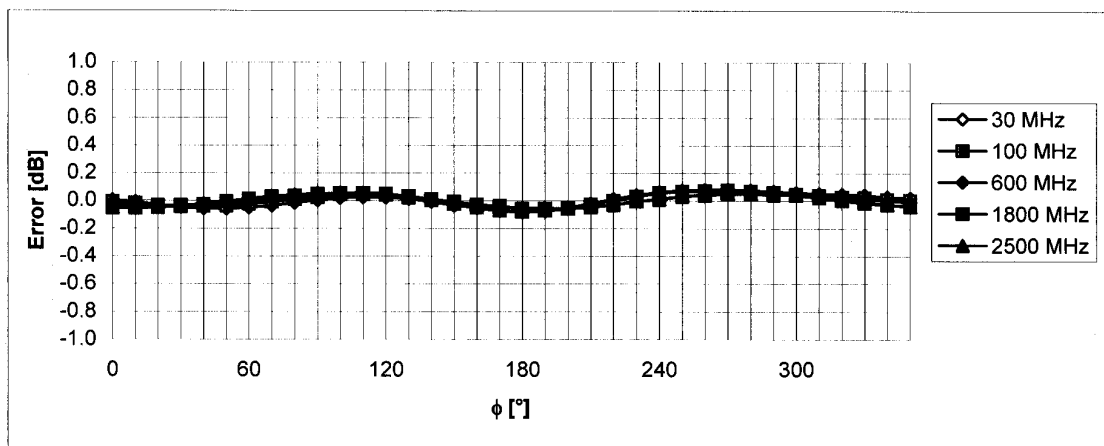
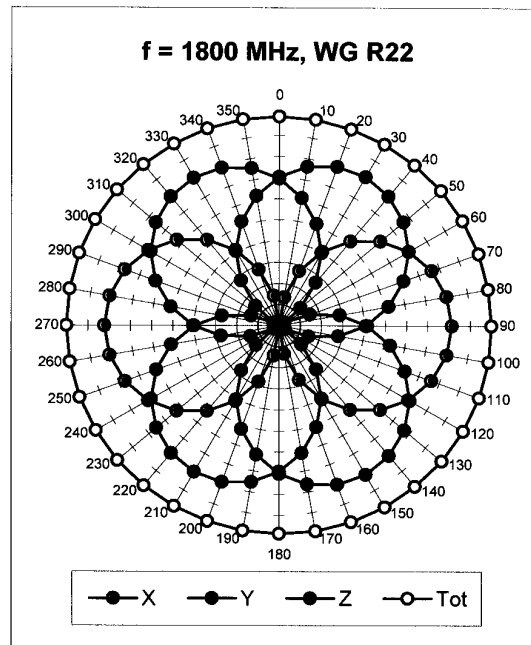
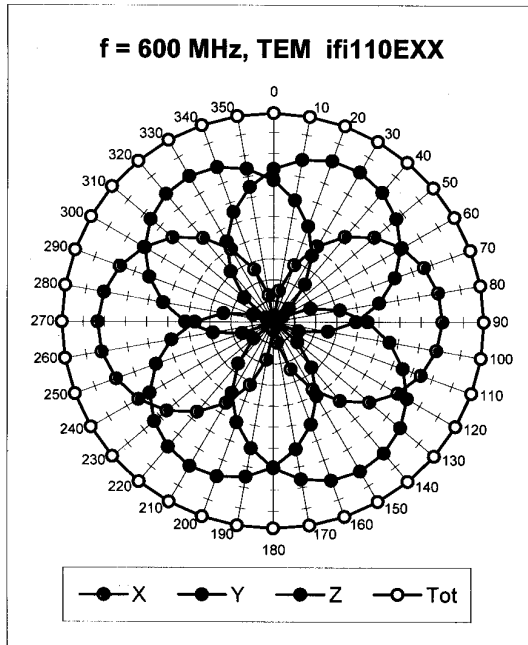
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



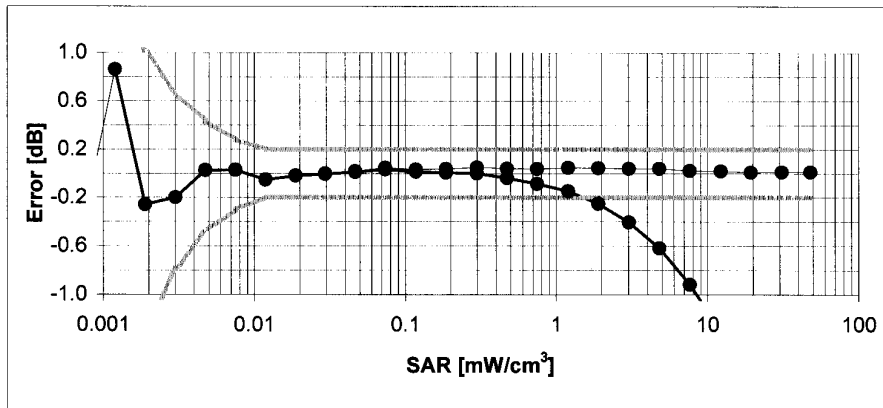
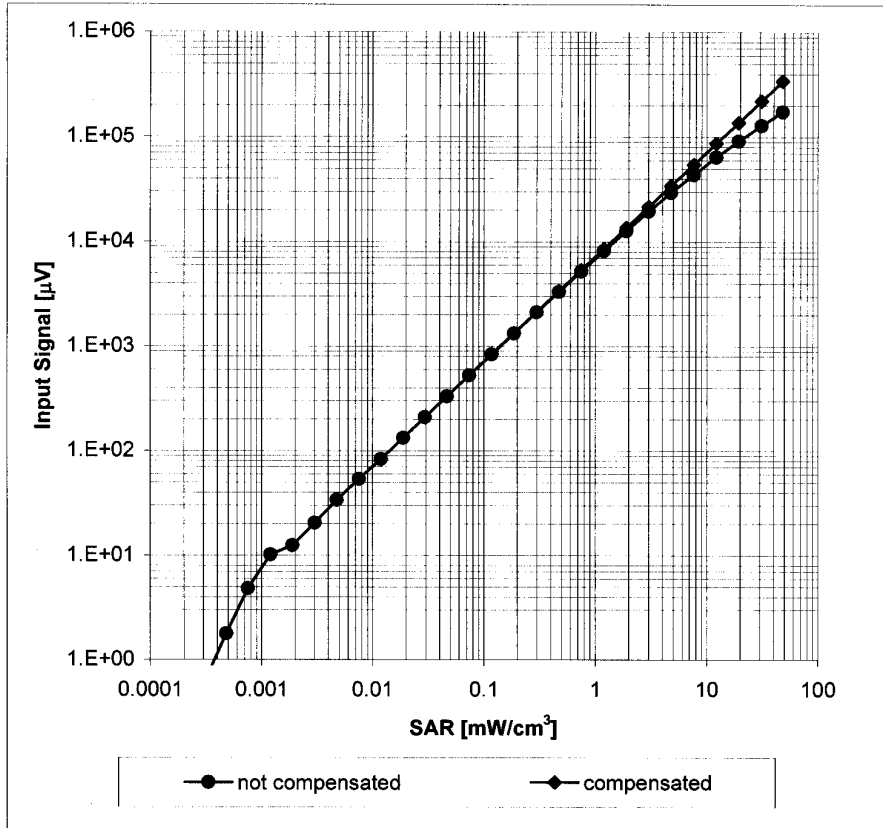
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



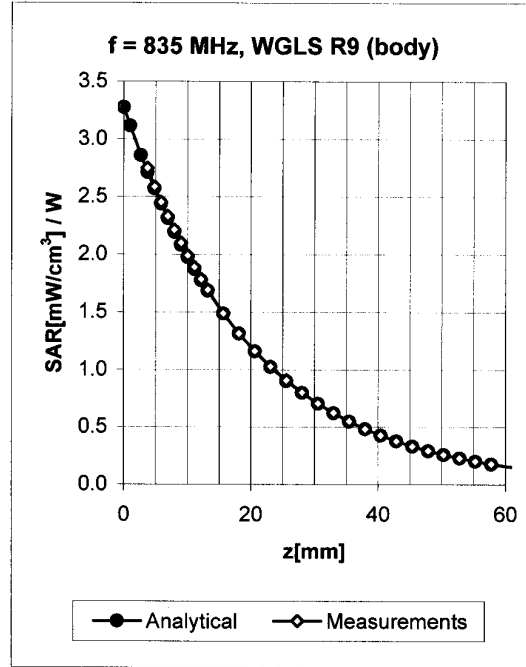
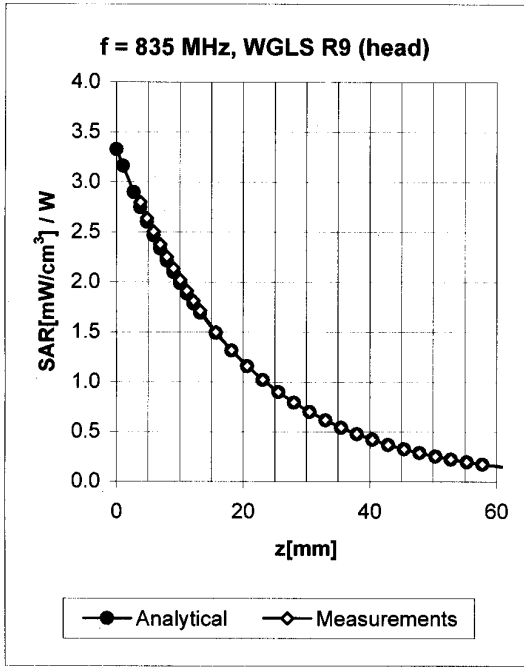
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$)



Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment

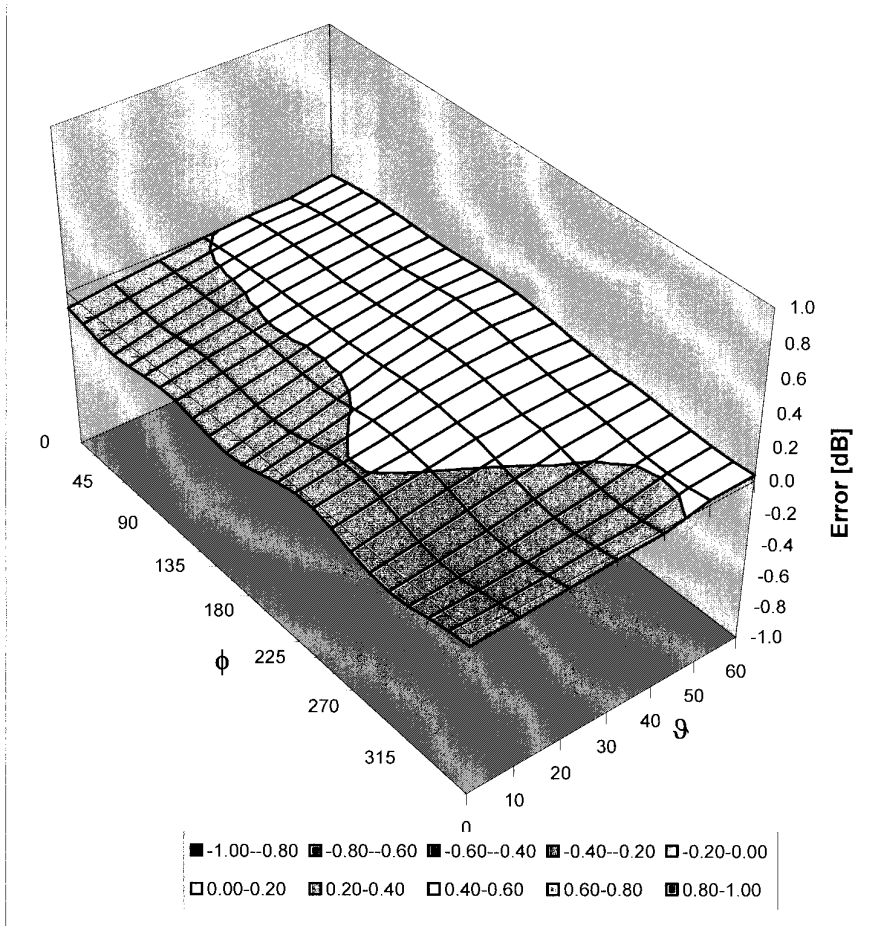


f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
450	± 50 / ± 100	Head	43.5 ± 5%	0.87 ± 5%	0.29	1.90	7.34 ± 13.3% (k=2)
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.37	2.32	6.59 ± 11.0% (k=2)
450	± 50 / ± 100	Body	56.7 ± 5%	0.94 ± 5%	0.22	1.91	7.34 ± 13.3% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.30	2.77	6.34 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ, ϑ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **Celltech**

Certificate No: **EX3-3600_Apr10**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3600**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 29, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

Calibrated by: **Katja Pokovic** Name: **Katja Pokovic** Function: **Technical Manager** Signature:

Approved by: **Niels Kuster** Name: **Niels Kuster** Function: **Quality Manager** Signature:

Issued: April 29, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3600

Manufactured:	January 10, 2007
Last calibrated:	April 28, 2009
Recalibrated:	April 29, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: EX3DV4 SN:3600**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.51	0.51	0.40	$\pm 10.1\%$
DCP (mV) ^B	90.5	88.5	85.2	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	$\pm 1.5\%$
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY - Parameters of Probe: EX3DV4 SN:3600

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	7.79	7.79	7.79	0.74	0.61 ± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	6.79	6.79	6.79	0.59	0.70 ± 11.0%
1950	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	6.46	6.46	6.46	0.57	0.72 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	6.15	6.15	6.15	0.34	0.89 ± 11.0%

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

DASY - Parameters of Probe: EX3DV4 SN:3600

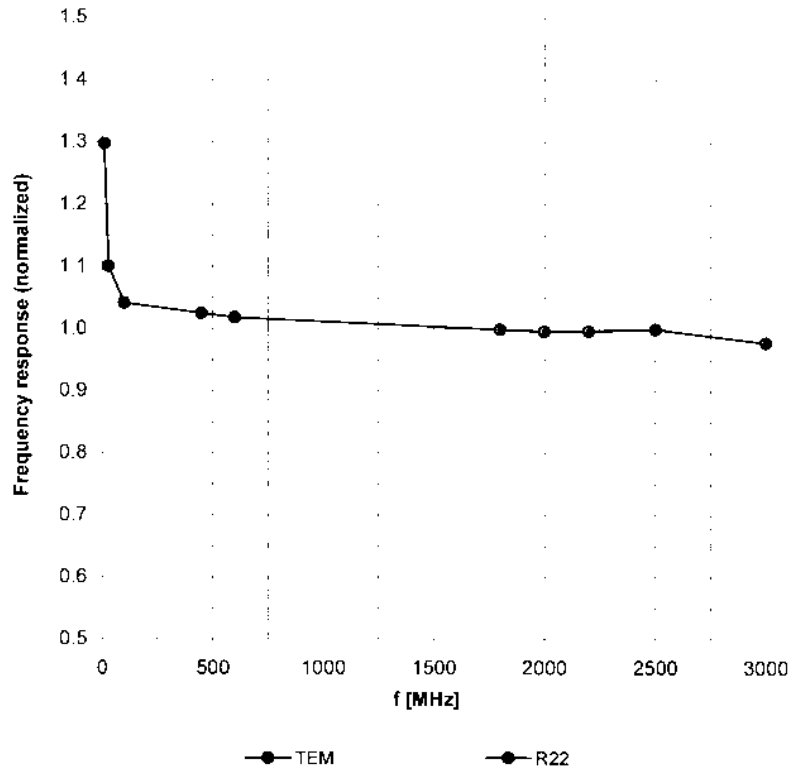
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	7.92	7.92	7.92	0.50	0.77 ± 11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	6.47	6.47	6.47	0.70	0.64 ± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	6.53	6.53	6.53	0.64	0.67 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	6.24	6.24	6.24	0.43	0.87 ± 11.0%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	3.73	3.73	3.73	0.52	1.95 ± 13.1%
5500	± 50 / ± 100	48.6 ± 5%	5.65 ± 5%	3.30	3.30	3.30	0.58	1.95 ± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.44	3.44	3.44	0.63	1.95 ± 13.1%

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Frequency Response of E-Field

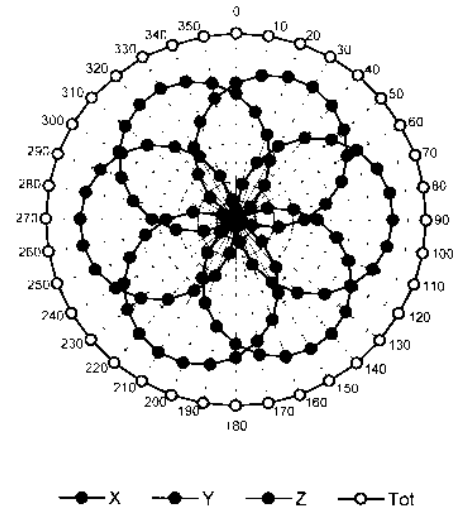
(TEM-Cell:ifi110 EXX, Waveguide: R22)



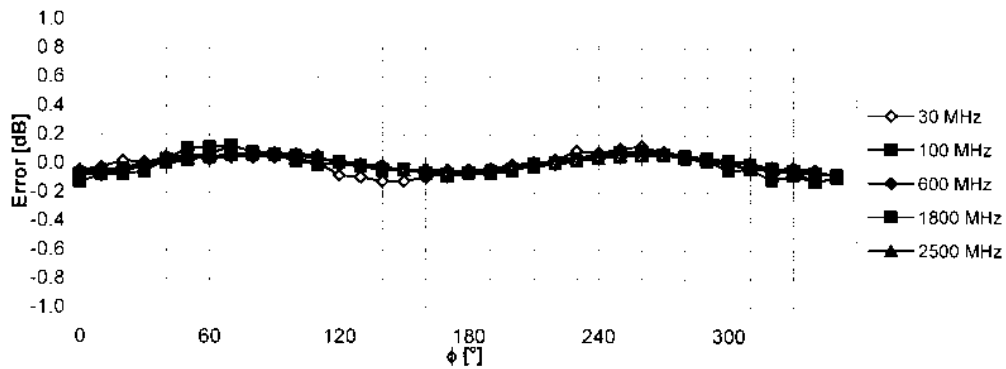
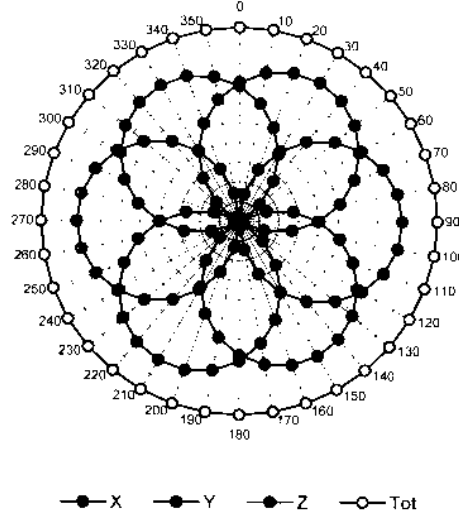
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

f = 600 MHz, TEM ifi110EXX

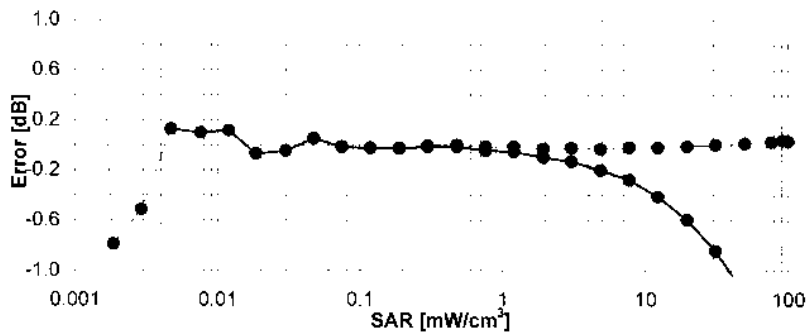
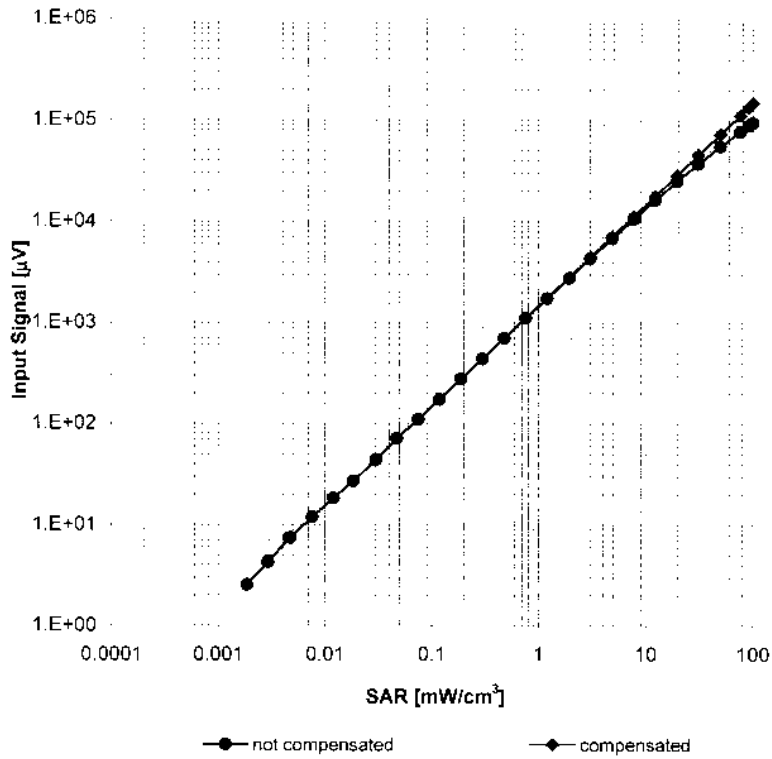


f = 1800 MHz, WG R22



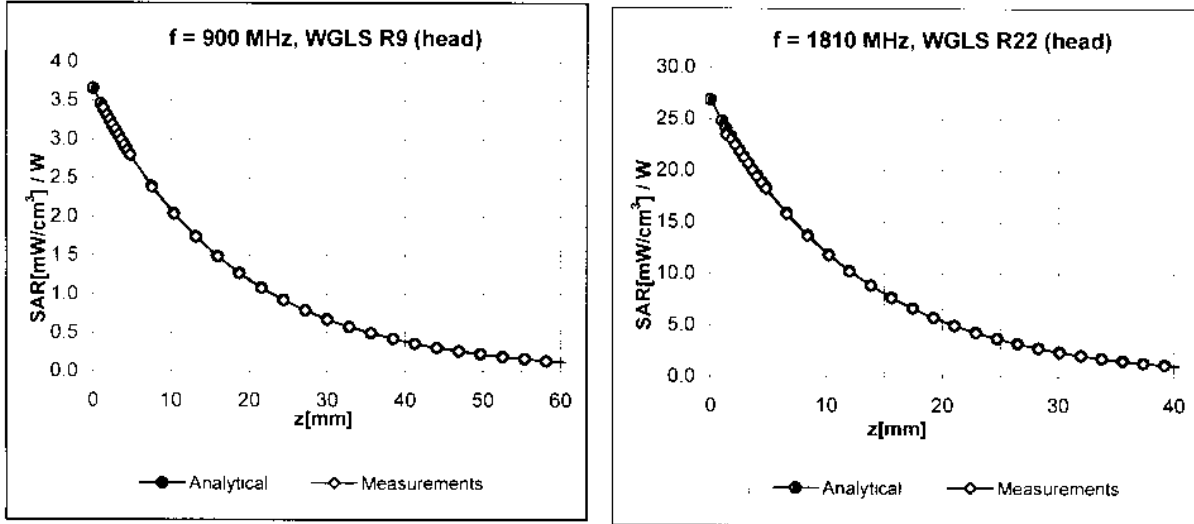
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range f(SAR_{head}) (Waveguide R22, f = 1800 MHz)



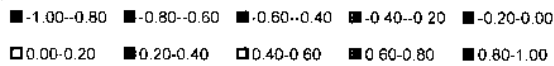
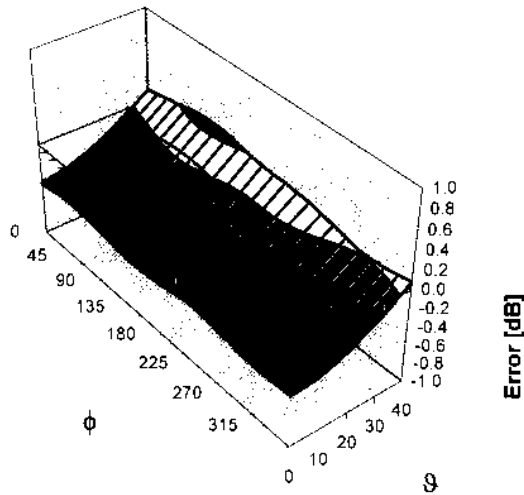
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in HSL



Error (ϕ, θ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ (k=2)

Other Probe Parameters

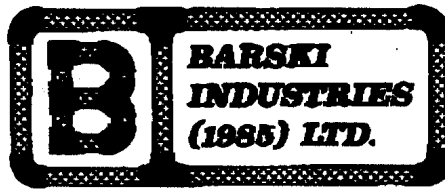
Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

	<u>Date(s) of Evaluation</u> May 21, 2010	<u>Test Report Serial No.</u> 051810KBC-T1019-S24M	<u>Test Report Revision No.</u> Rev. 1.0 (Initial Release)	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 02, 2010	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Gen. Pop. / Uncontrolled	

APPENDIX G - PLANAR PHANTOM CERTIFICATE OF CONFORMITY

Applicant:	GD Itronix Corporation	FCC ID:	KBCIX-GD3000	Model(s):	GD3000	
DUT Type:	Tablet PC w/ WWAN, 802.11a/b/g/n WLAN, Bluetooth & RFID			Class II Permissive Change		
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2378 Westlake Road
Kelowna, B.C. Canada
V1Z-2V2



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: _____

A handwritten signature in black ink, appearing to read 'Daniel Chailer', is written over a horizontal line.

Daniel Chailer



Fiberglass Planar Phantom - Top View



Fiberglass Planar Phantom - Front View



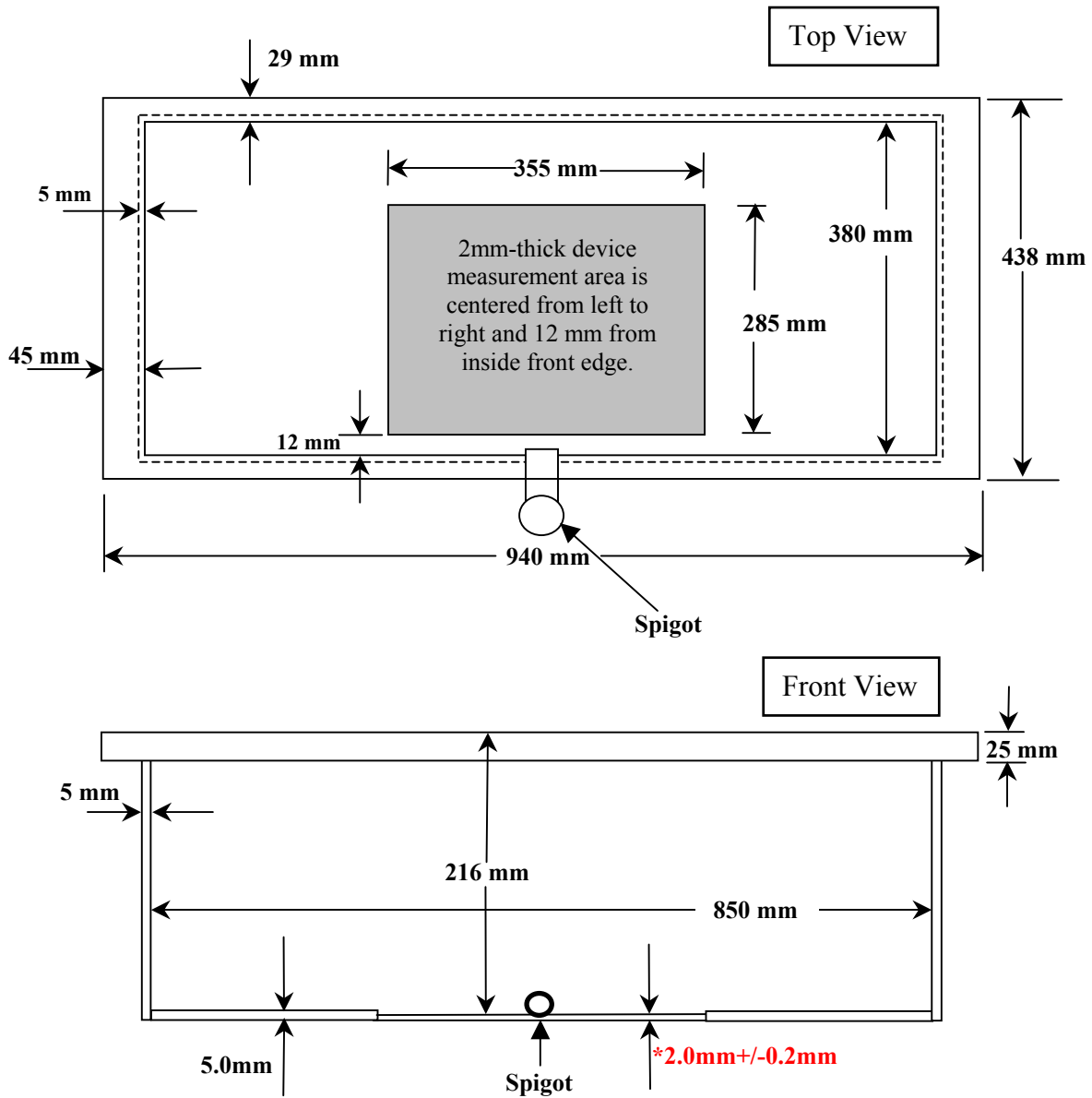
Fiberglass Planar Phantom - Back View



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.**