



ANNEX G
of
ShenZhen Electronic Product Quality Testing Center

CONFORMANCE TEST REPORT FOR
HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SAR08-044

SOLOMON TECHNOLOGY CORP

USB EDGE Modem

Type Name: SEGM-520C

Hardware Version: X520B

Software Version: V1.2.3.13

Additional Position Test

This Annex consists of 16 pages

Date of Report: 2008-09-10





1. Equipments and results of validation testing

Equipments :

name	Type and specification
Signal generator	SML02
Directional coupler	450MHz-3GHz
Amplifier	3W 502(10-2500MHz)
Reference dipole	IXD-080 antenna
	IXD-090 antenna

Results:

Frequency	Target value(1g)(W/kg)	Test value(1g)(W/kg)
850MHz (Sep 9)	10.8	10.496(Body)
1900MHz (Sep 9)	39.7	40.588 (Body)



2. TEST RESULTS

2.1: Dielectric Performance of body Tissue Simulating Liquid

Temperature: 23.0~23.9° C, humidity: 54~60%.			
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)
Target value	850 MHZ	55.0	1.05
Validation value (Sep 9)	850 MHZ	55.31	0.924
Target value	1900 MHZ	53.3	1.52
Validation value (Sep 9)	1900 MHZ	54.17	1.426

2.2 Summary of Measurement Results

SAR Values (GSM 850 MHz Band), Measured against the body, Position 1

Temperature: 23.0~23.9° C, humidity: 55~62%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Bottom frequency	0.636	30.13
Side, Mid frequency	0.873	30.57
Side , Top frequency	0.755	30.87
Side , Mid frequency with EDGE	0.559	30.57
Side , Mid frequency with GPRS	0.761	30.57

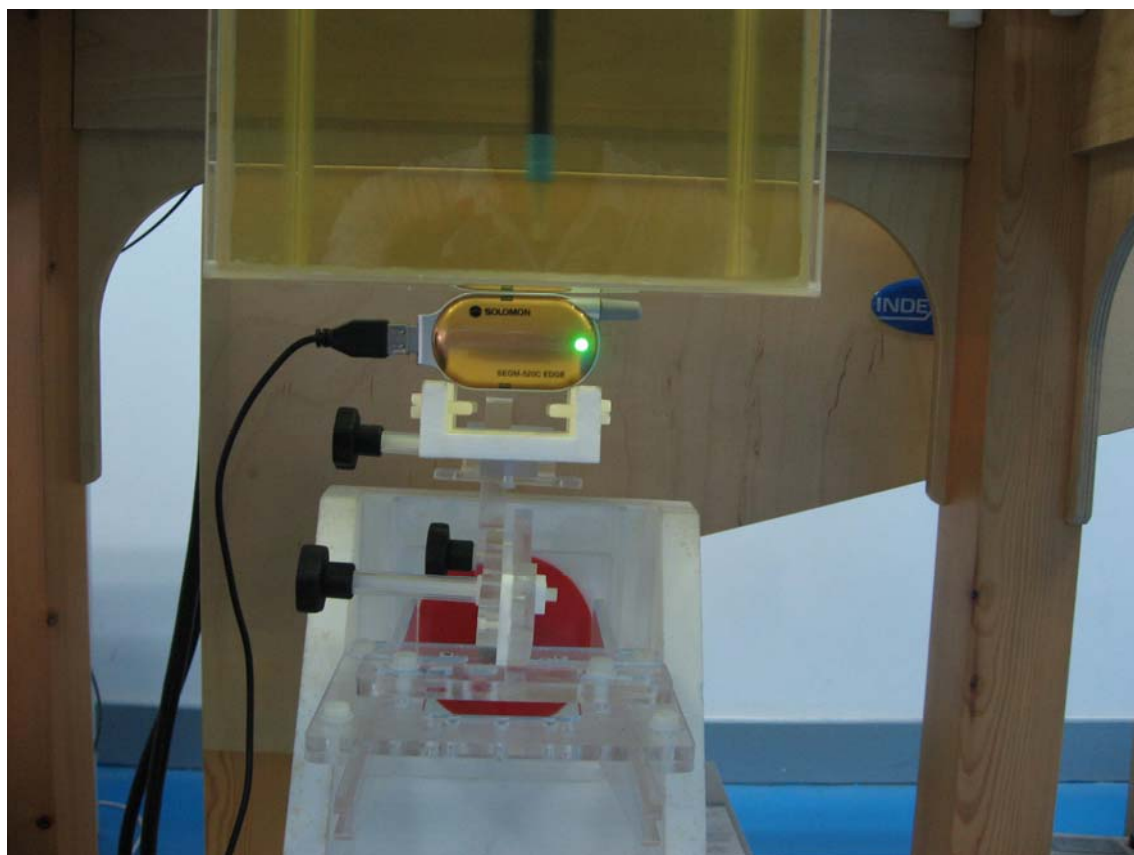
SAR Values (PCS 1900 MHz Band), Measured against the body, Position 1

Temperature: 23.0~23.9° C, humidity: 55~62%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Bottom frequency	0.603	28.57
Side, Mid frequency	0.562	28.50
Side , Top frequency	0.546	27.95
Side , Bottom frequency with EDGE	0.430	28.57
Side , Bottom frequency with GPRS	0.621	28.57



3. The Photo of Test setup

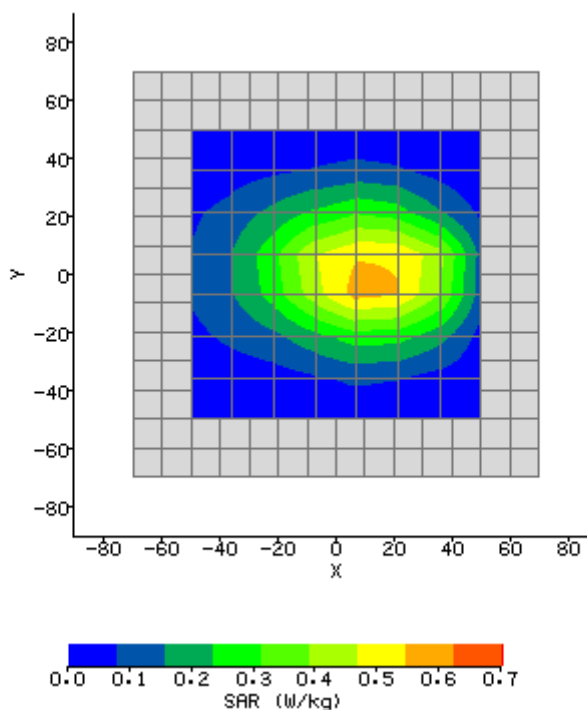
Position 1 (Touching Phantom):





SAR Test GSM 850 Side (Position 1, Bottom Channel)

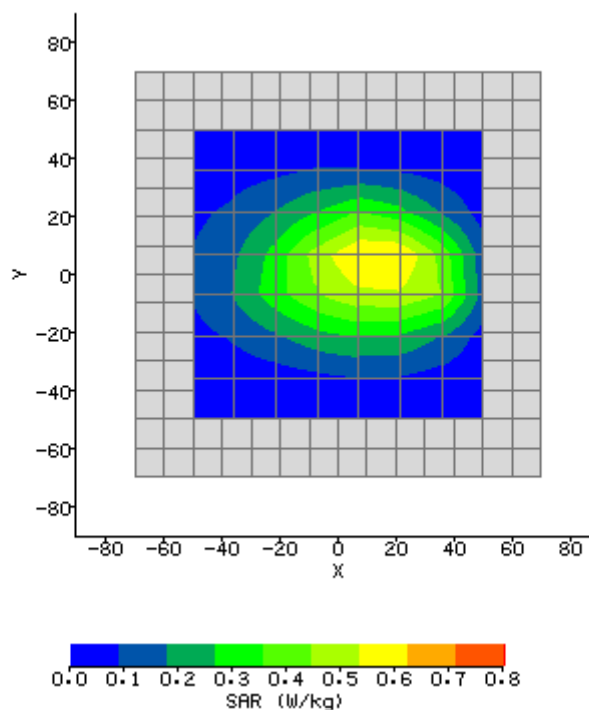
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 15:47:45	DUT Battery Model/No:	
Filename:	GSM850_P4_BODY_1 28.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	12.86 mm
DUT Position:	BODY	Max SAR Y-axis Location:	0.00 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	26.43 V/m
Test Frequency:	835MHz	SAR 1g:	0.636 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.470 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.229 W/kg
Type of Modulation:	GMSK	SAR End:	0.222 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	-2.93 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test GSM 850 Side (Position 1, Middle Channel)

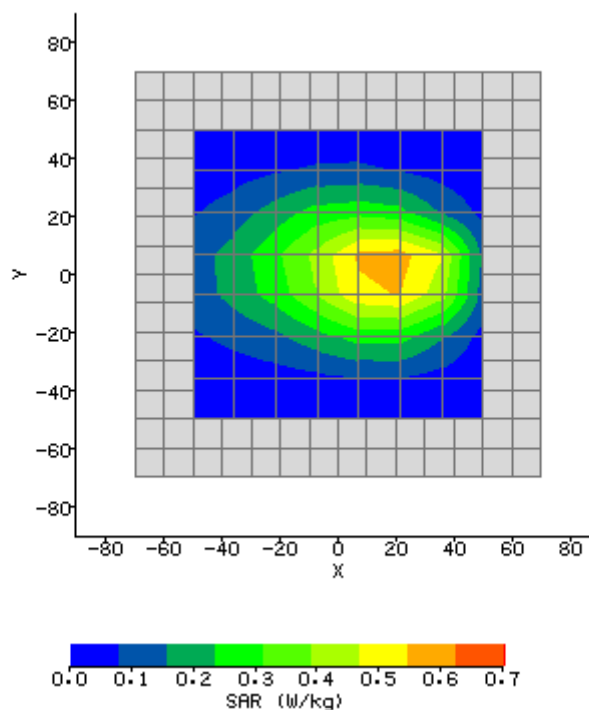
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.01dB
Date / Time:	2008-9-9 15:57:45	DUT Battery Model/No:	
Filename:	GSM850_P4_BODY_1 90.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	12.86 mm
DUT Position:	BODY	Max SAR Y-axis Location:	2.86 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	27.62 V/m
Test Frequency:	835MHz	SAR 1g:	0.873 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.563 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.237 W/kg
Type of Modulation:	GMSK	SAR End:	0.237 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	0.28 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test GSM 850 Side (Position 1, Top Channel)

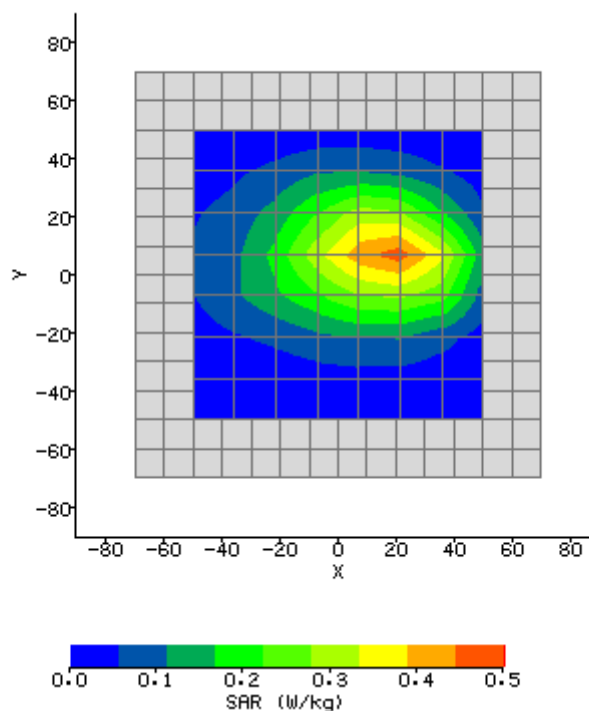
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 16:08:25	DUT Battery Model/No:	
Filename:	GSM850_P4_BODY_2 51.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	15.71 mm
DUT Position:	BODY	Max SAR Y-axis Location:	1.43 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	26.22 V/m
Test Frequency:	835MHz	SAR 1g:	0.755 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.507 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.217 W/kg
Type of Modulation:	GMSK	SAR End:	0.222 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	2.59 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test GSM 850 Side (Position 1, Mid Channel with Edge)

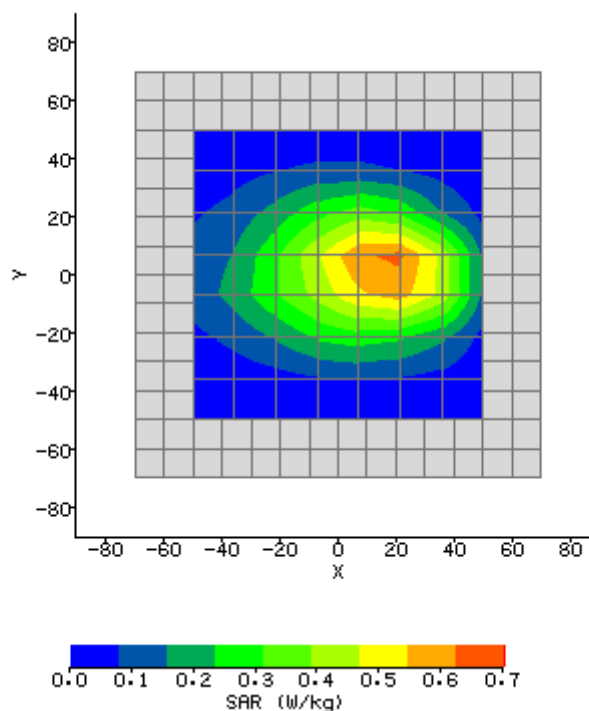
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.03dB
Date / Time:	2008-9-9 16:32:28	DUT Battery Model/No:	
Filename:	GSM850_P4_BODY_1 90_EDGE.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	17.14 mm
DUT Position:	BODY	Max SAR Y-axis Location:	7.14 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	22.54 V/m
Test Frequency:	835MHz	SAR 1g:	0.559 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.377 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.205 W/kg
Type of Modulation:	8PSK	SAR End:	0.206 W/kg
Modn. Duty Cycle:	4	SAR Drift during Scan:	1.92 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test GSM 850 Side (Position 1, Mid Channel with GPRS)

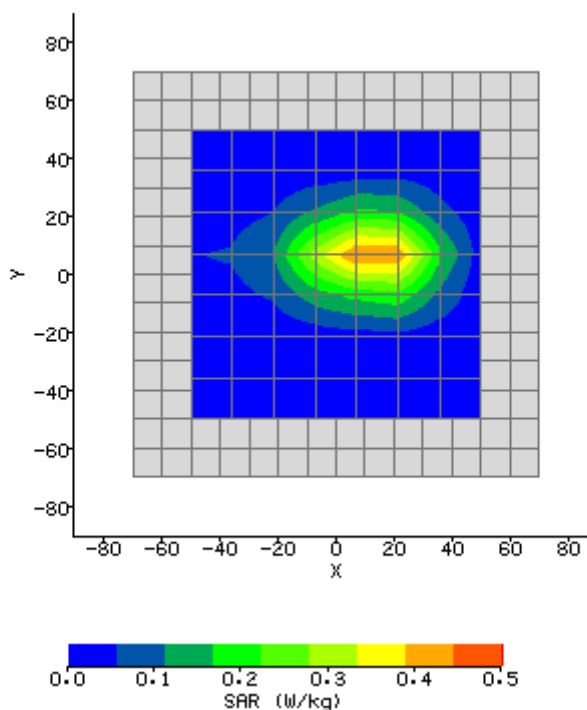
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.01dB
Date / Time:	2008-9-9 16:18:13	DUT Battery Model/No:	
Filename:	GSM850_P4_BODY_1 90_GPRS.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	15.71 mm
DUT Position:	BODY	Max SAR Y-axis Location:	1.43 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	27.02 V/m
Test Frequency:	835MHz	SAR 1g:	0.761 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.525 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.232 W/kg
Type of Modulation:	GMSK	SAR End:	0.234 W/kg
Modn. Duty Cycle:	4	SAR Drift during Scan:	0.54 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test PCS 1900 Side (Position 1, Bottom Channel)

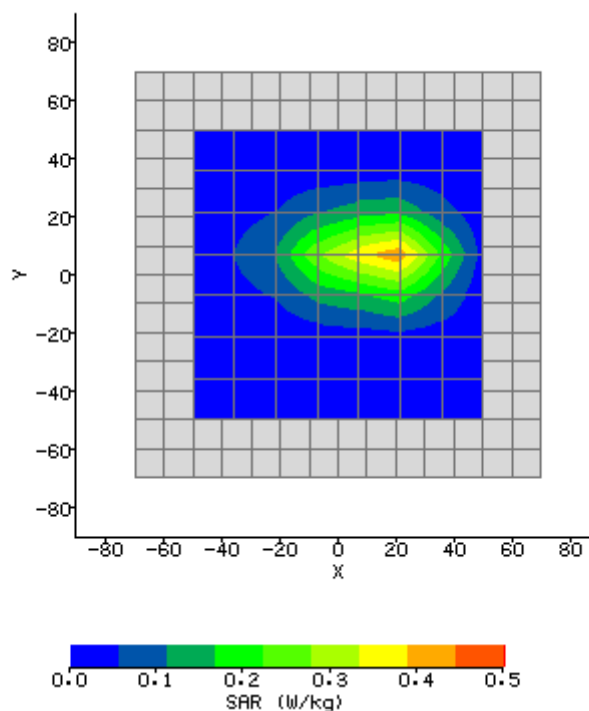
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 16:45:53	DUT Battery Model/No:	
Filename:	GSM1900_P4_BODY_512.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	12.86 mm
DUT Position:	BODY	Max SAR Y-axis Location:	7.14 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	18.45 V/m
Test Frequency:	1900MHz	SAR 1g:	0.603 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.334 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	0.091 W/kg
Type of Modulation:	GMSK	SAR End:	0.096 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	4.64 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test PCS 1900 Side (Position 1, Middle Channel)

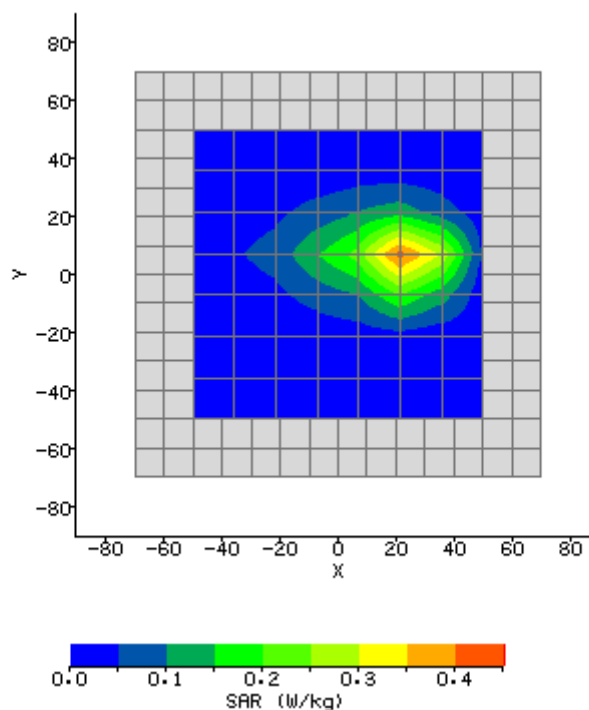
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 16:57:03	DUT Battery Model/No:	
Filename:	GSM1900_P4_BODY_661.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	17.14 mm
DUT Position:	BODY	Max SAR Y-axis Location:	7.14 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	18.25 V/m
Test Frequency:	1900MHz	SAR 1g:	0.562 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.296 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	0.082 W/kg
Type of Modulation:	GMSK	SAR End:	0.085 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	3.67 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test PCS 1900 Side (Position 1, Top Channel)

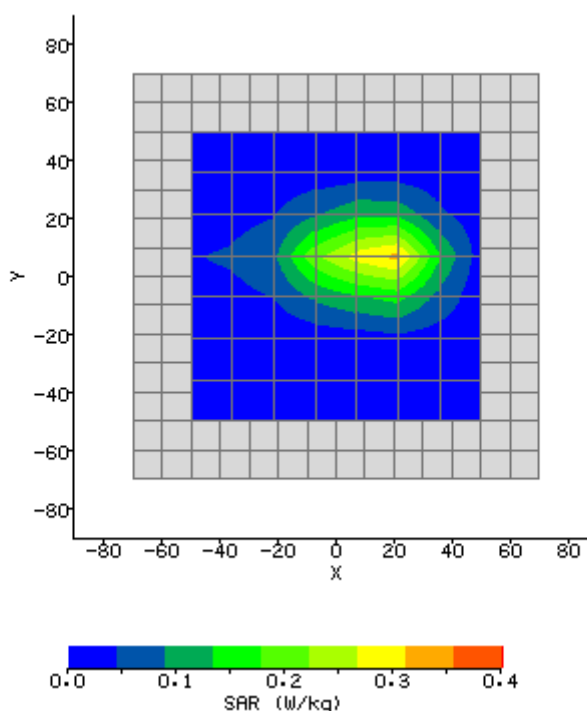
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 17:06:57	DUT Battery Model/No:	
Filename:	GSM1900_P4_BODY_810.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	22.86 mm
DUT Position:	BODY	Max SAR Y-axis Location:	5.71 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	17.63 V/m
Test Frequency:	1900MHz	SAR 1g:	0.546 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.265 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	0.069 W/kg
Type of Modulation:	GMSK	SAR End:	0.070 W/kg
Modn. Duty Cycle:	8	SAR Drift during Scan:	2.11 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test PCS 1900 Side (Position 1, Bottom Channel with Edge)

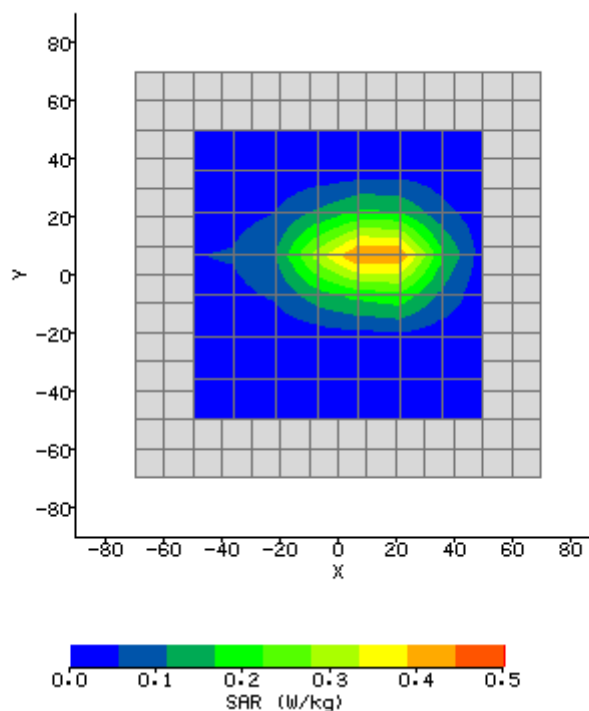
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.02dB
Date / Time:	2008-9-9 17:17:56	DUT Battery Model/No:	
Filename:	GSM1900_P4_BODY_512_EDGE.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	15.71 mm
DUT Position:	BODY	Max SAR Y-axis Location:	7.14 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	15.68 V/m
Test Frequency:	1900MHz	SAR 1g:	0.430 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.247 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	0.097 W/kg
Type of Modulation:	8PSK	SAR End:	0.097 W/kg
Modn. Duty Cycle:	4	SAR Drift during Scan:	1.14 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





SAR Test PCS 1900 Side (Position 1, Bottom Channel with GPRS)

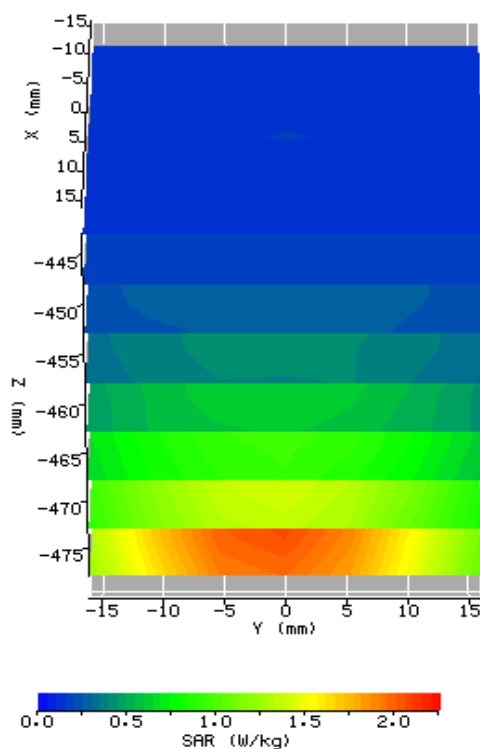
System / software:	SARA2 / 2.54 VPM	Input Power Drift:	0.01dB
Date / Time:	2008-9-9 17:51:18	DUT Battery Model/No:	
Filename:	GSM1900_P4_BODY_ 512_GPRS.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	BODY LIQUID
Device Under Test:	CARD	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	12.82 mm
DUT Position:	BODY	Max SAR Y-axis Location:	7.10 mm
Antenna Configuration:	BUILD INSIDE	Max E Field:	19.17 V/m
Test Frequency:	1900MHz	SAR 1g:	0.621 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	0.340 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	0.099 W/kg
Type of Modulation:	GMSK	SAR End:	0.101 W/kg
Modn. Duty Cycle:	4	SAR Drift during Scan:	2.07 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	MAX POWER	Extrapolation:	poly4





System Check Body 850MHz

System / software:	SARA2 / 2.40 VPM	Input Power Drift:	0.01dB
Date / Time:	2008-9-9 13:24:17	DUT Battery Model/No:	
Filename:	System Cheek_Body _850MHz.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	Body tissue
Device Under Test:	IXD-090antenna (250mw)	Relative Permittivity:	55.31
Relative Humidity:	55%	Conductivity:	.924
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	0.00 mm
DUT Position:	850_Body	Max SAR Y-axis Location:	0.00 mm
Antenna Configuration:	IXD-090antenna	Max E Field:	45.21 V/m
Test Frequency:	850MHz	SAR 1g:	2.624 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	1.717 W/kg
Conversion Factors:	.290 / .290 / .290	SAR Start:	0.570 W/kg
Type of Modulation:	/	SAR End:	0.570 W/kg
Modn. Duty Cycle:	1	SAR Drift during Scan:	0.44 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	24dBm	Extrapolation:	poly4





System Check Body 1900MHz

System / software:	SARA2 / 2.40 VPM	Input Power Drift:	0.01dB
Date / Time:	2008-9-9 13:17:51	DUT Battery Model/No:	
Filename:	System Cheek_Body _1900MHz.txt	Probe Serial Number:	0201
Ambient Temperature:	23.1°C	Liquid Simulant:	Body tissue
Device Under Test:	IXD-080antenna (250mw)	Relative Permittivity:	54.17
Relative Humidity:	55%	Conductivity:	1.426
Phantom S/No:	HeadBox75mm.csv	Liquid Temperature:	23.1°C
Phantom Rotation:	0°	Max SAR X-axis Location:	0.00 mm
DUT Position:	1900_Body	Max SAR Y-axis Location:	0.00 mm
Antenna Configuration:	IXD-080antenna	Max E Field:	73.55 V/m
Test Frequency:	1900MHz	SAR 1g:	10.147 W/kg
Air Factors:	354 / 376 / 470	SAR 10g:	5.502 W/kg
Conversion Factors:	.401 / .401 / .401	SAR Start:	1.582 W/kg
Type of Modulation:	/	SAR End:	1.581 W/kg
Modn. Duty Cycle:	1	SAR Drift during Scan:	-0.75 %
Diode Compression Factors (V*200):	20 / 20 / 20	Probe battery last changed:	(2.90V)
Input Power Level:	24dBm	Extrapolation:	poly4

