# **SAR Test Report**

Report No.: AGC06P120903S1

FCC ID : UOSAM206

**PRODUCT** 

**DESIGNATION** : mobile phone

**BRAND NAME** : AMGOO

MODEL NAME : AM206

**CLIENT**: Amgoo Telecom Co., Ltd.

**DATE OF ISSUE**: Sep.18, 2012

**STANDARD(S)** : FCC Oet65 Supplement C June 2001 IEEE Std. 1528-2003,47CFR § 2.1093

**REPORT VERSION**: V1.0

# Attestation of Global Compliance(Shenzhen) Co., Ltd.

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_	Ге	est Report Certification
Applicant Name	:	Amgoo Telecom Co., Ltd.
Applicant Address	:	6/F,Block 3,Tongjian Building,Middle Shennan Rd, Futian District, Shenzhen, China
Manufacturer Name	:	Topology Communication Technology (Shenzhen) CO., LTD.
Manufacturer Address	:	KaiXinDa Technology Park, No.49 ZhouShi Road, Shiyan County, Bao'an District, Shenzhen, China
Product Designation	:	mobile phone
Brand Name	:	AMGOO
Model Name	:	AM206
EUT Voltage	:	DC3.7V by battery
Applicable Standard	:	FCC Oet65 Supplement C June 2001 IEEE Std. 1528-2003,47CFR § 2.1093
Test Date	:	Sep.18, 2012
		MAX SAR MEASUREMENT(1g)
Test Results	:	Head:0.763W/Kg (Scaling SAR=0.773 W/Kg)
		Body:0.695W/Kg
		Attestation of Global Compliance(Shenzhen) Co., Ltd.
Performed Location		2 F, Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park,
		Gushu, Xixiang Street, Bao'an District, Shenzhen, China

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# 1. General Information

# 1.1. EUT Description

General Information			
Product Designation	mobile phone		
Test Model	AM206		
Hardware Version	C121A_V1.02_PCB		
Software Version	N/A		
Device Category	Portable		
RF Exposure Environment	Uncontrolled		
Antenna Type	Internal		
GSM and GPRS			
Support Band	<ul><li></li></ul>		
GPRS Type	Class B		
GPRS Class	Class 8,10 (1Tx+4Rx, 2Tx+3Rx)		
TX Frequency Range	GSM 850 : 824.2~848.8MHz; PCS 1900: 1850.2~1909.8MHz;		
RX Frequency Range	GSM 850 : 869~894MHz PCS 1900: 1930~1990MHz		
Release Version	R99		
Type of modulation	GMSK for GSM/GPRS		
Antenna Gain	1.0dBi		
Max. Output Power (Avg. Burst Power)	GSM850: 31.65dBm ( 32.57dBm Peak Power) PCS1900:28.94dBm (29.67dBm Peak Power)		
Max. Output Power (Radiated)	GSM850: 30.63dBm- ERP PCS1900: 28.57dBm- EIRP		
Bluetooth			
Bluetooth Version	□V2.0         □V2.1         □V2.1+EDR         □V3.0         □V3.0+EDR		
Operation Frequency	2402~2480MHz		
Type of modulation	⊠GFSK ⊠∏/4-DQPSK ⊠8-DPSK		

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Max. Output Power (Peak Conducted)	3.66dBm(max)		
Antenna Gain	0.8dBi		
Accessories			
	Brand name: AMGOO		
Battery	Model No. : AM-4CC		
	Voltage and Capacitance: 3.7V/650mAh		
	Brand name: AMGOO		
Adapter	Model No. : CH4		
	Input& Output: AC :100-240V DC:5V 500mA		
Earphone	Brand name: AMGOO		
Earphone	Model No. : AM206		

Note: The sample used for testing is end product.

# 1.2. Test Procedure

1	Setup the EUT and simulators as shown on above.		
2	Turn on the power of all equipment.		
3	EUT Communicate with CMU 200, and test them respectively at U.S. bands		

# 1.3. Test Environment

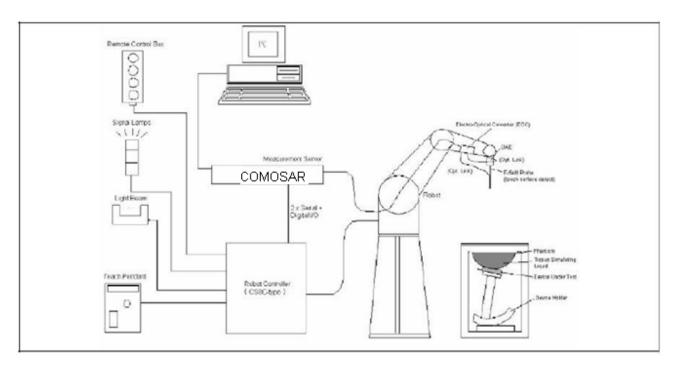
Ambient conditions in the laboratory:

Items	Required	Actual
Temperature (°C)	18-25	21± 2
Humidity (%RH)	30-70	55±2

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# 2. SAR Measurement System

# 2.1. COMOSAR System Description



The COMOSAR system for performing compliance tests consists of the following items:

A standard high precision 6-axis robot with controller, teach pendant and software.

An arm extension for accommodating the data acquisition electronics (DAE).

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection,

collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital Communicate Mobile phone to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.

The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.

A computer running WinXP and the Opensar software.

Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.

The phantom, the device holder and other accessories according to the targeted measurement.

# 2.1.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

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#### 2.1.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm<sup>2</sup> step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

# 2.1.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m³ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

# 2.1.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Post processor, COMOSAR allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528. The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}}\cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2 + y'^2}}{5a}\right)$$

$$f_2(x,y,z) = Ae^{-\frac{z}{a}}\frac{a^2}{a^2 + x'^2}\left(3 - e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2}\left(e^{-\frac{2z}{a}} + \frac{a^2}{2(a+2z)^2}\right)$$

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#### 2.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dissymmetric probe manufactured by SPEAG.

The probe is specially designed and calibrated for use in liquid with high permittivity. The dissymmetric probe has special calibration in liquid at different frequency.

SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN62209-1, IEC 62209, etc.) Under ISO17025. The calibration data are in Appendix D.

# 2.2.1. Isotropic E-Field Probe Specification

Model	SSE5
Manufacture	Satimo
frequency	0.3 GHz-6GHz
	Linearity:±0.2dB(300 MHz-6GHz)
Dynamic	0.01W/Kg-100W/Kg
Range	Linearity:±0.2dB
Dimensions	Overall length:330mm
	Length of individual dipoles:4.5mm
	Maximum external diameter:8mm
	Probe Tip external diameter:5mm
	Distance between dipoles/ probe
	extremity:2.7mm
Appli-mobile	High precision dosimetric measurements in any exposure scenario
phone	(e.g., very strong gradient fields). Only probe which enables
	compliance testing for frequencies up to 6 GHz with precision of better
	30%.

#### 2.3 Robot

The COMOSAR system uses the high precision robots TX90 XL type out of the newer series from Satimo SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from Satimo is used.

The XL robot series have many features that are important for our application:

High precision (repeatability 0.02 mm)

High reliability (industrial design)

Jerk-free straight movements

Low ELF interference (the closed metallic

construction shields against motor control fields)

6-axis controller



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# 2.4. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link.

During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

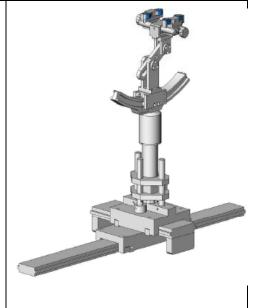


## 2.5. Device Holder

The COMOSAR device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).

Thus the device needs no repositioning when changing the angles.

The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity  $\epsilon r$  =3 and loss tangent  $\delta$  = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



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# 2.6. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

Left head Right head Flat phantom



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. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

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# 3. Tissue Simulating Liquid

# 3.1. The composition of the tissue simulating liquid

Ingredient	835MHz	835MHz	1900MHz	1900MHz
(% Weight)	Head	Body	Head	Body
Water	40.45	52.4	54.90	40.5
Salt	1.42	1.40	0.18	0.50
Sugar	57.6	45.0	0.00	58.0
HEC	0.40	1.00	0.00	0.50
Preventol	0.10	0.20	0.00	0.50
DGBE	0.00	0.00	44.92	0.00

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# 3.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and R&S Network Analyzer ZVL6 .

Head Tissue Stimulant Measurement					
Frequency (MHz)	Description	Dielectric F	Tissue Temp [°C]		
900MHz	Reference result ±5% window	εr 41.5 39.425-43.575	δ[s/m] 0.97 0.9215-1.0185	N/A	
	Sep.18, 2012	41.48	0.98	21	

Body Tissue Stimulant Measurement					
Frequency (MHz)	Description	Dielectric	Tissue Temp [°C]		
900MHz	Reference result ±5% window	εr 55.0 52.25-57.75	δ[s/m] 1.05 0.9975-1.1028	N/A	
	Sep.18, 2012	54.68	1.02	21	

Head Tissue Stimulant Measurement					
Frequency (MHz)	Description	Description Dielectric Parameters			
1900MHz	Reference result ±5% window	εr 40.00 38.00-42.00	δ[s/m] 1.40 1.33-1.47	N/A	
	Sep.18, 2012	40.12	1.42	21	

Body Tissue Stimulant Measurement					
Frequency (MHz)	Description	Dielectric F	Tissue Temp [°C]		
1900MHz	Reference result ±5% window	εr 53.30 50.64-55.97	δ[s/m] 1.52 1.44-1.60	N/A	
	Sep.18, 2012	53.36	1.49	21	

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# 3.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Target Frequency	ŀ	nead	bo	ody
(MHz)	εr	σ (S/m)	εr	σ (S/m)
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	1.00	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

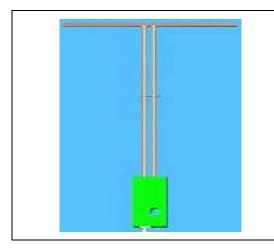
(  $\varepsilon_{\rm r}$  = relative permittivity,  $\sigma_{\rm r}$  = conductivity and  $\rho_{\rm r}$  = 1000 kg/m<sub>3</sub>)

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# 4. SAR Measurement Procedure

# 4.1. SAR System Validation

# 4.1.1. Validation Dipoles



The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical Specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
900 MHz	149.0	83.3	3.6
1900MHz	68	39.5	3.6

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# 4.1.2. Validation Result

System Performance Check at 900 MHz &1900MHz for Head										
Validation Kit: SN 46/11DIP 0G900-185										
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp.[°C]						
900MHz	Reference result ± 10% window	10.9 9.81 to 11.99	6.99 6.29 to 7.69	N/A						
	Sep.18, 2012	10.94	6.73	21.0						
Validation Ki	t: SN 46/11DIP 1G900-	187								
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp.[°C]						
1900 MHz	Reference result ± 10% window	39.7 35.73 to 43.67	20.5 18.45 to 22.55	N/A						
	Sep.18, 2012 40.23 19.31 21.0									
Note: All SAR	values are normalized	to 1W forward power.		•						

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#### 4.2. SAR Measurement Procedure

The COMOSAR calculates SAR using the following equation,

$$SAR = \frac{\sigma |E|^2}{\rho}$$

σ: represents the simulated tissue conductivity

p: represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at 1mm²) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at 1mm³).

When multiple peak SAR location were found during the same configuration or test mode, Zoom scan shall performed on each peak SAR location, only the peak point with maximum SAR value will be reported for the configuration or test mode.

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# 5. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 "Uncontrolled Environments" limits. These limits apply to a location which is deemed as "Uncontrolled Environment" which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

# Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg

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# 6. Test Equipment List

Equipment description	Manufacturer/Mo del	Identification No.	Current calibration date	Next calibration date	
SAR Probe	Satimo	SN_3511_EP132	12/09/2011	12/08/2012	
Phantom	Satimo	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.	
Liquid	Satimo	-	Validated. No cal required.	Validated. No cal required.	
Comm Tester	R&S - CMU200	069Y7-158-13-712	2 12/09/2011 12/08/2012		
Multimeter	Keithley 2000	1188656	12/09/2011	12/08/2012	
Dipole	Satimo SID900	SN46/11 DIP 0G900-185	12/09/2011	12/08/2014	
Dipole	Satimo SID1900	SN46/11 DIP 1G900-187	12/09/2011	12/08/2014	
Amplifier	Aethercomm	SN 046	12/09/2011	12/08/2012	
Power Meter	HP E4418A	US38261498	03/30/2012	03/29/2013	
Network Analyzer	Rhode & Schwarz ZVA	SN100132	02/07/2012	02/06/2013	

Note: Per KDB 50824 Dipole SAR Validation Verification, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

- 1. There is no physical damage on the dipole;
- 2. System validation with specific dipole is within 10% of calibrated value;
- 3. Return-loss is within 20% of calibrated measurement;
- 4. Impedance is within  $5\Omega$  of calibrated measurement.

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#### **Measurement Uncertainty 7**.

Satimo Uncertainty									
Measurer	Measurement uncertainty for 300 MHz to 6 GHz averaged over 1 gram / 10 gram.								
Error Description	Sec	Tol (±%)	Prob. Dist.	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g) (±%)	Std. Unc. (10g)(±%)	(Vi) Veff
Measurement System							, ,	, , ,	I
Probe Calibration	E.2.1	6	N	1	1	1	6	6	00
Axial Isotropy	E.2.2	3	R	√3	$(1-c_p)^{1/2}$	$(1-c_p)^{1/2}$	1.22474	1.22474	00
Hemispherical Isotropy	E.2.2	5	R	√3	√Cp	√Cp	2.04124	2.04124	00
Boundary Effects	E.2.3	1	R	√3	1	1	0.57735	0.57735	00
Linearity	E.2.4	5	R	√3	1	1	2.88675	2.88675	00
System Detection Limits	E.2.5	1	R	√3	1	1	0.57735	0.57735	00
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	00
Response Time	E.2.7	0.2	R	√3	1	1	0.11547	0.11547	00
Integration Time	E.2.8	2	R	√3	1	1	1.1547	1.1547	00
RF Ambient Noise	E.6.1	3	R	√3	1	1	1.73205	1.73205	00
Probe Positioner	E.6.2	2	R	√3	1	1	1.1547	1.1547	00
Mechanical Tolerance									
Probe Positioning with Respect to Phantom Shell	E.63	1	R	√3	1	1	0.57735	0.57735	∞
Extrapolation,interpolation and Integration Algorithms for Max. SAR Evaluation	E.5.2	1.5	R	√3	1	1	0.86603	0.86603	00
Dipole					•	•		•	
Device Positioning	8,E.4.2	1	N	√3	1	1	0.57735	0.57735	N-1
Power Drift	8.6.6.2	2	R	√3	1	1	1.1547	1.1547	88
Phantom and Tissue									
Parameters									
Phantom Uncertainty	E.3.1	4	R	√3	1	1	2.3094	2.3094	00
Liquid Conductivity (target)	E.3.2	5	R	√3	0.64	0.43	1.84752	1.2413	
Liquid Conductivity (meas.)	E.3.3	2.5	N	1	0.64	0.43	1.6	1.075	00
Liquid Permittivity (target)	E.3.2	3	R	√3	0.6	0.49	1.03923	0.8487	00
Liquid Permittivity (meas.)	E.3.3	2.5	N	1	0.6	0.49	1.5	1.225	М
Combined Standard Uncertainty			RSS				8.09272	7.9296	
Expanded Uncertainty (95%CONFIDENCE INTERVAL)			k				16.18544	15.8592	

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# 8. Conducted Power Measurement

Mada	F(8411)	Peak	Avg. Burst	Duty cycle	Frame
Mode	Frequency(MHz)	Power	Power(dBm)	Factor(dBm)	Power(dBm)
Maximum Power					
GSM850	824.2	32.49	31.47	-9	22.47
<sim 1=""></sim>	836.6	32.57	31.65	-9	22.65
SIIVI 12	848.8	32.47	31.51	-9	22.51
CDDC050	824.2	32.36	31.54	-9	22.54
GPRS850 (1 Slot)	836.6	32.41	31.64	-9	22.64
(1 301)	848.8	32.44	28.71	-9	22.71
GPRS850	824.2	29.52	28.63	-6	22.63
(2 Slot)	836.6	29.63	28.65	-6	22.65
(2 3101)	848.8	29.54	28.64	-6	22.64
GSM850					
<sim 2=""></sim>	836.6	32.47	31.35	-9	22.35
SIIVI Z>					
DCC4000	1850.2	29.17	28.64	-9	19.64
PCS1900	1880	29.35	28.76	-9	19.76
<sim 1=""></sim>	1909.8	29.67	28.94	-9	19.94
CDDC4000	1850.2	29.14	28.61	-9	19.61
GPRS1900	1880	29.31	28.73	-9	19.73
(1 Slot)	1909.8	29.58	28.81	-9	19.81
00004000	1850.2	26.67	25.76	-6	19.76
GPRS1900	1880	26.65	25.63	-6	19.63
(2 Slot)	1909.8	26.72	25.81	-6	19.81
DCC4000					
PCS1900 <sim 2=""></sim>	1880	29.53	28.24	-9	19.75
SIIVI Z/					

# Note 1:

The Frame Power (Source-based time-averaged Power) is scaled the maximum burst average power based on time slots. The calculated methods are show as following:

Frame Power = Max burst power (1 Up Slot) – 9 dB

Frame Power = Max burst power (2 Up Slot) – 6 dB

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## 9. Test Results

# 9.1. SAR Test Results Summary

# 9.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to IEEE1528, and Body SAR was performed with the device 15mm from the phantom. Body SAR was also performed with the headset attached and without.

#### 9.1.2. Body SAR with Headset

Testing with the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2 uplink timeslots. This operation mode represents the maximum SAR situation, when downloading data via GPRS and listening to music by headset. SAR without the headset attached was significantly higher than with the headset, and also was verified several times and confirmed, so the final test data shown were the worst case without headset. In the Body SAR test result table, body-worn means display of device down, body-front means display of device up.

# 9.1.3. Operation Mode

This is a multi-slot class 10 device capable of 2 uplink timeslots. During the head SAR test, the device was transmitting with maximum 1 uplink timeslot; during the body SAR test, it was transmitting with maximum 2 uplink timeslots. Additionally, this device doesn't support dual transfer mode (DTM).

#### 9.1.4. Co-located

According to KDB 447498 and KDB 648474, due to the Max peak power for Bluetooth is 3.66dBm less than Pref, the Maximum SAR for GSM part<1.2W/Kg, thus, regardless the closest separation distance between the GSM antenna and Bluetooth Antenna( The distance between the GSM antenna and Bluetooth Antenna is less than 5cm), stand-alone SAR and simultaneous transmission SAR is not required.

Other reference document: KDB 941225.

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# 9.1.5. Test Result

# SAR MEASUREMENT Ambient Temperature (°C): 21 ± 2 Liquid Temperature (°C): 21 ± 2 Depth of Liquid (cm):>15

Product: mobile phone

Test Mode: GSM850 with GMSK modulation

	Configuration		Antenna		Avg. Burst	Power Drift	SAR	Limit		
SIM	Position	Status	Position	channel	MHz	Power (dBm)	(<±0.2 dB)	(1g) (W/kg)	(W/kg)	
				128	824.2	31.47			1.6	
		Cheek	Fixed	190	836.6	31.65	0.01	0.763	1.6	
	Left			251	848.8	31.51			1.6	
	Head	Head Tilted			128	824.2	31.47			1.6
			Fixed	190	836.6	31.65	0.04	0.496	1.6	
<1>				251	848.8	31.51			1.6	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				128	824.2	31.47			1.6	
		Cheek	Fixed	190	836.6	31.65	0.05	0.733	1.6	
	Right			251	848.8	31.51			1.6	
	Head			128	824.2	31.47			1.6	
		Tilted	Fixed	190	836.6	31.65	0.07	0.671	1.6	
				251	848.8	31.51			1.6	
<2>	Left	Cheek	Fixed	190	836.6	31.35	0.06	0.725	1.6	

Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. refer to KDB 941225.

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SAR			

Ambient Temperature (°C): 21 ± 2 Relative Humidity (%): 55

Liquid Temperature (°C): 21 ± 2 Depth of Liquid (cm):>15

Product: mobile phone

Test Mode: GSM850 with GMSK modulation

Configuration		Antenna Frequency		Avg. Burst	Power	SAR (1a)	Limit		
SIM	Position	Status	Position	chann el	MHz	Power (dBm)	Drift (<±0.2 dB)	(1g) (W/kg)	(W/kg)
				128	824.2	31.47	1	1	1.6
		MS	Fixed	190	836.6	31.65	0.02	0.585	1.6
	Body			251	848.8	31.51	1	1	1.6
	Back	Back GPRS 2 TS	l Fixed	128	824.2	28.63	-	1	1.6
				190	836.6	28.65	0.01	0.487	1.6
<1>				251	848.8	28.64			1.6
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dadu			128	824.2	31.47			1.6
	Body Front	MS	MS Fixed	190	836.6	31.65	0.06	0.487	1.6
	Front			251	848.8	31.51			1.6
	D. J	MS		128	824.2	31.47			1.6
	Body	' I with	Fixed	190	836.6	31.65	0.05	0.695	1.6
	Back	Earphone		251	848.8	31.51			1.6

Note: when the 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. refer to KDB 941225.

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SAR	MEASU	JREMENT
-----	-------	---------

Ambient Temperature (°C): 21 ± 2 Relative Humidity (%): 55

Liquid Temperature (°C): 21 ± 2 Depth of Liquid (cm):>15

Product: mobile phone

Test Mode: PCS1900 with GMSK modulation

Configuration		Antenna	Antenna Frequency		Avg. Burst	Power	SAR (1g)	Limit	
SIM	Position	Status	Position	channel	MHz	Power (dBm)	Drift (<±0.2 dB)	(1g) (W/kg)	(W/kg)
				512	1850.2	28.64	1	1	1.6
		Cheek	Fixed	661	1880.0	28.76	0.04	0.464	1.6
	Left			810	1909.8	28.94			1.6
	Head	Head Tilted		512	1850.2	28.64			1.6
			Fixed	661	1880.0	28.76	0.05	0.633	1.6
<1>				810	1909.8	28.94			1.6
\ \   \ \   \ \				512	1850.2	28.64			1.6
		Cheek	Fixed	661	1880.0	28.76	0.01	0.754	1.6
	Right			810	1909.8	28.94			1.6
	Head			512	1850.2	28.64			1.6
		Tilted	Fixed	661	1880.0	28.76	0.03	0.762	1.6
				810	1909.8	28.94			1.6
<2>	Right	Tilted	Fixed	661	1880.0	28.24	0.02	0.208	1.6

Note: when the 1-g SAR is  $\leq$  0.8 W/kg, testing for low and high channel is optional. refer to KDB 941225.

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SAR	MEA	SUR	REM	<b>ENT</b>
-----	-----	-----	-----	------------

Ambient Temperature (°C): 21 ± 2 Relative Humidity (%): 55

Liquid Temperature (°C): 21  $\pm$  2 Depth of Liquid (cm):>15

Product: mobile phone

Test Mode: GSM1900 with GMSK modulation

Configuration		Antenna Frequency		Avg. Burst	Power	SAR	Limit		
SIM	Position	Status	Position	chann el	MHz	Power (dBm)	Drift (<±0.2 dB)	(1g) (W/kg)	(W/kg)
				512	1850.2	28.64			1.6
	Body Back GPRS	MS	Fixed	661	1880.0	28.76	0.03	0.647	1.6
				810	1909.8	28.94			1.6
		GPRS 2 TS		512	1850.2	25.76			1.6
			Fixed	661	1880.0	25.63	0.01	0.450	1.6
<1>				810	1909.8	25.81	-	1	1.6
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	D a de c			512	1850.2	28.64	-	1	1.6
	Body	ront MS Fixed	Fixed	661	1880.0	28.76	0.04	0.367	1.6
	Tiont		810	1909.8	28.94			1.6	
	l Back l	MS		512	1850.2	28.64			1.6
		with	Fixed	661	1880.0	28.76	0.02	0.602	1.6
		Earphone		810	1909.8	28.94			1.6

Note: when the 1-g SAR is  $\leq$  0.8 W/kg, testing for low and high channel is optional. refer to KDB 941225.

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Date: Sep.18, 2012

# Appendix A. SAR System Validation Data

Test Laboratory: AGC Lab

System Check Head 900 MHz

DUT: Dipole 900 MHz Type: SID 900

Communication System CW; Communication System Band: D850(850.0 MHz); Duty Cycle: 1:1; Conv.F=6.79 Frequency: 850 MHz; Medium parameters used: f = 850 MHz;  $\sigma = 0.98$  mho/m;  $\epsilon r = 41.48$ ;  $\rho = 1000$  kg/m³;

Phantom section: Flat Section ; Input Power=10dBm Ambient temperature ( $^{\circ}$ C): 21, Liquid temperature ( $^{\circ}$ C): 21

Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

• Sensor-Surface: 4mm (Mechanical Surface Detection)

· Phantom: SAM1; Type: SAM

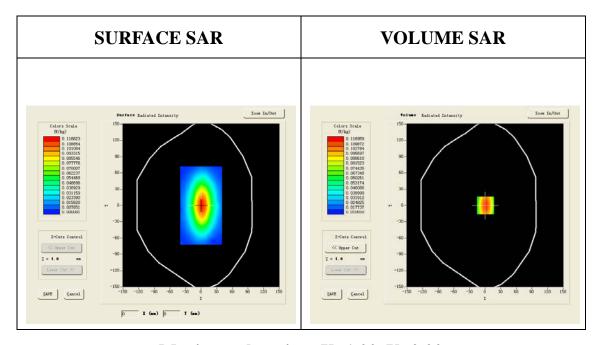
Measurement SW: OpenSAR V4\_02\_01

Configuration/System Check GSM850 Head/Area Scan: Measurement grid: dx=8mm,

dy=8mm

Configuration/System Check GSM850 Head/Zoom Scan: Measurement grid: dx=8mm,

dy=8mm, dz=5mm

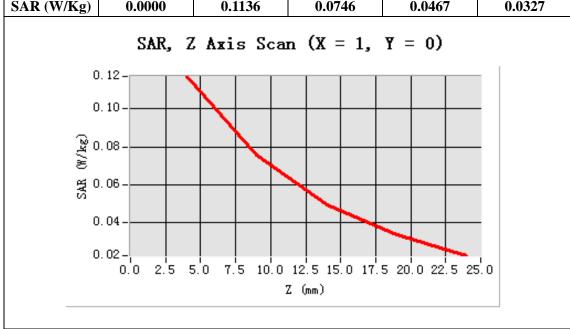


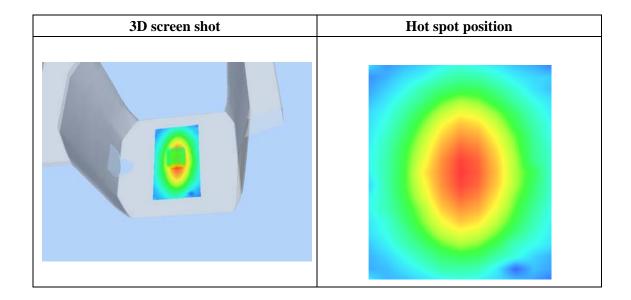
Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	0.067264
SAR 1g (W/Kg)	0.109364

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Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1136	0.0746	0.0467	0.0327





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Test Laboratory: AGC Lab Date: Sep.18, 2012

System Check Head 1900MHz

DUT: Dipole 1900 MHz; Type: SID 1900

Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1;

Conv.F=6.42Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz;  $\sigma = 1.42$  mho/m;  $\epsilon = 40.12$ ;

 $\rho = 1000 \text{ kg/m}^3$ ;

Phantom section: Flat Section ; Input Power=10dBm Ambient temperature ( $^{\circ}$ C): 21, Liquid temperature ( $^{\circ}$ C): 21

Satimo Configuration:

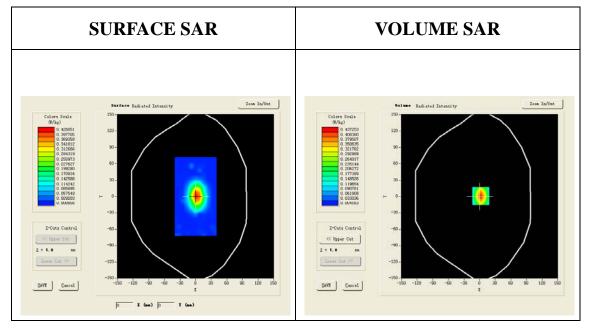
Probe:SSE5; Calibrated: 12/09/2011

• Sensor-Surface: 4mm (Mechanical Surface Detection)

· Phantom: SAM1; Type: SAM

Measurement SW: OpenSAR V4\_02\_01

Configuration/System Check PCS1900 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm Configuration/System Check PCS1900 Head/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

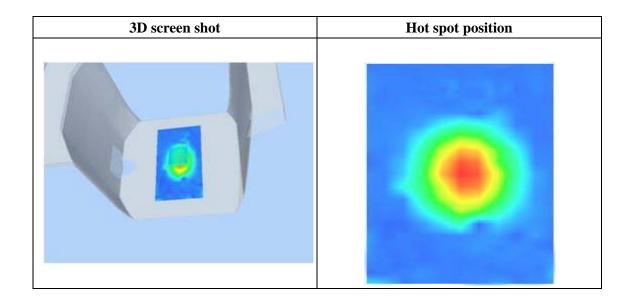


Maximum location: X=2.00, Y=1.00

SAR 10g (W/Kg)	0.193136
SAR 1g (W/Kg)	0.402264

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Z (mm)	0.00	4.00	9.00	14.00	19.00
AR (W/Kg)	0.0000	0.4356	0.2236	0.1101	0.0531
	GAD.		/v - 0	w - 1)	
	SAK,	Z Axis Sca	$\mathbf{n}  (X = 2,$	1 = 1)	
	0.44-				
	0. 40 -	<del>\                                    </del>			
	0. 35 -	+			
اھِ ا	0.30-	+			-
	0. 30	+			-
	0. 20 – 0. 15 –	++			-
លី	0. 15 -				
	0. 10 -	+			_
		+			_
١	0.02-    0.0 2.5	-	12.5 15.0 17	F 20 0 22 F 3	25 0
	0.0 2.5	5.0 1.5 10.0	7 12.5 15.0 11 Z (mm)	.5 20.0 22.5 2	25.0
			Z (MM)		



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# Appendix B. SAR measurement Data

Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Middle-Touch-Left<SIM 1> DUT: mobile phone ; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Conv.F=6.79 Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.98$  mho/m;  $\epsilon r = 41.48$ ;

 $\rho = 1000 \text{ kg/m}^3$ ;

Phantom section: Left Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

# Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

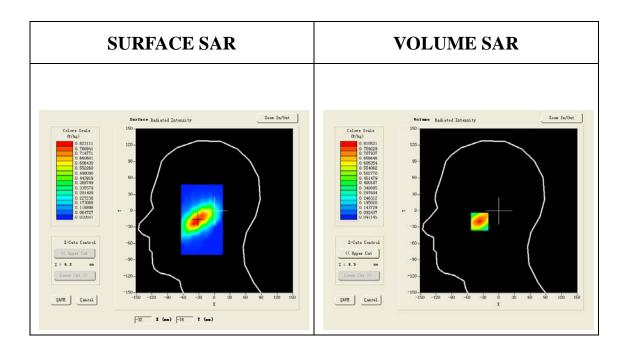
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid Touch-Left/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Area Scan	sam_direct_droit2_surf8mm.txt	
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast	
Phantom	Left head	
Device Position	Cheek	
Band	GSM850	
Channels	Middle	
Signal	TDMA (Crest factor: 8.0)	

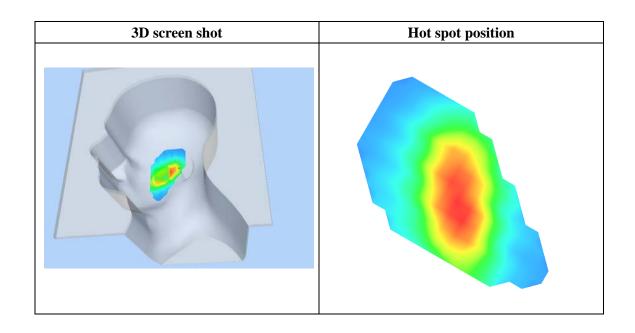


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**Maximum location: X=-35.00, Y=-20.00** 

SAR 10g (W/Kg)	0.504611
SAR 1g (W/Kg)	0.762614

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.8101	0.6258	0.4675	0.3335
	SAR. Z.A	wis Scan	(X = −35,	▼ = -20)	
			(II 00)	1 20,	ı
U	1.8-				
0	1. 7 -				
~ €0	. 6 –		+		
(#/kg) (#/kg)	. 5 -				
AB.	1. 4 -				
	1.3-				
0	0.0 2.5 5	.0 7.5 10.0	12.5 15.0 17.5	5 20.0 22.5 25	. 0
			(mm)		



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid-Tilt-left<SIM 1> DUT: mobile phone; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty

Cycle: 1:8.3; Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.98$  mho/m;

 $\epsilon r = 41.48 \; ; \rho = 1000 \; kg/m^3 \; ;$ Phantom section: Left Section

Ambient temperature ( $^{\circ}$ ): 21.0, Liquid temperature( $^{\circ}$ ): 21.0

Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

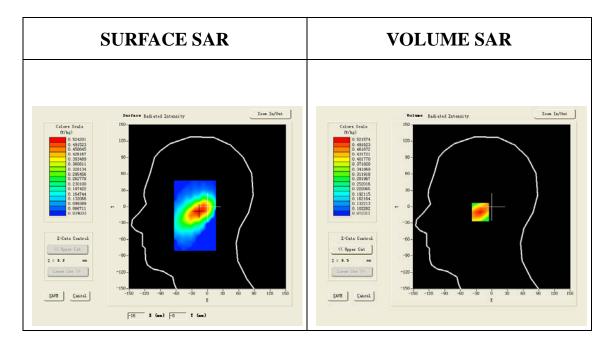
· Sensor-Surface: 4mm (Mechanical Surface Detection)

· Phantom: SAM1; Type: SAM

Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid Tilt-Left/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt	
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast	
Phantom Left head		
Device Position	Tilt	
Band	GSM850	
Channels	Middle	
Signal TDMA (Crest factor: 8.0)		

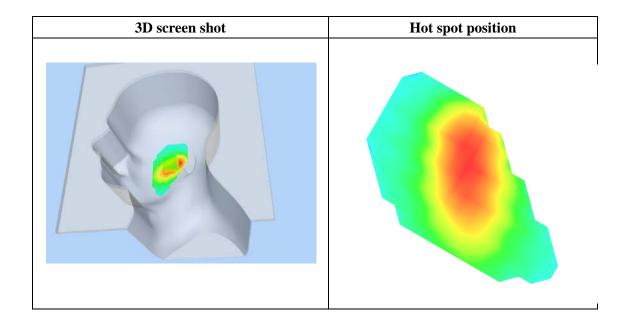


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**Maximum location: X=-18.00, Y=-10.00** 

SAR 10g (W/Kg)	0.345934
SAR 1g (W/Kg)	0.496458

Z (mm)	0.00	4.00	9.00	14.00	19.00			
SAR (W/Kg)	0.0000	0.5205	0.3801	0.2859	0.2244			
C	SAR, Z Axis Scan (X = -18, Y = -10)							
	). 45 –							
	). 40 -							
	). 30 -							
	0.18-		12.5 15.0 17. Z (mm)	5 20.0 22.5 25	5.0			



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Middle-Touch-Right<SIM 1> DUT: mobile phone; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.98$  mho/m;

εr = 41.48;p = 1000 kg/m³;
Phantom section: Right Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

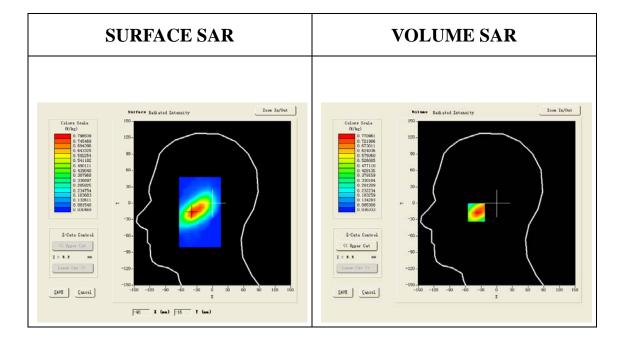
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid Touch-Right/Area Scan: Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt		
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Right head		
Device Position	Cheek		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		

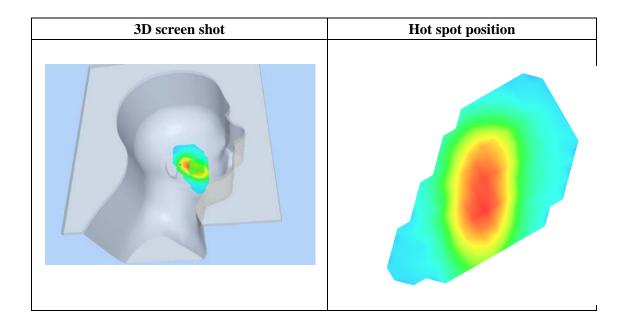


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**Maximum location: X=-39.00, Y=-17.00** 

SAR 10g (W/Kg)	0.476759	
SAR 1g (W/Kg)	0.732772	

0.00	4.00	9.00	14.00	19.00
0.0000	0.7705	0.5733	0.4175	0.2958
	xis Scan	(X = -39,	Y = -17)	
. 7 -				
. 6 -				
.5-				
. 4-				
.3-				-
			5 20.0 22.5 25	. 0
	2	(mm)		
	0.0000 SAR, Z A	0.0000 0.7705  SAR, Z Axis Scan  .8765432- 0.0 2.5 5.0 7.5 10.0	0.0000 0.7705 0.5733  SAR, Z Axis Scan (X = -39,  -8	0.0000 0.7705 0.5733 0.4175  SAR, Z Axis Scan (X = -39, Y = -17)  .8765432 - 0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid-Tilt-Right<SIM 1>

DUT: mobile phone ; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3;

Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.98$  mho/m;  $\epsilon r = 41.48$ ;

 $\rho = 1000 \text{ kg/m}^3$ ;

Phantom section: Right Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

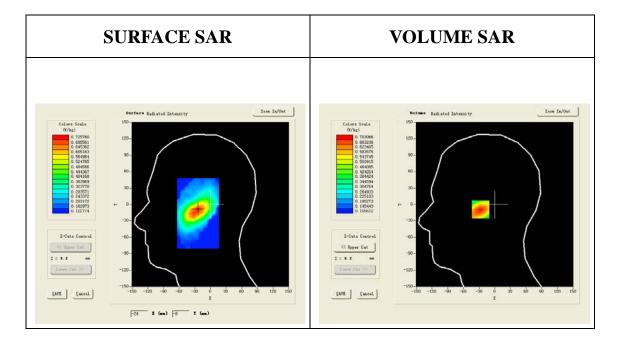
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid Tilt-Right/Area Scan: Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt		
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Right head		
Device Position	Tilt		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		

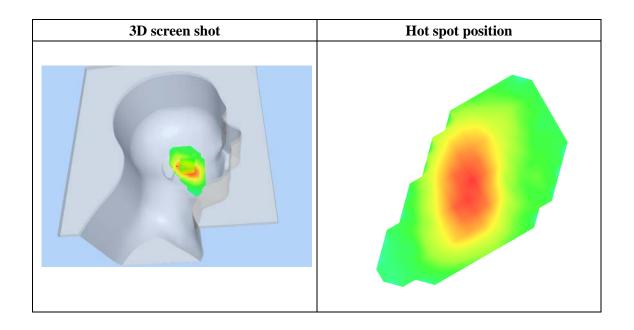


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**Maximum location: X=-24.00, Y=-9.00** 

SAR 10g (W/Kg)	0.469851	
SAR 1g (W/Kg)	0.671472	

	0.00	4.00	9.00	14.00	19.00
Z (mm)					
SAR (W/Kg)	0.0000	0.7021	0.5037	0.3865	0.3149
	a.p. a		(T 04	т o)	
	SAR, Z	Axis Scan	(X = -24,	Y = -9	
0	1. 7 -				.
0	. 6 –	+			
(F)		\			
\$ 0	.5-	++			
SAR (#/kg)					
∾ 0	. 4 –				-
0	.3-			+	-
0	0.0 2.5 5	5.0 7.5 10.0	12.5 15.0 17.	5 20.0 22.5 25	. 0
			(mm)		



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid-Touch-left<SIM 2>
DUT: mobile phone ; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 0.98$  mho/m;  $\epsilon r = 41.48$ ;

 $\rho = 1000 \text{ kg/m}^3$ ;

Phantom section: left Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

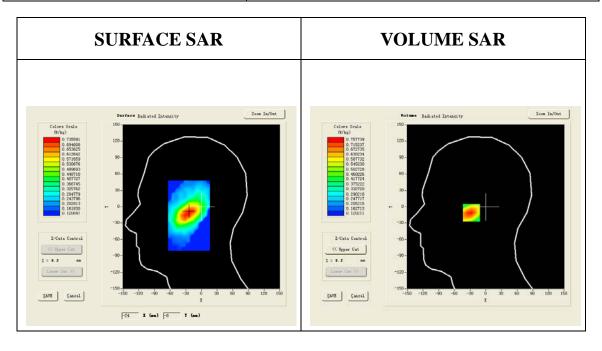
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid -Touch- left Area Scan: Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid -Touch-- left /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	sam_direct_droit2_surf8mm.txt		
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	left head		
Device Position	Check		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		

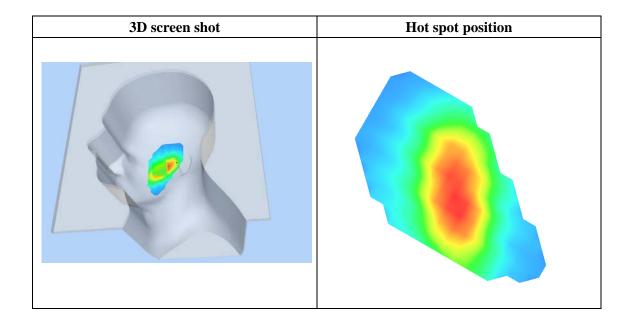


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**Maximum location: X=-24.00, Y=-11.00** 

SAR 10g (W/Kg)	0.512433
SAR 1g (W/Kg)	0.724658

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.7556	0.5712	0.4455	0.3615
		axis Scan	(X = -24,	<b>∀</b> = −11)	
	). 7 -				
//kg)	). 6 -				
SAR (W/kg)	). 5 -				
	). 4-			$\checkmark$	
U	).3-    0.0 2.5 5.		12.5 15.0 17.5 (mm)	5 20.0 22.5 25	5.0



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid- Body-Back (MS)<SIM 1> DUT: mobile phone; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3;

Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 1.02$ mho/m;  $\epsilon r = 54.68$ ;

 $\rho$ = 1000 kg/m<sup>3</sup>;

Phantom section: Flat Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

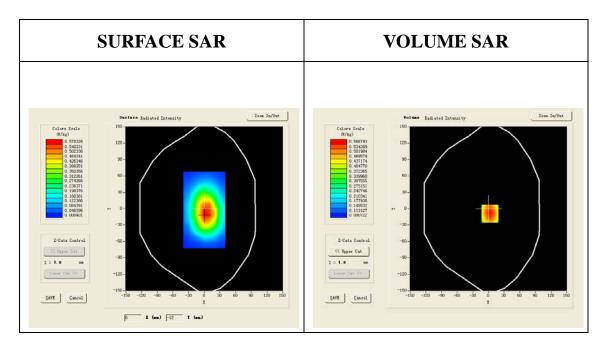
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GSM850 Mid Body-Back/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GSM850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt		
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Validation plane		
Device Position	Body		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		



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Maximum location: X=3.00, Y=-9.00

SAR 10g (W/Kg)	0.396342
SAR 1g (W/Kg)	0.584955

0.0000			14.00	19.00
0.0000	0.5654	0.4132	0.2937	0.2052
	Axis Scan	(X = 3, )	Y = -9)	
3-				
) - <del></del>				
2-				
			5 20.0 22.5 25	. o
,		0.0 2.5 5.0 7.5 10.0		0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25



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Date: Sep.18, 2012

Test Laboratory: AGC Lab

GSM 850 Mid-Body-Back (2up) <SIM 1>

DUT: mobile phone; Type: AM206

Communication System: GPRS -2 Slot; Communication System Band: GSM850; Duty Cycle: 1:4.2;

Conv.F=6.79;Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 1.02$ mho/m;  $\epsilon r = 54.68$ ;

 $\rho = 1000 \text{kg/m}^3$ ;

Phantom section: Flat Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

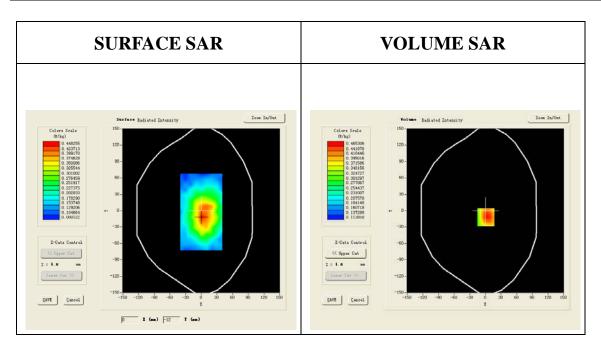
Sensor-Surface: 4mm (Mechanical Surface Detection)

· Phantom: SAM1; Type: SAM

Measurement SW: OpenSAR V4\_02\_01

Configuration/GPRS850 Mid Body-Back/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt		
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Validation plane		
Device Position	Body		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 4.0)		

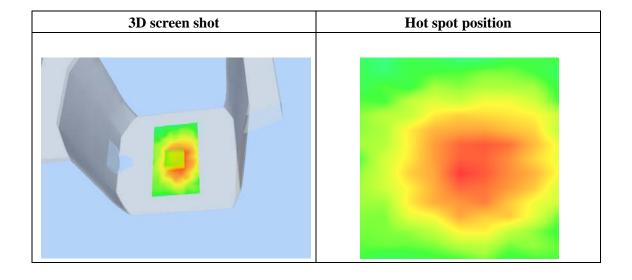


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Maximum location: X=1.00, Y=-12.00

SAR 10g (W/Kg)	0.349135	
SAR 1g (W/Kg)	0.487100	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4634	0.3352	0.2531	0.2105
0	SAR, Z	Axis Scan	(X = 1, Y	Y = −12)	
	1. 40 -				
(W/kg)	. 35 –	$+$ \			-
SAR	1. 30 -				
0	0.0 2.5 5		12.5 15.0 17. Z (mm)	5 20.0 22.5 25	5.0



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid-Body-Front (MS) <SIM 1>

DUT: mobile phone; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3;

Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 1.02$ mho/m;  $\epsilon r = 54.68$ ;

 $\rho = 1000 \text{kg/m}^3$ ;

Phantom section: Flat Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

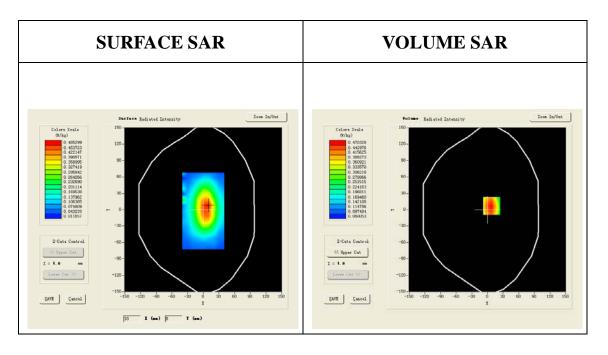
· Sensor-Surface: 4mm (Mechanical Surface Detection)

Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GPRS850 Mid Body-Front/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GPRS850 Mid Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt		
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Validation plane		
Device Position	Body		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		

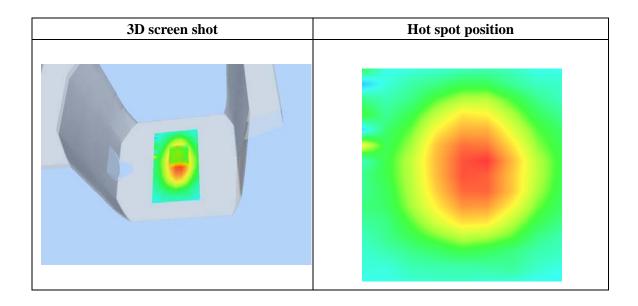


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Maximum location: X=8.00, Y=7.00

SAR 10g (W/Kg)	0.332863
SAR 1g (W/Kg)	0.487246

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4701	0.3437	0.2253	0.1830
			-	>	
	SAR, 2	Axis Scar	n (X = 8,	Y = 7)	
0	0. 47 –				
					1
0	). 40 -	+			-
~ 0	. 35 -				_
4/≝	), 35 -	\			
\$ 0	). 25 -				1
0	). 20 –		++	$\overline{}$	-
0	0.13- 0.0 2.5 5		12 5 15 0 17	5 20.0 22.5 25	
	0.0 2.5 5		12.5 15.0 11. Z (mm)	5 20.0 22.5 25	). U
			- (mm)		



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Test Laboratory: AGC Lab Date: Sep.18, 2012

GSM 850 Mid-Body-Back (with earphone) <SIM 1>

DUT: mobile phone; Type: AM206

Communication System: Generic GSM; Communication System Band: GSM850; Duty Cycle: 1:8.3; Conv.F=6.79; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz;  $\sigma = 1.02$ mho/m;  $\epsilon r = 54.68$ ;

 $\rho = 1000 \text{kg/m}^3$ ;

Phantom section: Flat Section

Ambient temperature ( $^{\circ}$ C): 21.0, Liquid temperature ( $^{\circ}$ C): 21.0

## Satimo Configuration:

Probe:SSE5; Calibrated: 12/09/2011

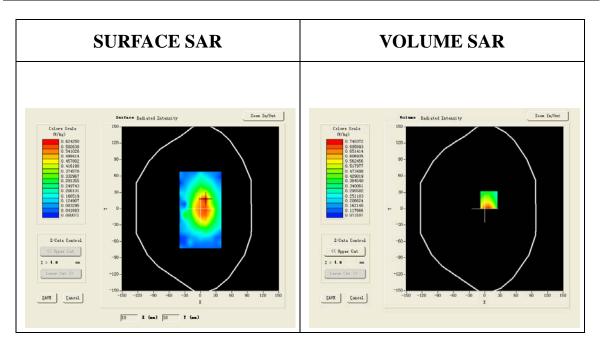
• Sensor-Surface: 4mm (Mechanical Surface Detection)

· Phantom: SAM1; Type: SAM

· Measurement SW: OpenSAR V4\_02\_01

Configuration/GPRS850 Mid Body-Back/Area Scan (6x8x1): Measurement grid: dx=20mm, dy=20mm Configuration/GPRS850 Mid Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt		
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast		
Phantom	Validation plane		
Device Position	Body		
Band	GSM850		
Channels	Middle		
Signal	TDMA (Crest factor: 8.0)		



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Maximum location: X=8.00, Y=16.00

SAR 10g (W/Kg)	0.448246
SAR 1g (W/Kg)	0.694678

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5175	0.3864	0.2905	0.2166
	SAR, Z	Axis Scan	(X = 8,	Y = 16)	
O	). 52 -				.
O	). 45 -	$\rightarrow$			
0 وي	). 40 –				
\$0	). 40 -				
SAR o	). 30 –				
C	). 25 -				
	1. 20 -				
·	0.16-  0.0 2.5 5	5.0 7.5 10.0	12.5 15.0 17.	5 20.0 22.5 25	. 0
		:	Z (mm)		

