ANSI/IEEE Std. C95.1-1992
In accordance with the requirements of
FCC Report and Order: ET Docket 93-62, and OET Bulletin 65
Supplement C

FCC SAR TEST REPORT

For
Product Name: GSM Mobile Phone

Brand Name: unnecto ™

Model No.: U-100-2

Series Model: N/A

Test Report Number:
KS110808A01-SF

Issued for

Ambitio LLC, The Owner of unnecto ™

1315 N.W 98th ct Suite 13 United States

Issued by

Compliance Certification Services Inc.

Kun shan Laboratory

No.10 Weiye Rd., Innovation park, Eco&Tec,
Development Zone, Kunshan City, Jiangsu, China

TEL: 86-512-57355888

FAX: 86-512-57370818

ACCREDITED
TESTING CERT #2541.01

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1. CERTIFICATE OF COMPLIANCE (SAR EVALUATION)

Product Name:	GSM Mobile Phone
Trade Name:	unnecto ™
Model Name.:	U-100-2
Series Model:	N/A
Applicant Discrepancy:	Initial
Devices supporting GPRS:	Class B
Description Test Modes(worst case):	The all Models EUT were pretested, the SIM1 was found to transmit the highest SAR value
Device Category:	PORTABLE DEVICES
Exposure Category:	GENERAL POPULATION/UNCONTROLLED EXPOSURE
Date of Test:	August 10, 2011
Applicant:	**Ambitio LLC, The Owner of unnecto ™** 1315 N.W 98th ct Suite 13 United States
Manufacturer:	**Shenzhen Xiangyue Perfect Digital Science & Technology Co.,Ltd** Building A1, Jiujiutongxin Industrial Zone 11, Xinbu, Tongle, Longgang, Shenzhen, China
Application Type:	Certification

APPLICABLE STANDARDS AND TEST PROCEDURES	
STANDARDS AND TEST PROCEDURES	**TEST RESULT**
FCC OET 65 Supplement C	No non-compliance noted

Deviation from Applicable Standard
None

The device was tested by Compliance Certification Services Inc. in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C(Edition 01-01). The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by: *Tested by:*

Hadiif Hoo   Star.Yao
RF Manager   Test Engineer
Compliance Certification Services Inc.   Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product Name:	GSM Mobile Phone
Model Name:	U-100-2
Series Model:	N/A
Model Discrepancy:	N/A
Brand Name:	unnecto ™
FCC ID:	ZU3UNNECTOECO2
GPRS Level:	GPRS 850:Class 12 GPRS 1900:Class 12
Power reduction:	NO
DTM Description:	N/A
Frequency Range:	GSM: 850: 824.2 ~ 848.8 MHz GSM: 1900: 1850.2 ~ 1910.0 MHz Bluetooth:2402 ~ 2480 MHz
Transmit Power(Average):	GSM 850 Band: GSM 850: 32.23 dBm GPRS 850: 23.55 dBm GSM 1900 Band: GSM 1900: 30.14 dBm GPRS 1900: 21.84 dBm	
Max. SAR:	GSM 850 Head: 0.472 W/kg Boby: 0.290 W/kg GSM 1900 Head: 0.422 W/kg Boby: 0.361 W/kg	GPRS 850: 0.301 W/kg GPRS 1900: 0.385 W/kg
Modulation Technique:	GSM / GPRS : GMSK
Accessories:	Power Adapter Brand: unnecto ™ Model No.: CU-100 Input:100-240V 0.15A 50/60Hz Output: DC 5V 500m A Li-ion Battery Brand: unnecto ™ Model No.: BU-100 Max Charging Voltage:4.2V Li-ion: 3.7V 1100mAh
Antenna Specification:	GSM: PIFA antenna
Operating Mode:	Maximum continuous output

3. REQUIREMENTS FOR COMPLIANCE TESTING DEFINED BY THE FCC

The US Federal Communications Commission has released the report and order "Guidelines for Evaluating the Environmental Effects of RF Radiation", ET Docket No. 93-62 in August 1996. The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g for an uncontrolled environment and 8.0 mW/g for an occupational/controlled environment as recommended by the ANSI/IEEE standard C95.1-1992. According to the Supplement C of OET Bulletin 65 "Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

4. TEST METHODOLOGY

The Specific Absorption Rate (SAR) testing specification, method and procedure for this Mobile Phone is in accordance with the following standards:

- 47 CFR Part 2 (2.1093)
- IEEE C95.1-1999
- KDB 941225 D01 SAR test for 3G devices
- KDB 248227 D01 SAR measurement procedures for 802.11 a/b/g transmitters
- KDB 648474 D01 SAR evaluation considerations for handsets with multiple transmitters and antennas
- OET Bulletin 65 Supplement C (Edition 01-01)
- Preliminary Guidance for Reviewing Applications for Certification of 3G Device. May 2006.

5. TEST CONFIGURATION

The device was controlled by using a base station emulator R&S CMU200. Communication between the device and the emulator was established by air link. The distance between the DUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of DUT. The DUT was set from the emulator to radiate maximum output power during all tests.

Measurements were performed on the lowest, middle, and highest channel for each testing position.

For SAR testing, EUT is in GSM/GPRS link mode. In GSM link mode, its crest factor is 8, In GPRS link mode, its crest factor is 2, because EUT is set in GPRS multi-slot class 12 with 4 uplink slots.

6. DOSIMETRIC ASSESSMENT SETUP

These measurements were performed with the automated near-field scanning system OPENSAR from ATTENNESSA. The system is based on a high precision robot (working range greater than 0.9 m), which positions the probes with a positional repeatability of better than ± 0.02 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit. The SAR measurements were conducted with the dosimetric probe EP100 1109 (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in [7] with accuracy of better than ±10%. The spherical isotropy was evaluated with the procedure described in [8] and found to be better than ±0.25 dB. The phantom used was the SAM Twin Phantom as described in FCC supplement C, IEE P1528 and CENELEC EN 62209.

The Tissue simulation liquid used for each test is in according with the FCC OET65 supplement C as listed below.

Ingredients (% by weight)	*Frequency (MHz)*									
	450		*835*		*915*		*1900*		*2450*	
Tissue Type	*Head*	*Body*	*Head*	*Body*	*Head*	*Body*	*Head*	*Body*	*Head*	*Body*
Water	*38.56*	*51.16*	*41.45*	*52.4*	*41.05*	*56.0*	*54.9*	*40.4*	*62.7*	*73.2*
Salt (NaCl)	*3.95*	*1.49*	*1.45*	*1.4*	*1.35*	*0.76*	*0.18*	*0.5*	*0.5*	*0.04*
Sugar	*56.32*	*46.78*	*56.0*	*45.0*	*56.5*	*41.76*	*0.0*	*58.0*	*0.0*	*0.0*
HEC	*0.98*	*0.52*	*1.0*	*1.0*	*1.0*	*1.21*	*0.0*	*1.0*	*0.0*	*0.0*
Bactericide	*0.19*	*0.05*	*0.1*	*0.1*	*0.1*	*0.27*	*0.0*	*0.1*	*0.0*	*0.0*
Triton X-100	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*36.8*	*0.0*
DGBE	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*44.92*	*0.0*	*0.0*	*26.7*
Dielectric Constant	*43.42*	*58.0*	*42.54*	*56.1*	*42.0*	*56.8*	*39.9*	*54.0*	*39.8*	*52.5*
Conductivity (S/m)	*0.85*	*0.83*	*0.91*	*0.95*	*1.0*	*1.07*	*1.42*	*1.45*	*1.88*	*1.78*

6.1 MEASUREMENT SYSTEM DIAGRAM

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Sẗaubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).

- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

- 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 between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.

- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.

- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.

- A computer operating Windows 2000 or Windows XP.

- DASY5 software.

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

- The SAM twin phantom enabling testing left-hand and right-hand usage.

- The device holder for handheld mobile phones.

- Tissue simulating liquid mixed according to the given recipes.

- Validation dipole kits allowing validating the proper functioning of the system.

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6.2 SYSTEM COMPONENTS

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz intel ULV celeron, 128MB chip-disk and 128 MB RAM. The necessary circuits for communication with either the DAE4(or DAE3) electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O-board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.

The PC-operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with two expansion slots which are reserved for future applications. Please note that the expansion slots do not have a standardized pinout and therefore only the expansion cards provided by SPEAG can be inserted. Expansion cards from any other supplier could seriously damage the measurement server. Calibration: No calibration required.

Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE4) consists of 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 measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE4 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV4 Isotropic E-Field Probe for Dosimetric Measurements

Construction: Symmetrical design with triangular core

Built-in shielding against static charges

PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration: Basic Broad Band Calibration in air: 10-3000 MHz.

Conversion Factors (CF) for HSL 900 and HSL 1800 CF-Calibration for other liquids and frequencies upon request.

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 HSL (rotation normal to probe axis)

Dynamic Range: 10 µW/g to > 100 mW/g; Linearity: ± 0.2 dB

(noise: typically < 1 µW/g)

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Dimensions: Overall length: 337 mm (Tip: 9 mm)
Tip diameter: 2.5 mm (Body: 10 mm)
Distance from probe tip to dipole centers: 1 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 30%.

Interior of probe

SAM Twin Phantom(V4.0)

Construction: The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.
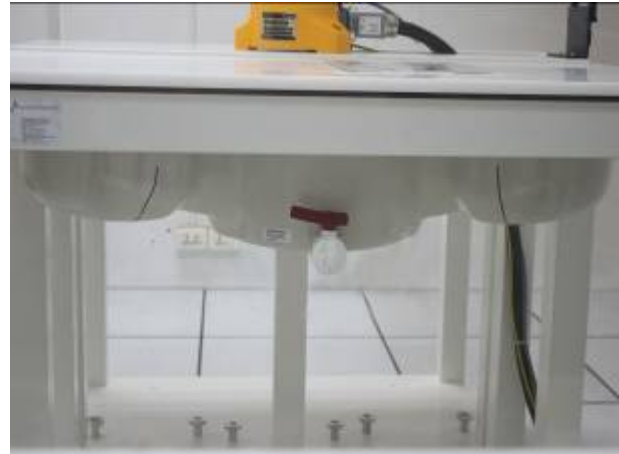
Shell Thickness: 2 ±0.2 mm

Filling Volume: Approx. 25 liters

Dimensions: Height: 850mm; Length: 1000mm; Width: 750mm

SAM Phantom (ELI4)
Description Construction:

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI4 has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is supported by software version DASY4/DASY5.5 and higher and is compatible with all SPEAG dosimetric probes and dipoles
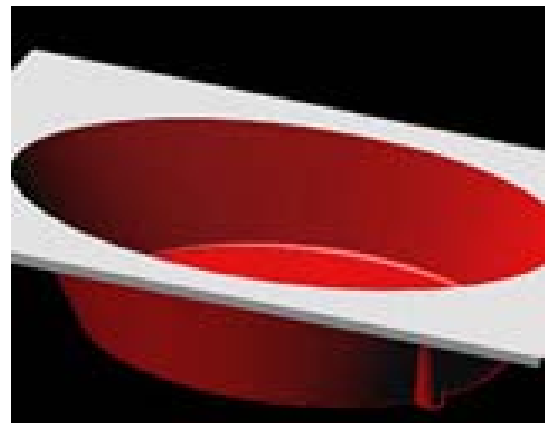
Shell Thickness: 2.0 ± 0.2 mm (sagging: <1%)

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Filling Volume: Approx. 25 liters
Dimensions: Major ellipse axis: 600 mm
Minor axis: 400 mm 500mm

Device Holder for SAM Twin Phantom

Construction: In combination with the Twin SAM Phantom, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).

System Validation Kits for SAM Twin Phantom

onstruction: Symmetrical dipole with l/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor.

Frequency: 900,1800,2450,5800 MHz

Return loss: > 20 dB at specified validation position

Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz)

ensions: D835V2: dipole length: 161 mm; overall height: 340 mm
D1800V2: dipole length: 72.5 mm; overall height: 300 mm
D1900V2: dipole length: 67.7 mm; overall height: 300 mm
D2450V2: dipole length: 51.5 mm; overall height: 290 mm
D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm

System Validation Kits for ELI4 phantom

Construction: Symmetrical dipole with l/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor.

Frequency: 900, 1800, 2450, 5800 MHz

Return loss: > 20 dB at specified validation position

Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz)

Dimensions: D835V2: dipole length: 161 mm; overall height: 340 mm
D1800V2: dipole length: 72.5 mm; overall height: 300 mm
D1900V2: dipole length: 67.7 mm; overall height: 300 mm
D2450V2: dipole length: 51.5 mm; overall height: 290 mm
D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm

7. EVALUATION PROCEDURES

DATA EVALUATION

The OPENSAR4 post processing software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i, a_{i0}, a_{i1}, a_{i2}$
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or be imported into the software from the configuration files issued for the OPENSAR components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with V_i = Compensated signal of channel i(i = x, y, z)
         U_i = Input signal of channel i   (i = x, y, z)
         cf = Crest factor of exciting field   (OPENSAR parameter)
         dcp_i = Diode compression point   (OPENSAR parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $$E_i = \sqrt{\frac{V_i}{Norm_i \bullet ConvF}}$$

H-field probes: $$H_i = \sqrt{Vi} \cdot \frac{a_{i10} + a_{i11}f + a_{i12}f^2}{f}$$

with V_i = Compensated signal of channel i(i = x, y, z)
         $Norm_i$ = Sensor sensitivity of channel i   (i = x, y, z)
             $\mu V/(V/m)^2$ for E0field Probes
         $ConvF$ = Sensitivity enhancement in solution
         aij = Sensor sensitivity factors for H-field probes
         f = Carrier frequency (GHz)
         Ei = Electric field strength of channel i in V/m
         Hi = Magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

ρ = equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

The power flow density is calculated assuming the excitation field as a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = H_{tot}^2 \cdot 37.7$$

with P_{pwe} = Equivalent power density of a plane wave in mW/cm^2

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m

SAR EVALUATION PROCEDURES

The procedure for assessing the peak spatial-average SAR value consists of the following steps:

- **Power Reference Measurement**

  The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

- **Area Scan**

  The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a finer measurement around the hot spot. The sophisticated interpolation routines implemented in OPENSAR software can find the maximum locations even in relatively coarse grids. The scan area is defined by an editable grid. This grid is anchored at the grid reference point of the selected section in the phantom. When the area scan's property sheet is brought-up, grid was at to 15 mm by 15 mm and can be edited by a user.

- **Zoom Scan**

  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. The default zoom scan measures 5 x 5 x 7 points within a cube whose base faces are centered around the maximum found in a preceding area scan job within the same procedure. If the preceding Area Scan job indicates more then one maximum, the number of Zoom Scans has to be enlarged accordingly (The default number inserted is 1).

- **Power Drift measurement**

  The drift job measures the field at the same location as the most recent reference job within the same procedure, and with the same settings. The drift measurement gives the field difference in dB from the reading conducted within the last reference measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test within a batch process. In the properties of the Drift job, the user can specify a limit for the drift and have OPENSAR software stop the measurements if this limit is exceeded.

SPATIAL PEAK SAR EVALUATION

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1529 standard. It can be conducted for 1 g and 10 g.

The OPENSAR4 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maximum searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.

Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Cube Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 5x5x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1 g and 10 g cubes.

Boundary effect

For measurements in the immediate vicinity of a phantom surface, the field coupling effects between the probe and the boundary influence the probe characteristics. Boundary effect errors of different dosimetric probe types have been analyzed by measurements and using a numerical probe model. As expected, both methods showed an enhanced sensitivity in the immediate vicinity of the boundary. The effect strongly depends on the probe dimensions and disappears with increasing distance from the boundary. The sensitivity can be approximately given as:

$$S \approx S_o + S_b exp(-\frac{z}{a})cos(\pi\frac{z}{\lambda})$$

Since the decay of the boundary effect dominates for small probes ($a<<\lambda$), the cos-term can be omitted. Factors Sb (parameter Alpha in the OPENSAR software) and a (parameter Delta in the OPENSAR software) are assessed during probe calibration and used for numerical compensation of the boundary effect. Several simulations and measurements have confirmed that the compensation is valid for different field and boundary configurations.

This simple compensation procedure can largely reduce the probe uncertainty near boundaries. It works well as long as:

- the boundary curvature is small
- the probe axis is angled less than 30_ to the boundary normal
- the distance between probe and boundary is larger than 25% of the probe diameter
- the probe is symmetric (all sensors have the same offset from the probe tip)

Since all of these requirements are fulfilled in a OPENSAR system, the correction of the probe boundary effect in the vicinity of the phantom surface is performed in a fully automated manner via the measurement data extraction during post processing.

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8. MEASUREMENT UNCERTAINTY

UNCERTAINTY BUDGE ACCORDING TO IEEE P1528						
Error Description	Uncertainty Value ±%	Probability distribution	Divisor	C_1 1g	Standard unc.(1g/10g) ±%	V_1 or V_{eff}
Measurement System						
Probe calibration	±5.5	normal	1	1	±5.5	∞
Axial isotropy of probe	±4.7	rectangular	√3	$(1-Cp)^{1/2}$	±1.9	∞
Sph. Isotropy of probe	±9.6	rectangular	√3	$(Cp)^{1/2}$	±3.9	∞
Probe linearity	±4.7	rectangular	√3	1	±2.7	∞
Detection Limit	±1.0	rectangular	√3	1	±0.6	∞
Boundary effects	±1.0	rectangular	√3	1	±0.6	∞
Readoutelectronics	±0.3	normal	1	1	±0.3	∞
Response time	±0.8	rectangular	√3	1	±0.5	∞
Integration time	±2.6	rectangular	√3	1	±1.5	∞
Probe positioning	±0.4	rectangular	√3	1	±0.2	∞
Extrap. And integration	±4.0	rectangular	√3	1	±2.3	∞
RF ambient conditiona	±3.0	rectangular	√3	1	±1.7	∞
RF ambient conditiona	±3.0	rectangular	√3	1	±1.7	∞
Test Sample Related						
Device positioning	±2.9	normal	1	1	±2.9	145
Device holder uncertainty	±3.6	normal	1	1	±3.6	5
Power drift	±5.0	rectangular	√3	1	±2.9	∞
Phantom and Set up						
Phantom uncertainty	±4.0	rectangular	√3	1	±2.3	∞
Liquid conductivity	±5.0	rectangular	√3	0.6	±1.8/1.2	∞
Liquid conductivity	±1.5	rectangular	√3	0.6	±0.6	∞
Liquid permittivity	±5.0	rectangular	√3	0.6	±1.7/1.4	∞
Liquid permittivity	±1.0	rectangular	√3	0.6	±0.4	∞
Combined Standard Uncertainty					±10.375/±10.112	
Coverage Factor for 95%		kp=2				
Expanded Standard Uncertainty					±20.75/±19.23	

Table: Worst-case uncertainty for DASY5 assessed according to IEEE P1528.
The budge is valid for the frequency range 300 MHz to 6G Hz and represents a worst-case analysis.

9. EXPOSURE LIMIT

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	**Partial-Body**	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B). Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Note: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 10 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 1 grams of tissue defined as a tissue volume in the shape of a cube.

Population/Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

>   **Occupational/Controlled Environments** are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

NOTE
GENERAL POPULATION/UNCONTROLLED EXPOSURE
PARTIAL BODY LIMIT
1.6 W/kg

10. EUT ARRANGEMENT

Please refer to IEEE P1528 illustration below.

10.1 ANTHROPOMORPHIC HEAD PHANTOM

Figure 7-1a shows the front, back and side views of SAM. The point "M" is the reference point for the center of mouth, "LE" is the left ear reference point (ERP), and "RE" is the right ERP. The ERPs are 15 mm posterior to the entrance to ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 7-1b. The plane passing through the two ear reference points and M is defined as the Reference Plane. The line N-F (Neck-Front) perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 7-1c). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines should be marked on the external phantom shell to facilitate handset positioning. Posterior to the N-F line, the thickness of the phantom shell with the shape of an ear is a flat surface 6 mm thick at the ERPs. Anterior to the N-F line, the ear is truncated as illustrated in Figure 7-1b. The ear truncation is introduced to avoid the handset from touching the ear lobe, which can cause unstable handset positioning at the cheek.

Figure 7-1a
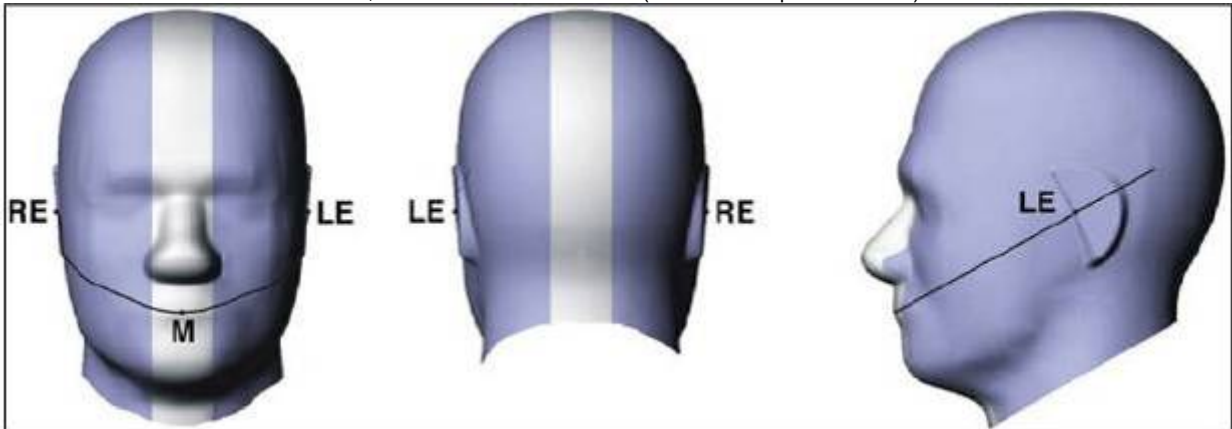Front, back and side view of SAM (model for the phantom shell)
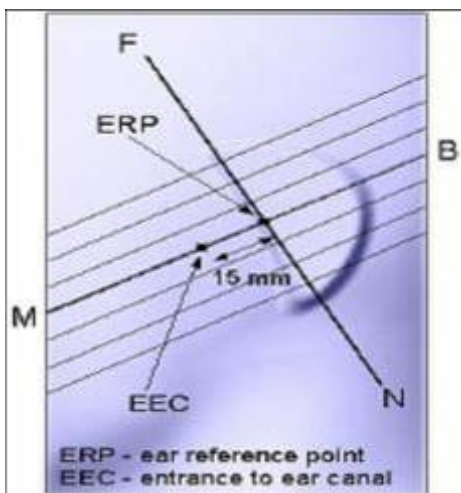

Figure 7-1b
Close up side view of phantom showing the ear region

Figure 7-1c
Side view of the phantom showing relevant markings and the 7 cross sectional plane locations

Figure 7-1b
Close up side view of phantom showing the ear region

Figure 7-1c
Side view of the phantom showing relevant markings and the 7 cross sectional plane locations
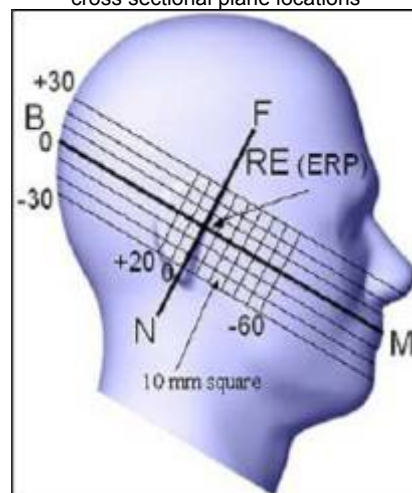
10.2 DEFINITION OF THE "CHEEK/TOUCH" POSITION

The "cheek" or "touch" position is defined as follows:

a. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece, open the cover. (If the handset can also be used with the cover closed both configurations must be tested.)

b. Define two imaginary lines on the handset: the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width wt of the handset at the level of the acoustic output (point A on Figures 7-2a and 7-2b), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 7-2a). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 7-2b), especially for clamshell handsets, handsets with flip pieces, and other irregularly-shaped handsets.

c. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 7-2c), such that the plane defined by the vertical center line and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.

d. Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the pinna.

e. e) While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to MB-NF including the line MB (called the reference plane).

f. Rotate the handset around the vertical centerline until the handset (horizontal line) is symmetrical with respect to the line NF.

g. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE and maintaining the handset contact with the pinna, rotate the handset about the line NF until any point on the handset is in contact with a phantom point below the pinna (cheek). See Figure 7-2c. The physical angles of rotation should be noted.
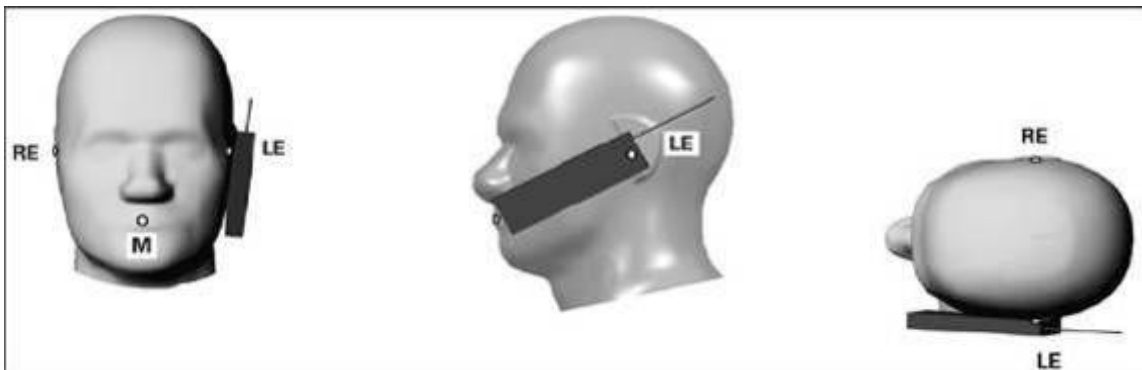

Figure 7.2c
Phone "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE)
and mouth (M), which define the reference plane for handset positioning, are indicated.
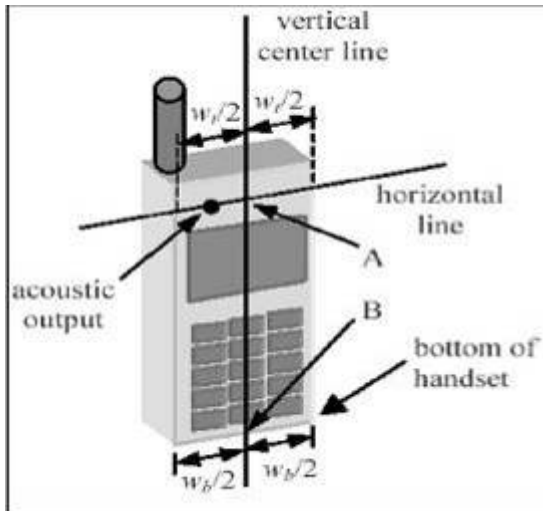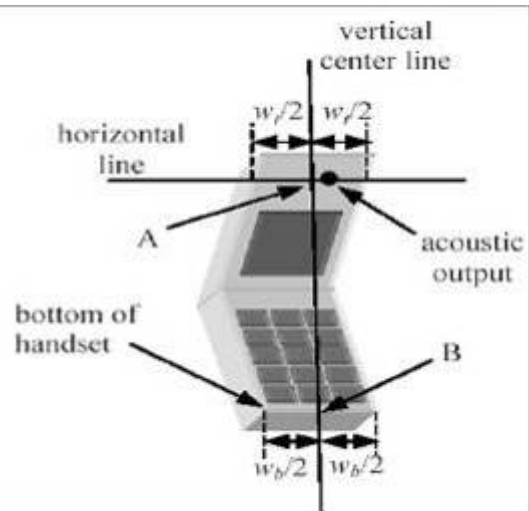
Figure 7.2a   Figure 7.2b

10.3 DEFINITION OF THE "TILTED" POSITION

The "tilted" position is defined as follows:

a. Repeat steps (a) – (g) of 7.2 to place the device in the "cheek position."

b. While maintaining the orientation of the handset move the handset away from the pinna along the line passing through RE and LE in order to enable a rotation of the handset by 15 degrees.

c. Rotate the handset around the horizontal line by 15 degrees.

d. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilted position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna (e.g., the antenna with the back of the phantom head), the angle of the handset should be reduced. In this case, the tilted position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is contact with the phantom (e.g., the antenna with the back of the head).

Figure 7-3
Phone "tilted" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for handset positioning, are indicated.
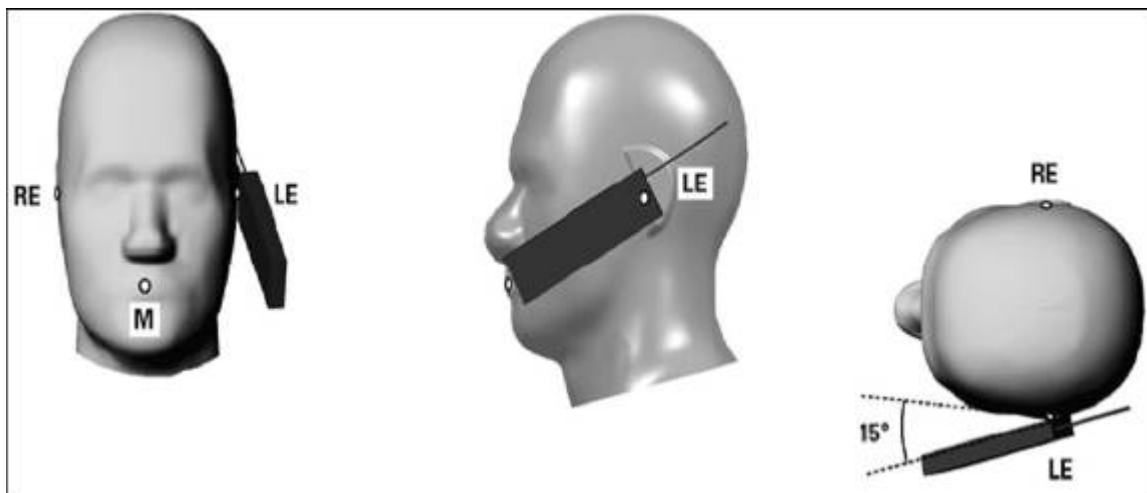
11.   MEASUREMENT RESULTS

11.1   TEST LIQUIDS CONFIRMATION

SIMULATED TISSUE LIQUID PARAMETER CONFIRMATION

The dielectric parameters were checked prior to assessment using the HP85070C dielectric probe kit. The dielectric parameters measured are reported in each correspondent section.

IEEE SCC-34/SC-2 P1528 RECOMMENDED TISSUE DIELECTRIC PARAMETERS

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 and extrapolated according to the head parameters specified in P1528

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
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	0.98	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	45.3	5.27	48.2	6.00

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

LIQUID MEASUREMENT RESULTS

Ambient condition: Temperature: <u>21</u> °C Relative humidity: <u>58</u>%

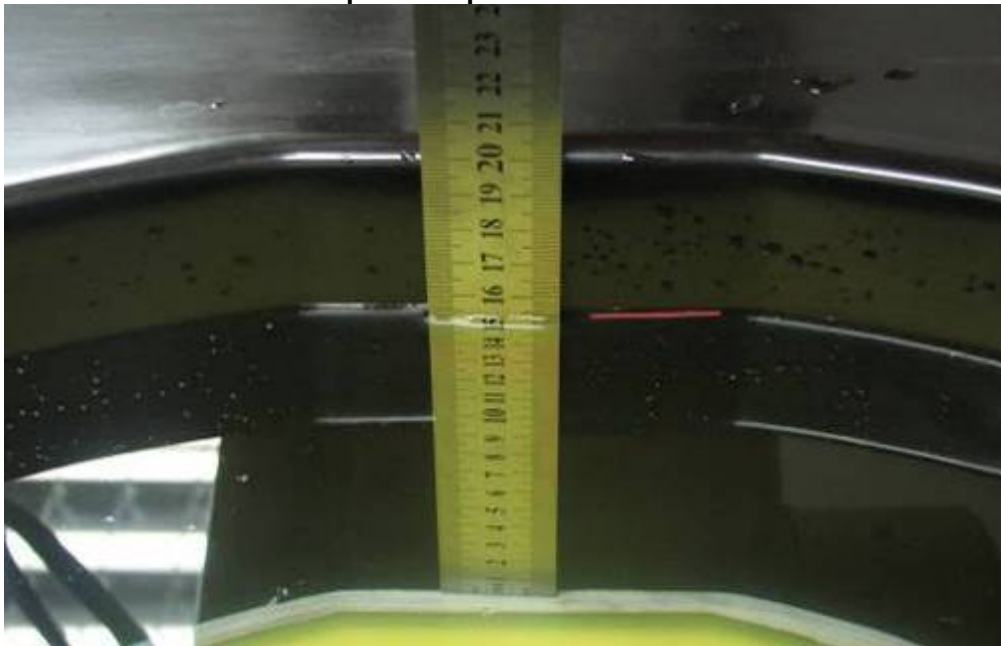| Liquid Type	Frequency	Temp. [°C]	Depth [cm]	Parameters	Target	Measured	Deviation[%]	Limited[%]	Measured Date
Head850	850 MHz	21	15	Permitivity	41.50	41.44	-0.14	± 5	Aug 10,2011
		21	15	Conductivity	0.90	0.93	3.33	± 5	Aug 10,2011
Body850	850 MHz	21	15	Permitivity	55.20	55.5	0.54	± 5	Aug 10,2011
		21	15	Conductivity	0.97	1	3.09	± 5	Aug 10,2011
Head1900	1900 MHz	21	15	Permitivity	40.00	40.19	0.47	± 5	Aug 10,2011
		21	15	Conductivity	1.40	1.45	3.57	± 5	Aug 10,2011
Body1900	1900 MHz	21	15	Permitivity	53.30	52.17	-2.12	± 5	Aug 10,2011
		21	15	Conductivity	1.52	1.52	0.00	± 5	Aug 10,2011

11.2   SYSTEM PERFORMANCE CHECK

The system performance check is performed prior to any usage of the system in order to guarantee reproducible results. The system performance check verifies that the system operates within its specifications of ±10%. The system performance check results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

SYSTEM PERFORMANCE CHECK MEASUREMENT CONDITIONS

- The measurements were performed in the flat section of the SAM twin phantom filled with head and body simulating liquid of the following parameters.

- The OPENSAR system withan E-fileld probe EX3DV4 SN: 3755 was used for the measurements.

- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 15 mm (below 1 GHz) and 10 mm (above 1 GHz) from dipole center to the simulating liquid surface.

- The coarse grid with a grid spacing of 10mm was aligned with the dipole.

- Special 7x7x7 fine cube was chosen for cube integration (dx= 5 mm, dy= 5 mm, dz= 5 mm).

- Distance between probe sensors and phantom surface was set to 2.5 mm.

- The dipole input power was 1W±3%.

- The results are normalized to 1 W input power.

The depth of Liquid must above 15cm

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Reference SAR values

The reference SAR values were using measurement results indicated in the dipole calibration document (see table below)

Frequency (MHz)	1g SAR	10g SAR	Local SAR at Surface (Above Feed Point)	Local SAR at Surface (y = 2cm offset from feed point)
850 Head	9.52	6.20	14.1	4.9
850 Body	10.12	6.64		
1900 Head	41.20	21.32	67.6	6.6
1900 Body	40.40	21.24		

SYSTEM PERFORMANCE CHECK RESULTS
Ambient conduction

Temperature: 21 °C Relative humidity: 58%

System Validation Dipole: D835V2-SN:4d114   **Date**: Aug 10,2011

Head Simulatinf Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth [cm]					
850 MHz	20.30	15.00	1g SAR	9.52	9.68	1.68	±10
			10g SAR	6.20	6.12	-1.29	±10

Temperature: 21 °C Relative humidity: 58%

System Validation Dipole: D835V2-SN:4d114   **Date**: Aug 10,2011

Body Simulatinf Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth [cm]					
850 MHz	20.30	15.00	1g SAR	10.12	10.08	-0.40	±10
			10g SAR	6.64	6.64	0.00	±10

Temperature: 21 °C Relative humidity: 58%

System Validation Dipole: D1900V2-SN:5d136   **Date**: Aug 10,2011

Head Simulatinf Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth [cm]					
1900 MHz	20.30	15.00	1g SAR	41.20	39.24	-4.76	±10
			10g SAR	21.32	20.88	-2.06	±10

Temperature: 21 °C Relative humidity: 58%

System Validation Dipole: D1900V2-SN:5d136   **Date**: Aug 10,2011

Body Simulatinf Liquid			Parameters	Target	Measured	Deviation[%]	Limited[%]
Frequency	Temp. [°C]	Depth [cm]					
1900 MHz	20.30	15.00	1g SAR	40.40	40.44	0.10	±10
			10g SAR	21.24	20.64	-2.82	±10

11.3 EUT TUNE-UP PROCEDURES AND TEST MODE

The following procedure had been used to prepare the EUT for the SAR test.

a. To setup the desire channel frequency and the maximum output power. A Radio Communication Tester "CMU200 " was used to program the EUT.

GSM 850 / GPRS850:
> Network Support: GSM only / GPRS
> Main Service: Circuit Switched / Packet data
> Power Setting: 33dBm / 33dBm

GSM 1900 / GPRS 1900:
> Network Support: GSM only / GPRS
> Main Service: Circuit Switched / Packet data
> Power Setting: 30dBm / 30dBm

Bluetooth

a. The client supplied a special driver to program the EUT, allowing it to continually transmit the specified maximum power and change the channel frequency.

b. Maximum conducted power was measured by replacing the antenna with an adapter for conductive measurement.

c. The conducted power was measured at the high, middle and low channel frequency before and after the SAR measurement.

d. During SAR test, the highest output channel per band measured first, and then if necessary, the other channels were measured according to the normal procedures.

11.4 CONDUCTED OUTPUT POWER

Conducted output power (Average):
For GSM:

GSM	Frequency		GSM mode	
	Channel	MHz	before	after
	128	824.2	32.14	32.12
GSM850	190	836.6	**32.23**	32.19
	251	848.8	32.18	32.16

GSM	Frequency		GSM mode	
	Channel	MHz	before	after
	512	1850.2	**30.14**	30.10
GSM1900	661	1880.0	29.69	29.66
	810	1910.0	29.53	29.49

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For GPRS: It support GPRS Class 12

System and Channel	Power values (dbm)	Average factor (db)	Time average (dbm) (before)	Time average (dbm) (after)
GSM850 CH180(1TS)	---	---	---	---
GPRS850 CH190				
1TS	32.21	-9.03	23.18	---
2TS	29.35	-6.02	23.33	---
3TS	27.65	-4.26	23.39	---
4TS	**26.56**	**-3.01**	**23.55**	**23.52**
GSM1900 Ch 661(1TS)	---	---	---	---
GPRS1900 Ch 661				
1TS	30.12	-9.03	21.09	---
2TS	27.53	-6.02	21.51	---
3TS	25.46	-4.26	21.20	---
4TS	**24.85**	**-3.01**	**21.84**	**21.82**

NOTE: 1)For GSM ,complete set of tests are performed ,For GPRS ,only the modes with maximum time average power values need to be tested respectively, So GPRS 850 only 4timeslot mode and GPRS 1900 only 4timeslot mode are tested.

2)For GPRS ,the test modes are the worst case of GSM modes

3) GSM has 8 timeslot

Average factor: when 1TS : 10*LOG1/8=-9.03

2TS: 10*LOG2/8=-6.02

3TS: 10*LOG3/8=-4.26

4TS: 10*LOG4/8=-3.01

Time average power: when 1TS=Power value+ Average factor=32.21+(-9.03)=23.18dbm

2TS,3TS and 4TS in a similar way

GSM Multi-slot classes supported by the devices:

Multislot Class	Max Slot Allocation			Allowable Configuration	Max Data Rate
	Downlink	Uplink	Active		
12	4	4	5	1 up; 4 down	8-12K bps Send 32-48K bps Receive
				2 up; 3 down	16-24K bps Send 24-36K bps Receive
				3 up; 2 down	24-36K bps Send 16-24K bps Receive
				4 up; 1 down	32-48K bps Send 8-12K bps Receive

Bluetooth output power (Average)(dBm)

Mode Frequency	DATA1 1M	DATA1 3M
2402 MHz	0.86	0.57
2441 MHz	**1.13**	0.86
2480 MHz	0.88	0.74

Ps.

1.13dBm(=1.28 mW) ≤2·Pref(24mW)

(1)Antenna(BT) is ≥5 cm from other antennas(GSM), *so **BT stand-alone SAR is not required**,*

11.5 SAR HANDSETS MULTI XMITER ASSESSMENT

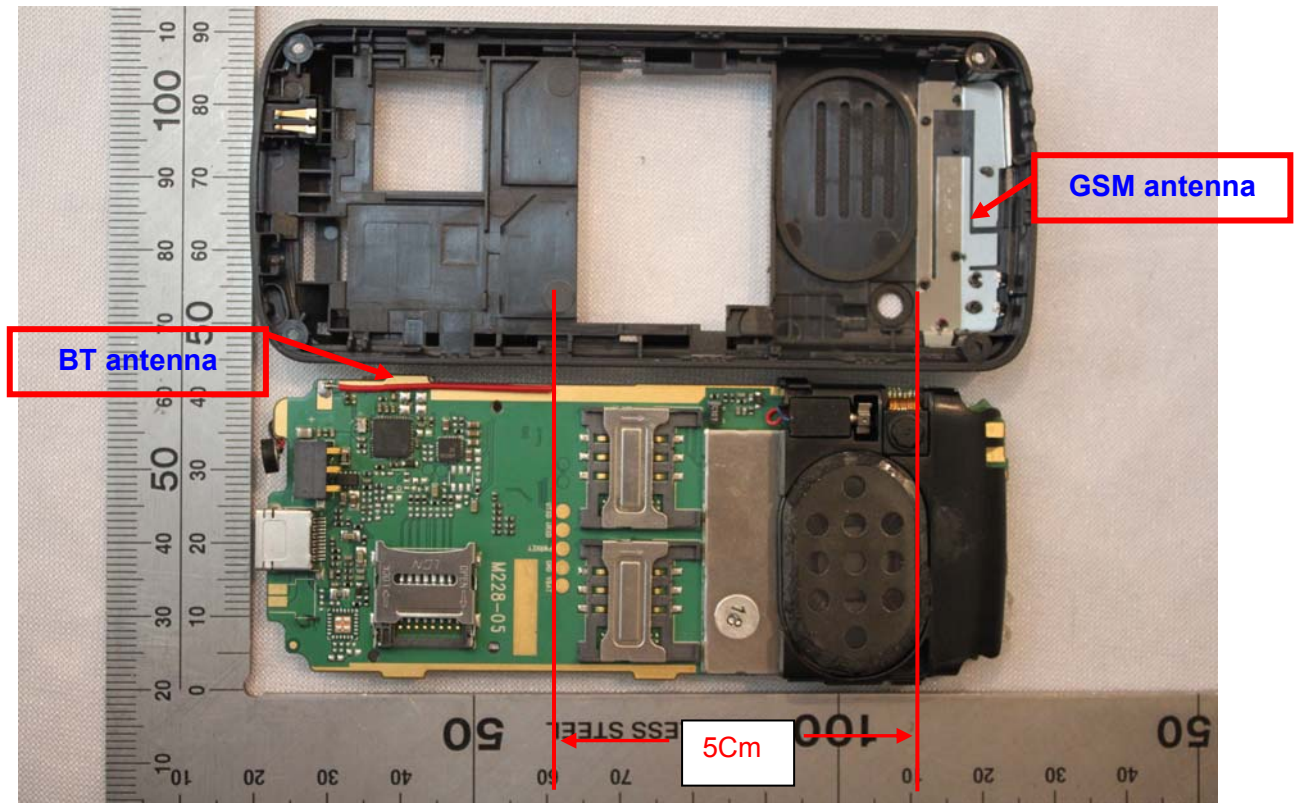**KDB 648474 simultaneous SAR evaluation:**

It's an individual transmitter, and isn't applied for simultaneous transmitting.

Antenna Location:

antenna1	antenna2	GSM to Bluetooth antenna distance(cm)	remark
GSM	Bluetooth	5cm	Please refer to page 25

Device mode, f	P, dBm	P, mW	stand-alone SAR(W/kg)
GSM 850/1900	Please refer to page 23		Yes, Please refer to page 28,30
GPRS 850/1900	Please refer to page 24		Yes, Please refer to page 29, 31
Bluetooth, 2441	1.13	1.28	No, Please refer to page 25

(x,y)	d_{xy}, cm	simultaneous Tx SAR	remarks
GSM to Bluetooth antenna distance(cm)	5 cm	No	GSM/BT , Antenna distance above than 5cm , and BT Max power is less than 24mW. so no Simultaneous SAR needed.

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11.6 EUT SETUP PHOTOS

Cheek device with right head phantom.
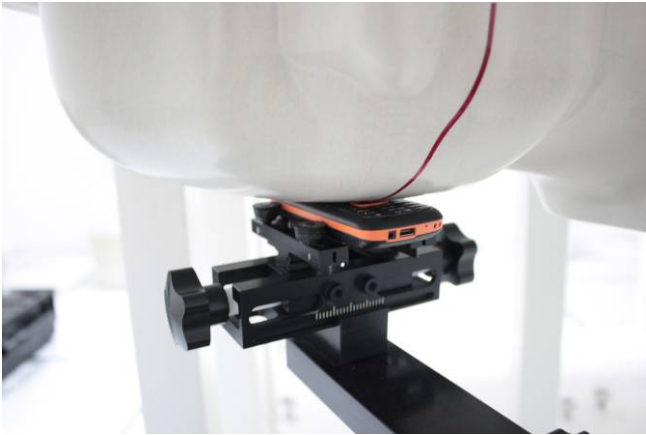
EUT Setup Configuration 1

Tilt device with right head phantom

EUT Setup Configuration 2

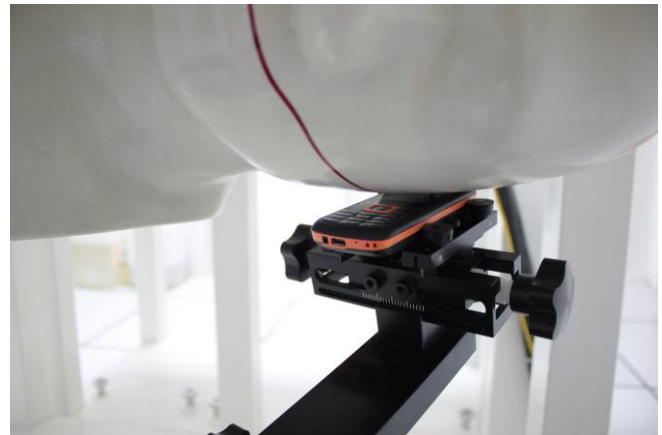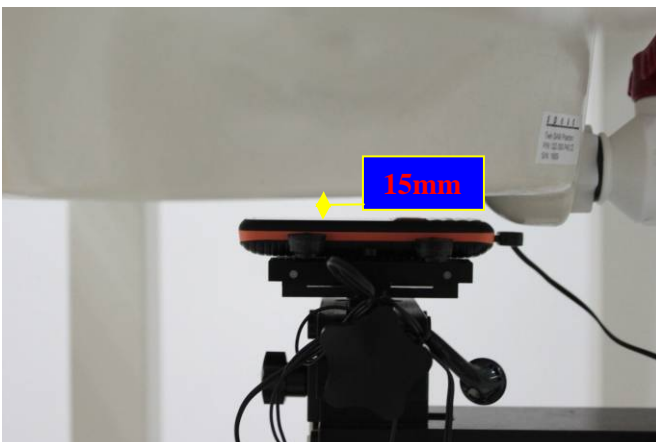**Cheek device with left head phantom.**
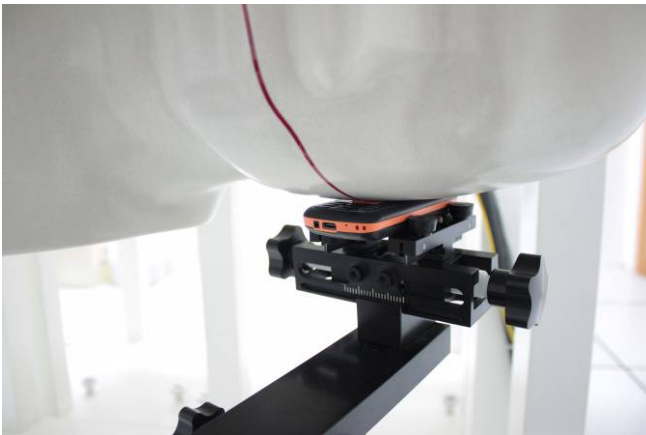
EUT Setup Configuration 3

Tilt device with left head phantom

EUT Setup Configuration 4

Up in body position

15mm

EUT Setup Configuration 5

Down in body position

15mm

EUT Setup Configuration 6

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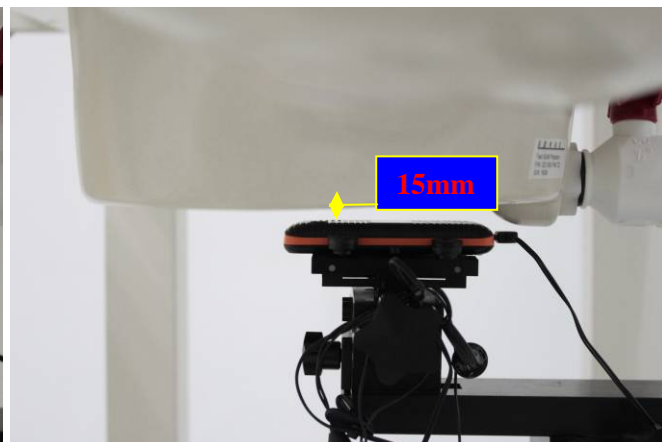
11.7 SAR MEASUREMENT RESULTS

Date of Measurement: Aug 10, 2011

SAR Measurement   GSM 850

Crest Factor: <u>8</u> (Duty cycle: <u>12.5%</u>)   Depth of Liquid: <u>15.0</u> cm

EUT Configuration 1&2

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Right / Cheek	Fixed	128	824.2	20.0	0.401	1.6
		190	836.6	20.0	0.455	
		251	848.8	20.0	0.472	
Right / Tilt	Fixed	128	824.2	20.0	0.286	
		190	836.6	20.0	0.352	
		251	848.8	20.0	0.320	

EUT Configuration 3&4

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Left / Cheek	Fixed	128	824.2	20.0	0.365	1.6
		190	836.6	20.0	0.403	
		251	848.8	20.0	0.378	
Left / Tilt	Fixed	128	824.2	20.0	0.325	
		190	836.6	20.0	0.353	
		251	848.8	20.0	0.292	

EUT Configuration 5:UP

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	251	848.8	20.0	0.168	1.6

EUT Configuration 6:Down

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	251	848.8	20.0	0.290	1.6

Remarks: For SAR testing, EUT is in GSM link mode. In GSM850 link mode, its crest factor is 8. (Duty cycle: 1:8)

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Date of Measurement: Aug 10, 2011

SAR Measurement GPRS 850 Class 12						
Crest Factor: 2 (Duty cycle: 50%) Depth of Liquid: 15.0 cm						

EUT Configuration 5:UP						
EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	251	848.8	20.0	0.148	1.6

EUT Configuration 6:Down						
EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	251	848.8	20.0	0.301	1.6

Remarks: For SAR testing, EUT is in GPRS link mode. In GPRS850 link mode, its crest factor is 2. (Duty cycle: 1:2)

Date of Measurement : Aug 10, 2011

SAR Measurement   GSM 1900

Crest Factor: 8 (Duty cycle: 12.5%)   Depth of Liquid: 15.0 cm

EUT Configuration 1&2

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Right — Cheek	Fixed	512	1850.20	20.0	0.422	1.6
		661	1880.00	20.0	0.289	
		810	1910.00	20.0	0.352	
Right — Tilt	Fixed	512	1850.20	20.0	0.091	
		661	1880.00	20.0	0.108	
		810	1910.00	20.0	0.133	

EUT Configuration 3&4

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Left — Cheek	Fixed	512	1850.20	20.0	0.412	1.6
		661	1880.00	20.0	0.352	
		810	1910.00	20.0	0.366	
Left — Tilt	Fixed	512	1850.20	20.0	0.091	
		661	1880.00	20.0	0.105	
		810	1910.00	20.0	0.130	

EUT Configuration 5:UP

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	512	1850.20	20.0	0.154	1.6

EUT Configuration 6:Down

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	512	1850.20	20.0	0.361	1.6

Remarks: For SAR testing, EUT is in GSM link mode. In GSM1900 link mode, its crest factor is 8.
(Duty cycle: 1:8)

Date of Measurement: Aug 10, 2011

SAR Measurement GPRS 1900 Class 12
Crest Factor: 2 (Duty cycle: 50%) Depth of Liquid: 15.0 cm

EUT Configuration 5:UP

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	512	1850.20	20.0	0.174	1.6

EUT Configuration 6:Down

EUT Setup Condition		Frequency		Liquid Temp [°C]	SAR(1g) (W/kg)	Limit (W/kg)
Position	Antenna	Channel	MHz			
Flat(1.5cm)	Fixed	512	1850.20	20.0	0.385	1.6

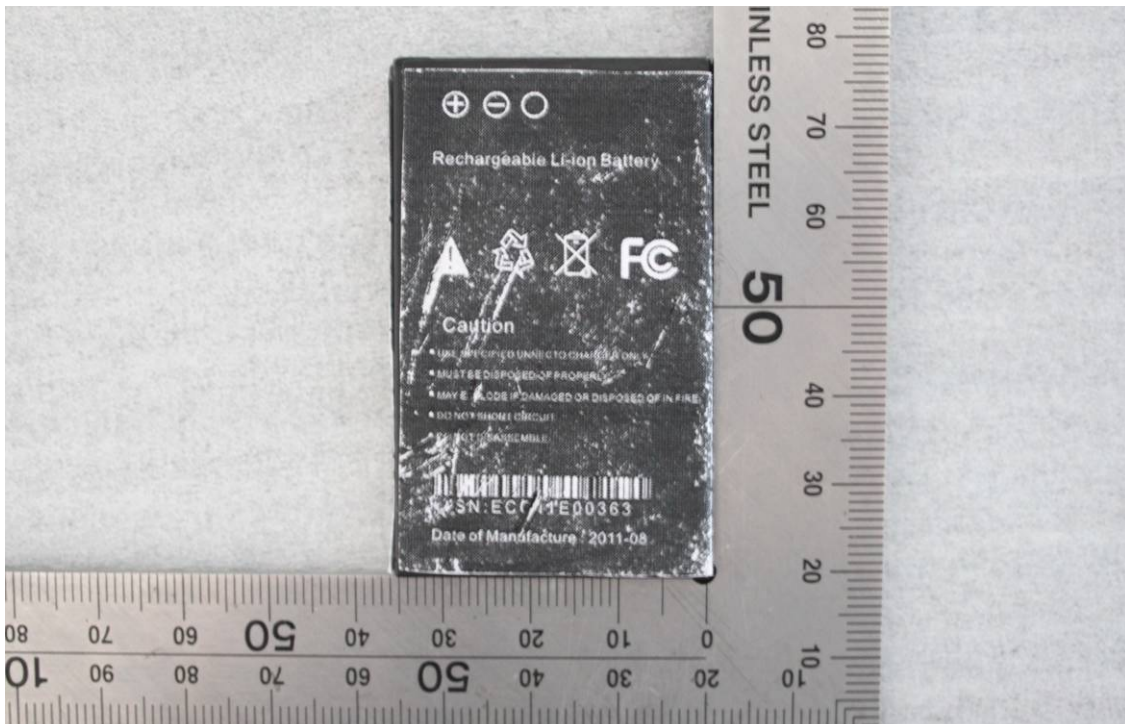Remarks: For SAR testing, EUT is in GPRS link mode. In GPRS 1900 link mode, its crest factor is 2. (Duty cycle: 1:2)

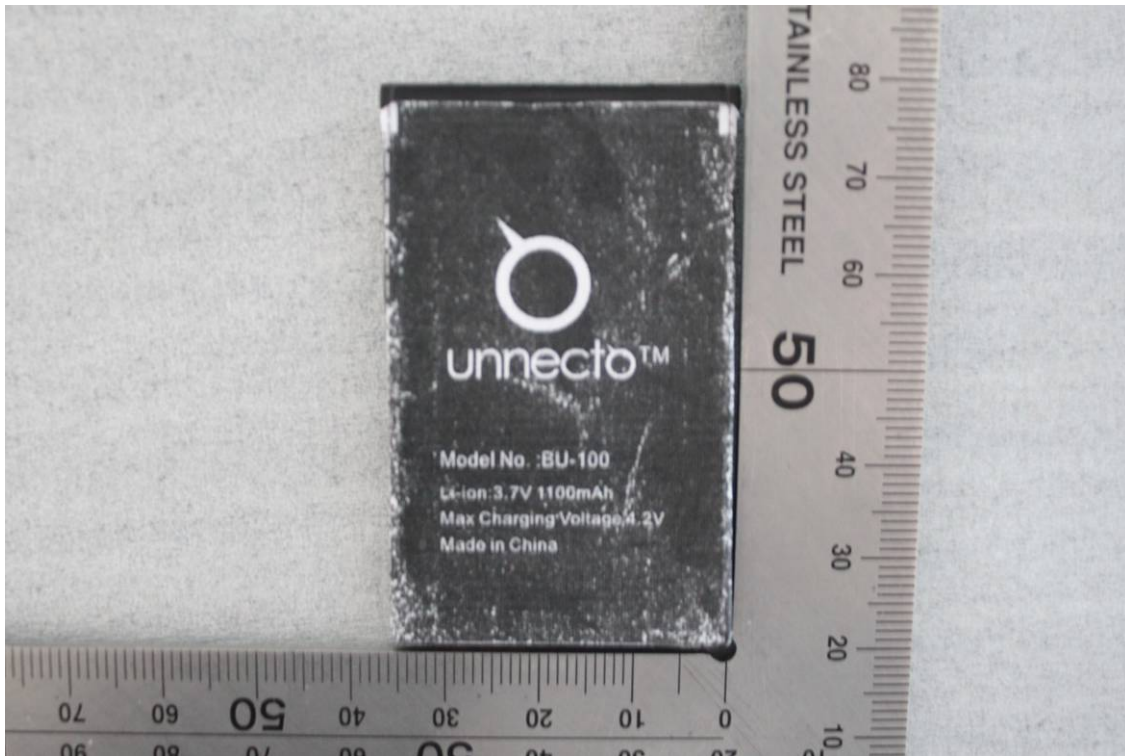*This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.*

12.   EUT PHOTO

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13.   EQUIPMENT LIST & CALIBRATION STATUS

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration Due
P C	HP	Core(rm)3.16G	CZCO48171H	2012-5-26
Signal Generator	Agilent	E8257C	MY43321570	2012-3-16
S-Parameter Network Analyzer	Agilent	E5071B	MY42301382	2012-5-26
Wireless Communication Test Set	R&S	CMU200	SN:B23-03291	2012-3-16
Power Meter	Agilent	E4416A	QB41292714	2012-3-16
Peak & Average sensor	Agilent	E9327A	CF0001	2012-1-20
E-field PROBE	SPEAG	EX3DV4	3755	2012-1-20
DIPOLE 835MHZ ANTENNA	SPEAG	D835V2	4d114	2012-1-26
DIPOLE 1800MHZ ANTENNA	SPEAG	D1800V2	2d170	2012-1-5
DIPOLE 1900MHZ ANTENNA	SPEAG	D1900V2	5d136	2012-1-26
DIPOLE 2450MHZ ANTENNA	SPEAG	D2450V2	817	2012-1-12
DIPOLE 2000MHZ ANTENNA	SPEAG	D2000V2	1041	2012-1-25
DIPOLE 5000MHZ ANTENNA	SPEAG	D5GHzV2	1095	N/A
DUMMY PROBE	SPEAG	DP_2	SPDP2001AA	N/A
SAM PHANTOM	SPEAG	SAM29	SN 41_05	N/A
PHANTON WOOD TABLE	SPEAG	1609	QD000P40CD	N/A
ROBOT	SPEAG	TX60	F10/5E6AA1/A101	N/A
ROBOT KRC	SPEAG	CS8C	F10/5E6AA1/C101	N/A
LIQUID CALIBRATION KIT	ANTENNESSA	41/05 OCP9	00425167	2012-1-11
DAE	SD000D04BJ	DEA4	1245	N/A

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14. FACILITIES

All measurement facilities used to collect the measurement data are located at

☒ No.10, Weiye Rd., Innovation Park, Eco & Tec. Development Part, Kunshan City, Jiangsu Province, China.

15. REFERENCES

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16.   ATTACHMENTS

Exhibit	Content
1	System Performance Check Plots
2	SAR Test Plots
3	Probe calibration report EX3DV4 SN3755
4	Dipole calibration report D835V2 SN:4d114
5	Dipole calibration report D1900V2-SN:5d136

END OF REPORT