Annex A Photographs of Test Setup

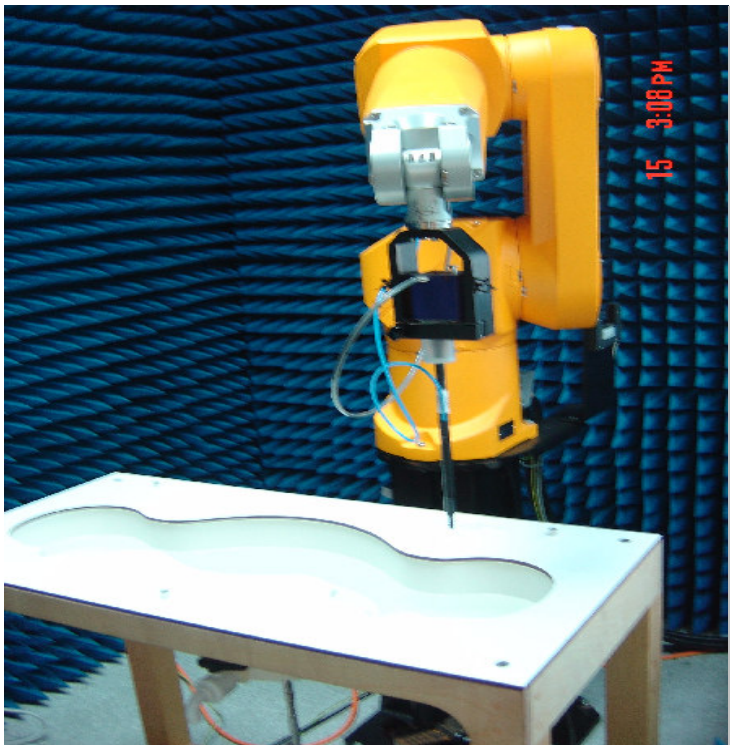


Fig.A-1 Photograph of the SAR measurement System

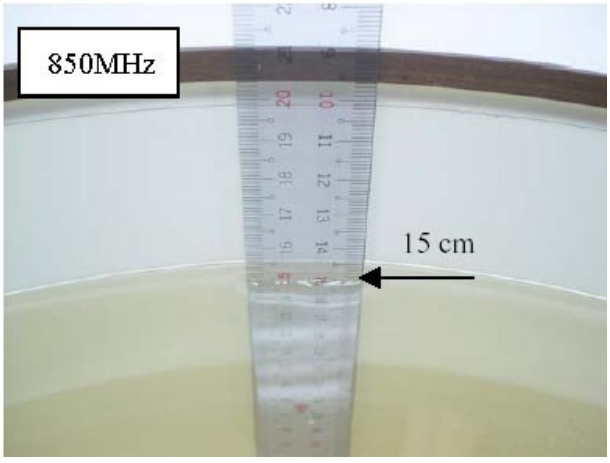


Fig.A-2 Photograph of the Tissue Equivalent Liquid depth 15cm for BodyWorn

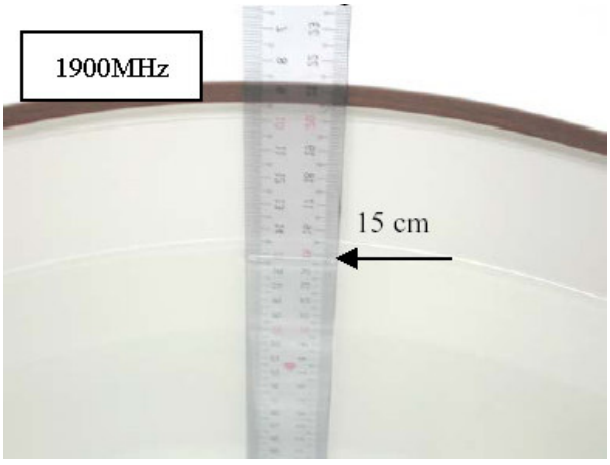


Fig.A-3 Photograph of the Tissue Equivalent Liquid depth 15cm for BodyWorn

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

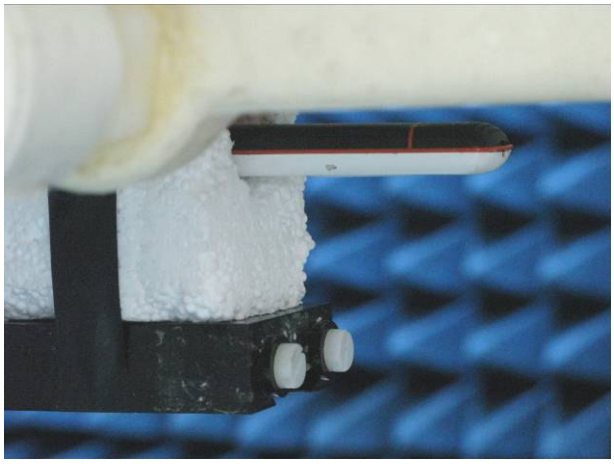


Fig.A-4a Photograph of the BodyWorn status P1

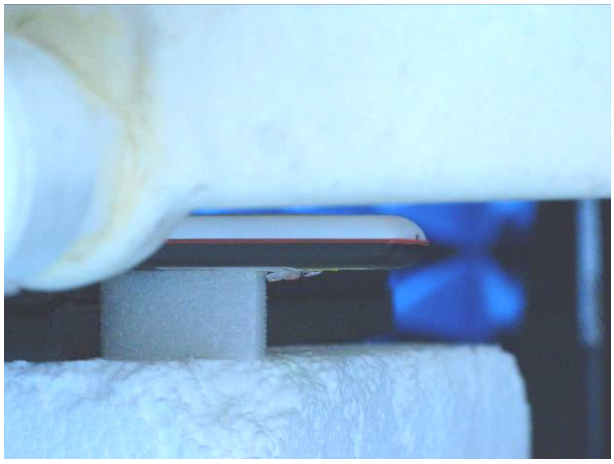


Fig.A-4b Photograph of the BodyWorn status P2

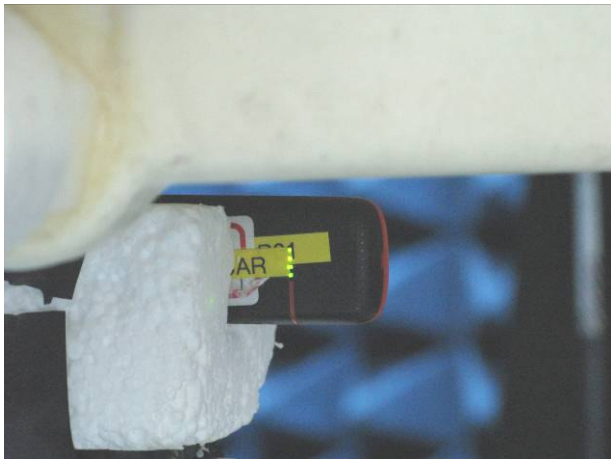


Fig.A-4c Photograph of the BodyWorn status P3

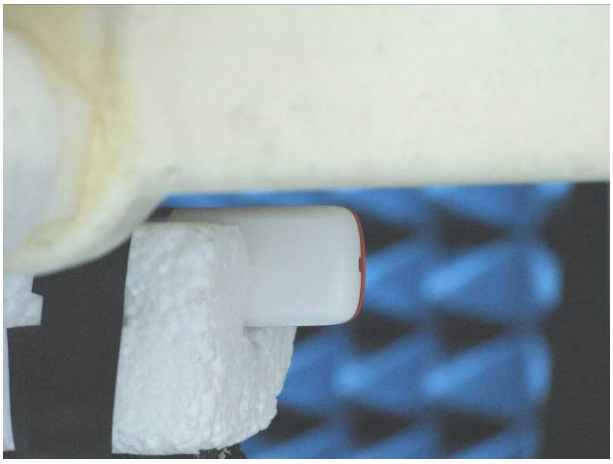


Fig.A-4d Photograph of the BodyWorn status P4

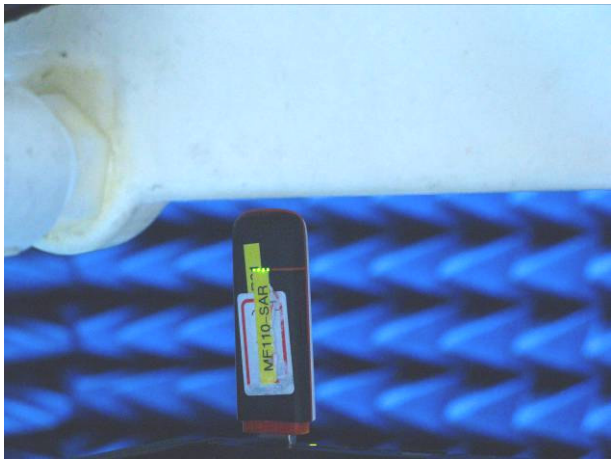


Fig.A-4e Photograph of the BodyWorn status P5

Annex B Photographs of EUT

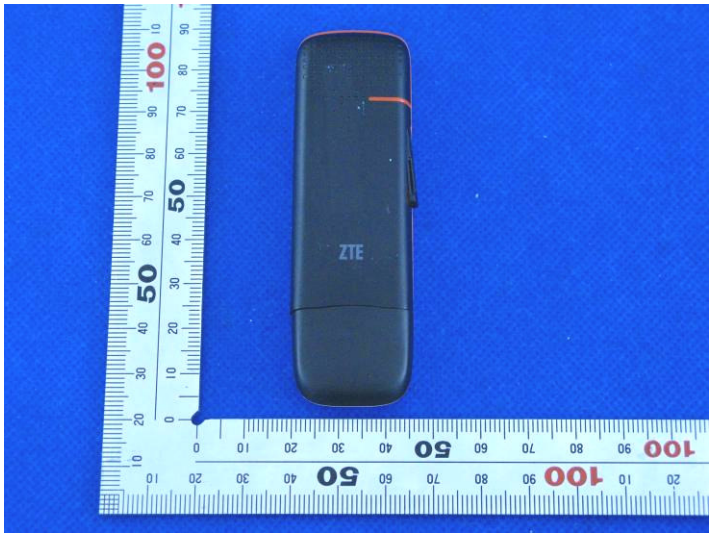


Fig.B-1 Front View

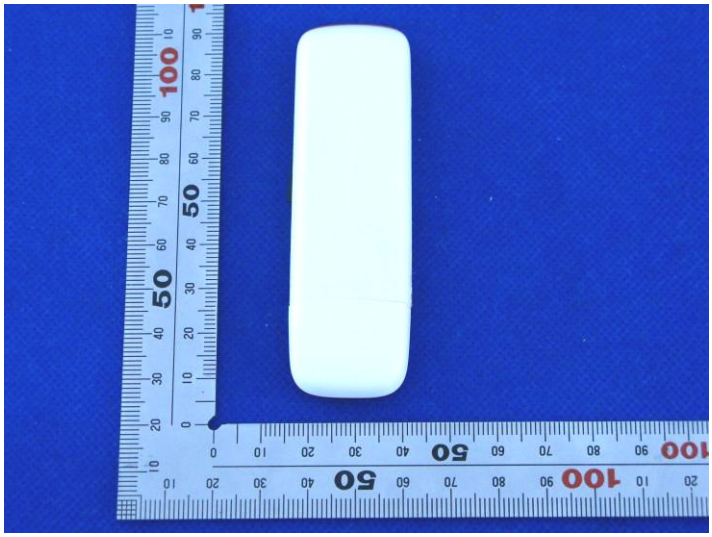


Fig.B-2 Back View

Annex C SAR System Validation

The microwave circuit arrangement for system verification is sketched in Fig. C-1. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 835&1900MHz. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the table C-1 (A power level of 250mw was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22℃, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

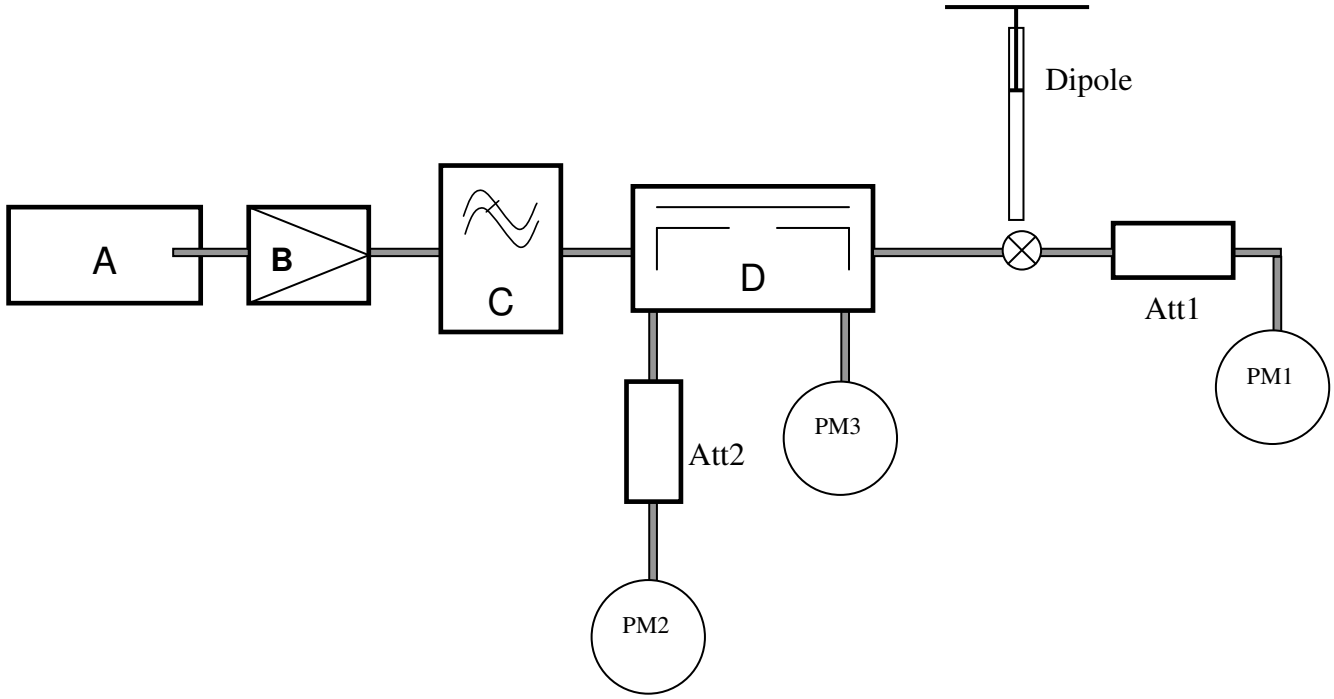


Fig. C-1 the microwave circuit arrangement used for SAR system verification

A. Agilent E4438C Signal Generator

B. Mini-Circuit ZHL-42 Preamplifier

C. Mini-Circuit VLF-2500+ Low Pass Filter

D. Mini-Circuits ZABDC20-252H-N+ Bi-DIR Coupling

PM1. Power Sensor NRP-Z92

PM2. Agilent Model E4416A Power Meter

PM3. Power Sensor NRP-Z92

Validation Kit	Frequency (MHz)	Tissue Type	Limit/Measurement		
				1g	10g
D835V2	835	Body	**Recommended Limit**	**2.55±10%**	**1.68±10%**
			Measured, 2009-05-30	**2.61**	**1.72**
			Measured, 2009-07-13	**2.46**	**1.61**
D1900V2	1900	Body	**Recommended Limit**	**10.5±10%**	**5.57±10%**
			Measured, 2009-05-28	**10.7**	**5.53**
			Measured, 2009-05-29	**10.9**	**5.62**
			Measured, 2009-07-13	**10.5**	**5.43**

Table C-1 SAR System Validation Result

Annex C.1 System Validation for 850MHz-BodyWorn-1

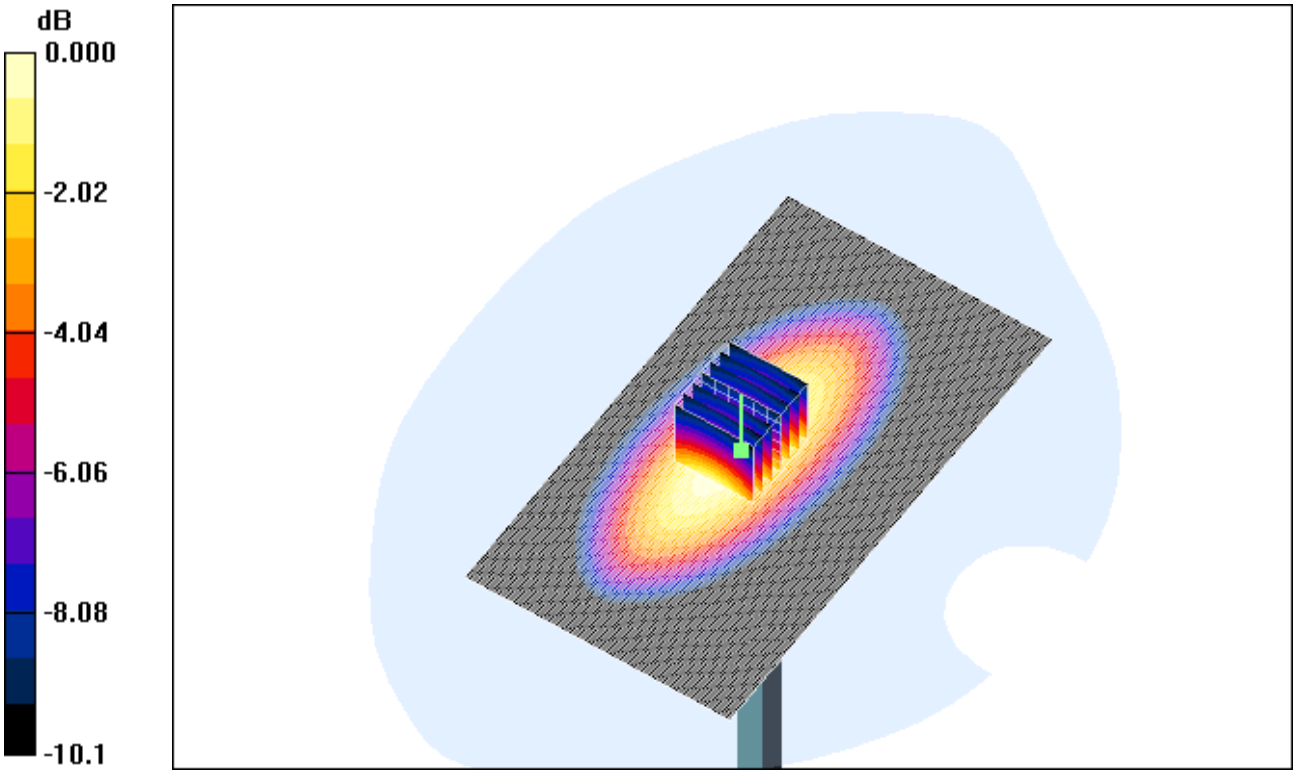
Date/Time: 2009-5-30 9:08:50

Test Laboratory: SGS-GSM
System-Validation-D835-Body
DUT: Dipole 835MHz; Type: D835V2; Serial: D835V2 - SN:4d070
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL835 Body Medium parameters used: f = 835 MHz; σ = 0.948 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (101x181x1): **Measurement grid: dx=10mm, dy=10mm**
Maximum value of SAR (interpolated) = 2.82 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**
Reference Value = 52.7 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 3.87 W/kg
SAR(1 g) = 2.61 mW/g; SAR(10 g) = 1.72 mW/g
Maximum value of SAR (measured) = 2.82 mW/g



0 dB = 2.82mW/g

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

Annex C.2 System Validation for 850MHz-BodyWorn-2

Date/Time: 2009-7-13 14:09:07

Test Laboratory: SGS-GSM

System-Validation-D835-Body

DUT: Dipole 835MHz; Type: D835V2; Serial: D835V2 - SN:4d070

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

Medium: HSL835 Body Medium parameters used: f = 835 MHz; σ = 0.94 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3

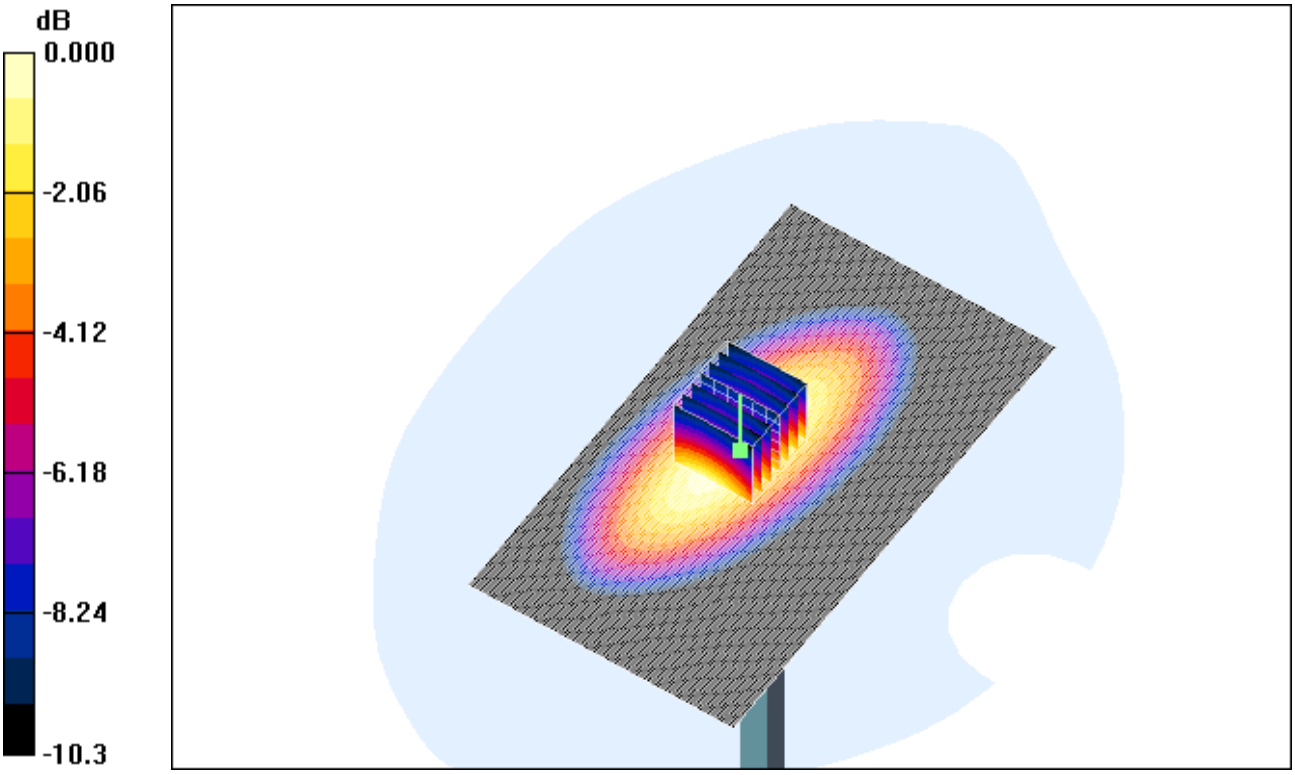
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (101x181x1): **Measurement grid: dx=10mm, dy=10mm**
Maximum value of SAR (interpolated) = 2.66 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**
Reference Value = 47.5 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 2.46 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.66 mW/g



0 dB = 2.66mW/g

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

Annex C.3 System Validation for 1900MHz-BodyWorn-1

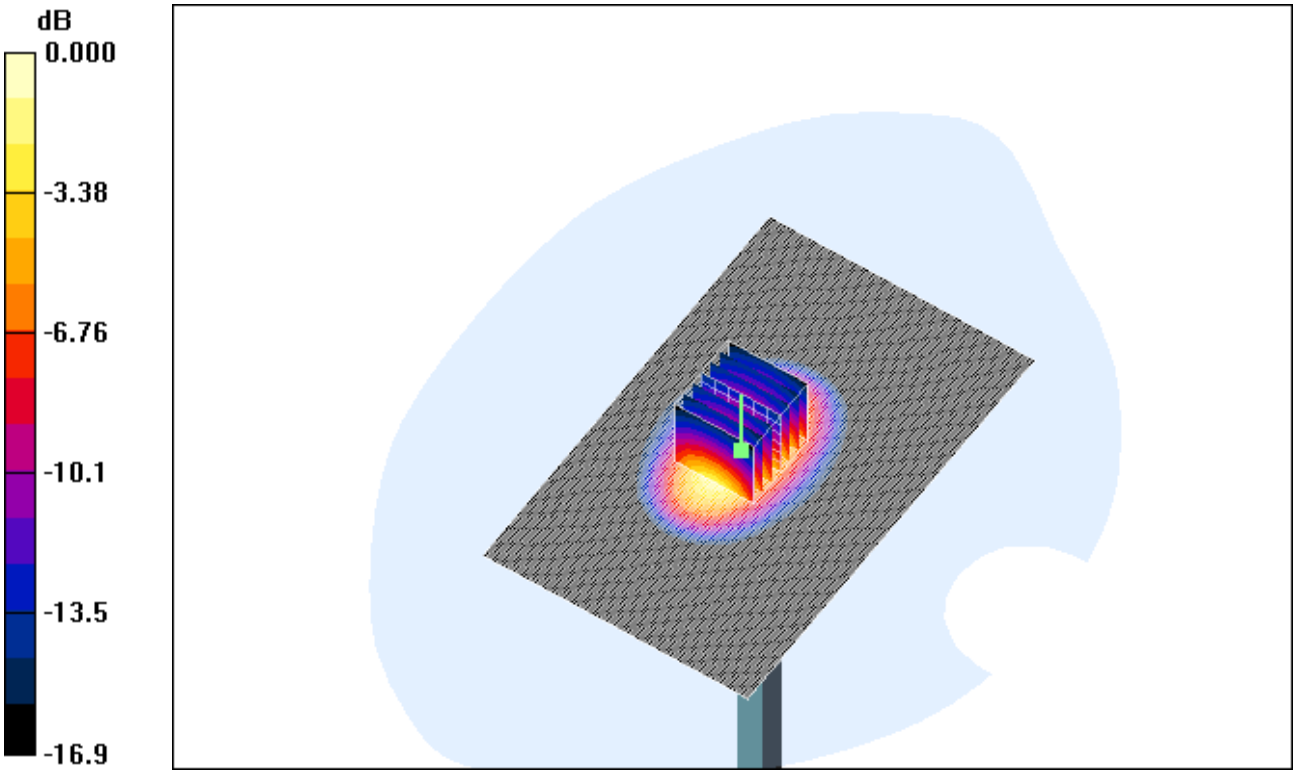
Date/Time: 2009-5-29 9:16:25

Test Laboratory: SGS-GSM
System-Validation-D1900-Body
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d028
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL 1900 Body Medium parameters used: f = 1900.04 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (101x161x1): **Measurement grid: dx=10mm, dy=10mm**
Maximum value of SAR (interpolated) = 12.3 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**
Reference Value = 81.7 V/m; Power Drift = -0.158 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(1 g) = 10.9 mW/g; SAR(10 g) = 5.62 mW/g
Maximum value of SAR (measured) = 12.3 mW/g



0 dB = 12.3mW/g

Annex C.4 System Validation for 1900MHz-BodyWorn-2

Date/Time: 2009-5-29 9:16:25

Test Laboratory: SGS-GSM

System-Validation-D1900-Body

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d028

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

Medium: HSL 1900 Body Medium parameters used: f = 1900.04 MHz; σ = 1.53 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3

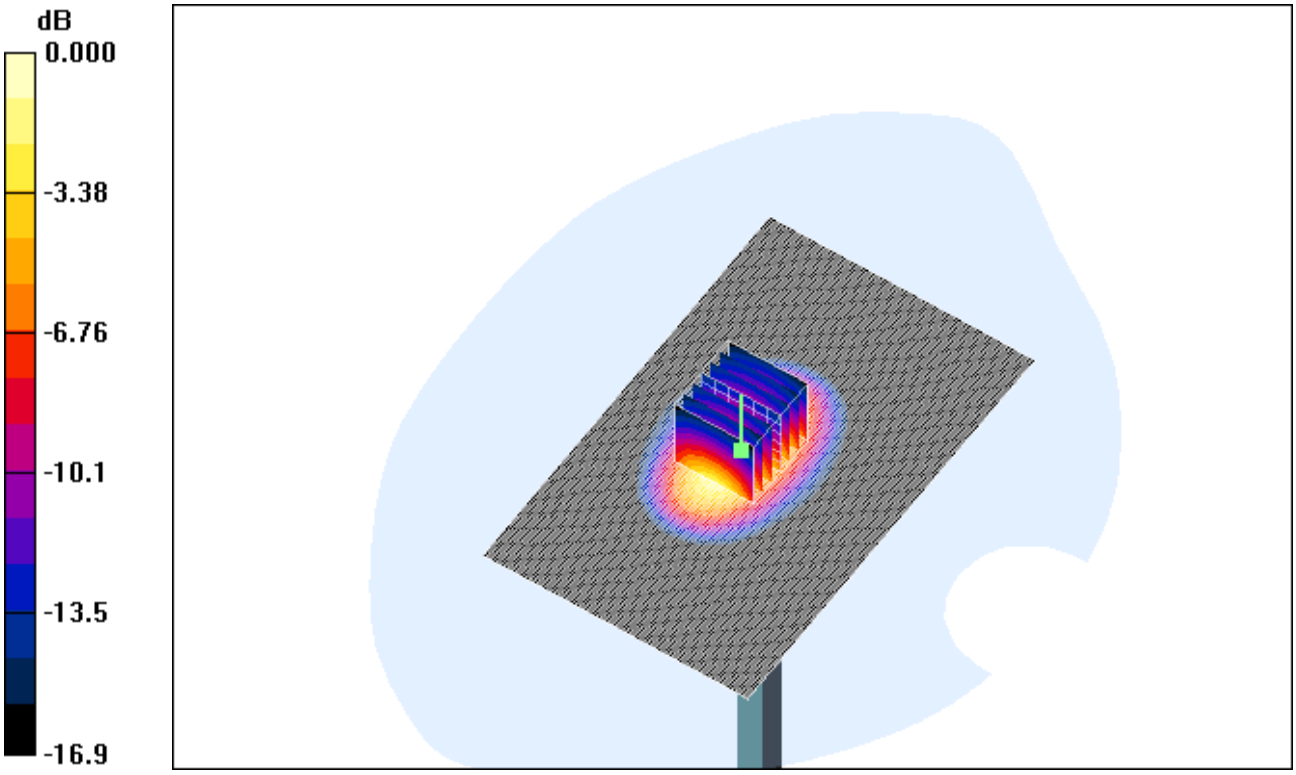
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (101x161x1): **Measurement grid: dx=10mm, dy=10mm**
Maximum value of SAR (interpolated) = 12.3 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**
Reference Value = 81.7 V/m; Power Drift = -0.158 dB
Peak SAR (extrapolated) = 19.8 W/kg
SAR(1 g) = 10.9 mW/g; SAR(10 g) = 5.62 mW/g
Maximum value of SAR (measured) = 12.3 mW/g



0 dB = 12.3mW/g

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

Annex C.5 System Validation for 1900MHz-BodyWorn-3

Date/Time: 2009-7-13 10:08:08

Test Laboratory: SGS-GSM

System-Validation-D1900-Body

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d028

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

Medium: HSL 1900 Body Medium parameters used: f = 1900.04 MHz; σ = 1.51 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3

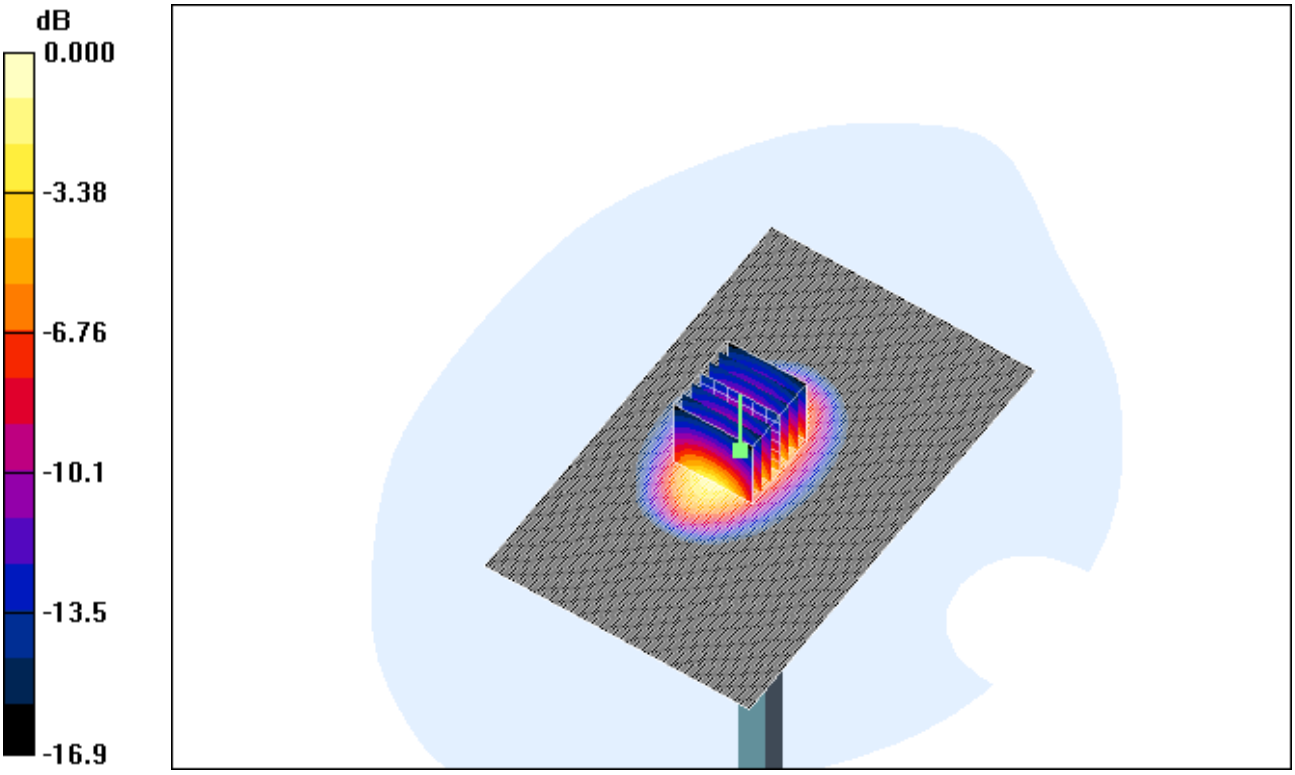
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (101x161x1): **Measurement grid: dx=10mm, dy=10mm**
Maximum value of SAR (interpolated) = 12.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**
Reference Value = 68.0 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 19.3 W/kg
SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.43 mW/g
Maximum value of SAR (measured) = 11.9 mW/g



0 dB = 11.9mW/g

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

Annex D Description of Test Position

Annex D.1 SAM Phantom Shape

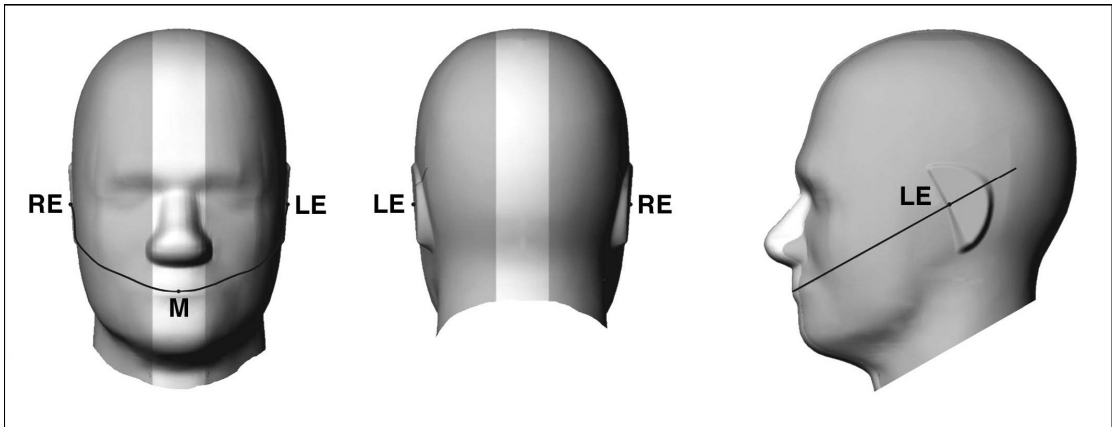


Figure D-1 front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup of Figure D-2. Note: The center strip including the nose region has a different thickness tolerance.

Figure D-2 Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

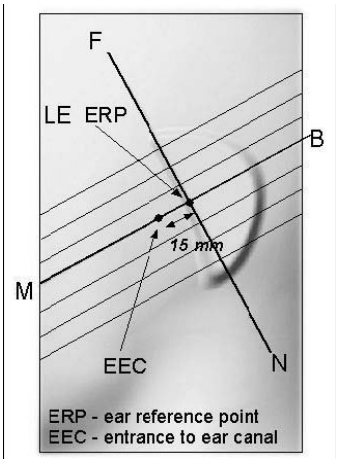


Figure D-3 Close-up side view of phantom

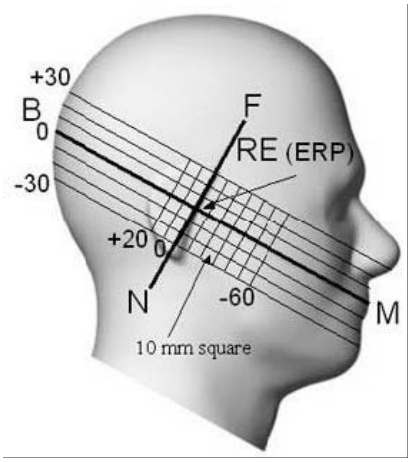


Figure D-4 Side view of the phantom showing

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

relevant markings and seven cross-sectional plane locations

Annex D.2 EUT constructions

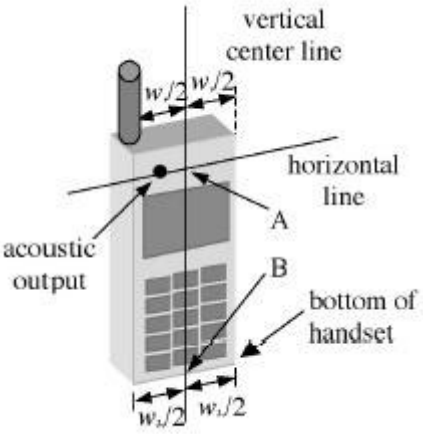


Figure D-5a Handset vertical and horizontal reference lines-"fixed case"

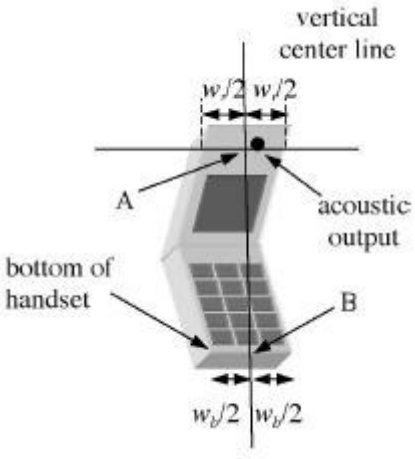


Figure D-5b Handset vertical and horizontal reference lines-"clam-shell case"

Annex D.3 Definition of the "cheek" position

a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom ("initial position" see Figure 1-7). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE;

b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until the phone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

Annex D.4 Definition of the "tilted" position

a) Position the device in the "cheek" position described above;

b) While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

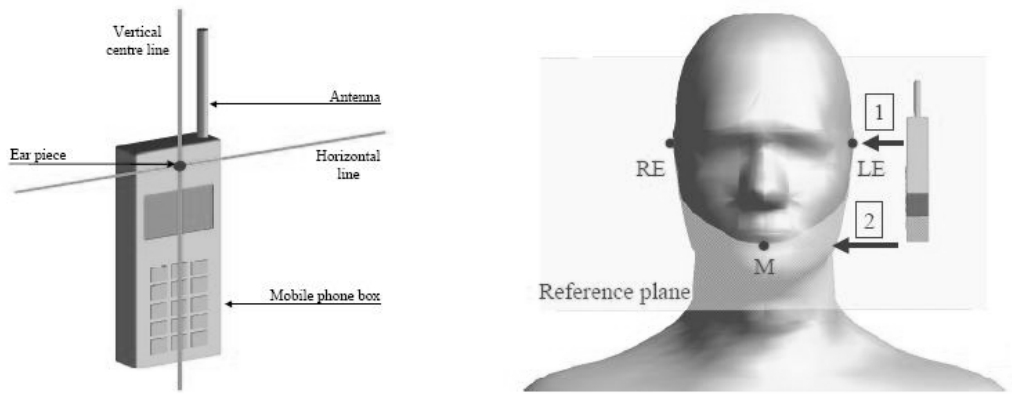


Figure D-6 Definition of the reference lines and points, on the phone and on the phantom and initial position

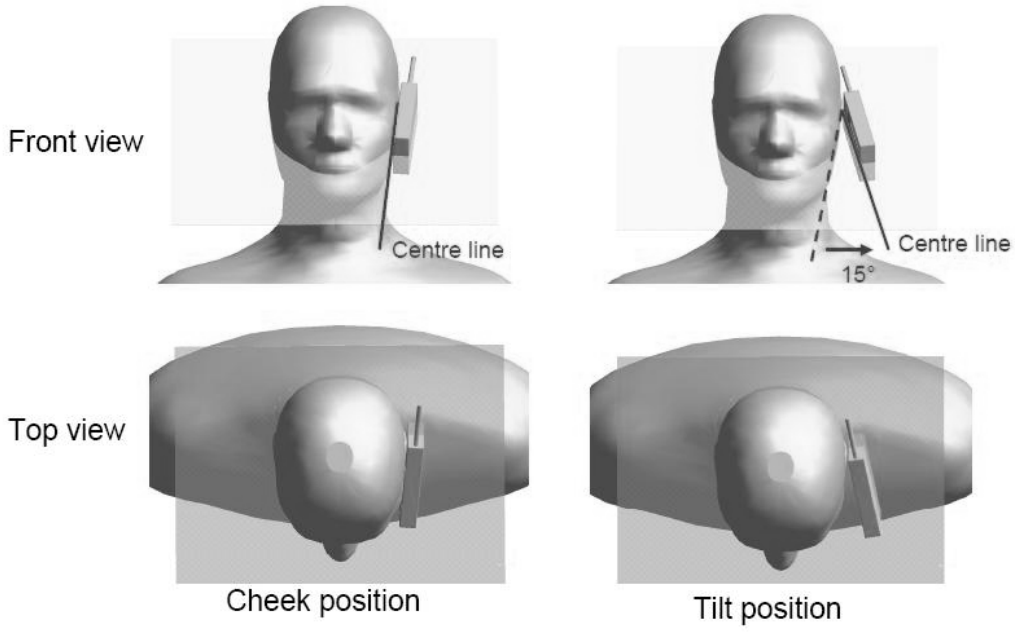


Figure D-7 "Cheek" and "tilt" positions of the mobile phone on the left side

Annex E Tissue Equivalent Liquid

Annex E.1 Recipes for Tissue Equivalent Liquid

The following tables give the recipes for tissue equivalent liquids to be used in different frequency bands.

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com

Frequency (MHz)	835		900		1800-2000		2450	
Tissue Type	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**
Ingredient (% by weight)								
Water	40.30	50.75	40.30	50.75	55.24	70.17	55.00	68.64
Salt (NaCl)	1.38	0.94	1.38	0.94	0.31	0.39	0	0
Sucrose	57.90	48.21	57.90	48.21	0	0	0	0
HEC	0.24	0	0.24	0	0	0	0	0
Bactericide	0.18	0.10	0.10	0.10	0	0	0	0
DGBE	0	0	0	0	44.45	29.44	45.00	31.37
Measurement dielectric parameters								
Dielectric Constant	41.9	55.0	41.1	54.5	39.2	53.2	38.9	53.0
Conductivity (S/m)	0.93	0.97	1.04	1.06	1.45	1.59	1.82	1.93
Target values								
Dielectric Constant	41.5	55.2	41.5	55.0	40.0	53.3	39.2	52.7
Conductivity (S/m)	0.90	0.97	0.97	1.05	1.40	1.52	1.80	1.95

Salt: 99^{+}% Pure Sodium Chloride Sucrose: 98^{+}% Pure Sucrose
Water: De-ionized, 16 MΩ^{+} resistivity HEC: Hydroxyethyl Cellulose
DGBE: 99^{+}% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Table E-1 Recipe of Tissue Equivalent Liquid

Annex E.2 Measurement for Tissue Equivalent Liquid

The dielectric properties for this Tissue Equivalent Liquids were measured by using the Agilent Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Agilent E5071B Network Analyzer (300 KHz-8500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1.For the SAR measurement given in this report. The temperature variation of the Tissue Equivalent Liquids was 22±2℃.

Frequency (MHz)	Tissue Type	Limit/Measured	Permittivity (ρ)	Conductivity (σ)	Temp (℃)
835	Body	**Recommended Limit**	**55.2±5%**	**0.97±5%**	**22±2**
		Measured, 2009-05-30	54.2	0.948	22.1
		Measured, 2009-07-13	54.2	0.94	22.0
1900	Body	**Recommended Limit**	**53.3±5%**	**1.52±5%**	**22±2**
		Measured, 2009-05-28	52.6	1.52	22.0
		Measured, 2009-05-29	52.7	1.53	22.1
		Measured, 2009-07-13	52.4	1.51	21.9

Table E-2 Measurement result of Tissue electric parameters

SGS-CSTC Standards Technical Services, Co, Ltd.
Shanghai Branch GSM Laboratory
9/F, 3rd Building, No. 889, Yishan Road, Shanghai, China 200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 www.cn.sgs.com
中国•上海•宜山路 889 号 3 号楼 9 层 邮编：200233 t (86 -21) 61402666*2736 f (86 -21) 54500149 e sgs.china@sgs.com