JQA File No. : KL80100557
Issue Date : April 8, 2011

TEST REPORT (SAR EVALUATION)

APPLICANT	:	Sharp Corporation, Communication Systems Group
ADDRESS	:	2-13-1, Iida, Hachihonmatsu, Higashi-Hiroshima City, Hiroshima, 739-0192, Japan
PRODUCTS	:	Cellular Phone
MODEL NO.	:	SH-11C
SERIAL NO.	:	004401113275313
FCC ID	:	APYHRO00146
TEST STANDARD	:	FCC/OET Bulletin 65 Supplement C (Edition 01-01)
TESTING LOCATION	:	Japan Quality Assurance Organization KITA-KANSAI Testing Center 1-7-7, Ishimaru, Minoh-shi, Osaka 562-0027, Japan
TEST RESULTS	:	Passed
DATE OF TEST	:	March 31, 2011 ~ April 1, 2011

This report must not used by the client to claim product endorsement by NVLAP or NIST or any agency of the U.S. Government.

NVLAP LAB CODE 200191-0

Kousei Shibata
Manager
Japan Quality Assurance Organization
KITA-KANSAI Testing Center
Testing Dept. EMC Division
1-7-7, Ishimaru, Minoh-shi, Osaka 562-0027, Japan

- The measurement values stated in Test Report was made with traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan, National Institute of Information and Communications Technology (NICT) of Japan , and Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zürich, Switzerland.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.

TABLE OF CONTENTS

Page

Documentation 3

1 Test Regulation 3
2 Test Location 3
3 Recognition of Test Laboratory 3
4 Description of the Equipment Under Test 4
5 Test Results 4
6 Measurement System Diagram 5
7 System Components 6
8 Measurement Process 9
9 Measurement Uncertainties 10
10 Equipment Under Test Modification 11
11 Responsible Party 11
12 Deviation from Standard 11
13 Summary 12
14 Test Arrangement 13
15 Procedures used to Establish Test Signal 15

Appendix A: Test Data 17

Appendix B: Test Instruments 22

Appendix C: Attachments 23

DEFINITIONS FOR ABBREVIATION AND SYMBOLS USED IN THIS TEST REPORT

EUT	: Equipment Under Test	**EMC**	: Electromagnetic Compatibility
AE	: Associated Equipment	**EMI**	: Electromagnetic Interference
N/A	: Not Applicable	**EMS**	: Electromagnetic Susceptibility
N/T	: Not Tested	**SAR**	: Specific Absorption Rate

☒ - indicates that the listed condition, standard or equipment is applicable for this report.
☐ - indicates that the listed condition, standard or equipment is not applicable for this report.

Documentation

1 Test Regulation

Applied Standard	:	FCC/OET Bulletin 65 Supplement C (Edition 01-01) Evaluating Compliance with FCC Guidelines for Human Exposure to Radio-frequency Electromagnetic Fields *Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions*
Test Procedure	:	FCC/OET Bulletin 65 Supplement C (Edition 01-01) IEEE Std.1528–2003 KDB Publication #941225 D01 v02 (October 2007)
Exposure Limits	:	ANSI/IEEE Std. C95.1, 1999 Edition

2 Test Location

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-chome, Minoh-shi, Osaka, 562-0027, Japan
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-cho, Kameoka-shi, Kyoto, 621-0126, Japan

3 Recognition of Test Laboratory

JQA KITA-KANSAI Testing Center Testing Department EMC Division is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies.

VLAC Code	:	VLAC-001-2 (Effective through : March 30, 2012)
NVLAP Lab Code	:	200191-0 (Effective through : June 30, 2011)
BSMI Recognition No.	:	SL2-IS-E-6006, SL2-IN-E-6006, SL2-AI-E-6006 (Effective through : September 14, 2013)
VCCI Registration No.	:	R-008, C-006, C-007, C-1674, C-2143, C-3685, T-1418, T-1419, T-1819, T-1820, T-1821, G-172, G-173 (Effective through : March 30, 2012)
IC Registration No.	:	2079E-2 (Effective through : January 25, 2014)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Effective through : February 22, 2012)

4 Description of the Equipment Under Test

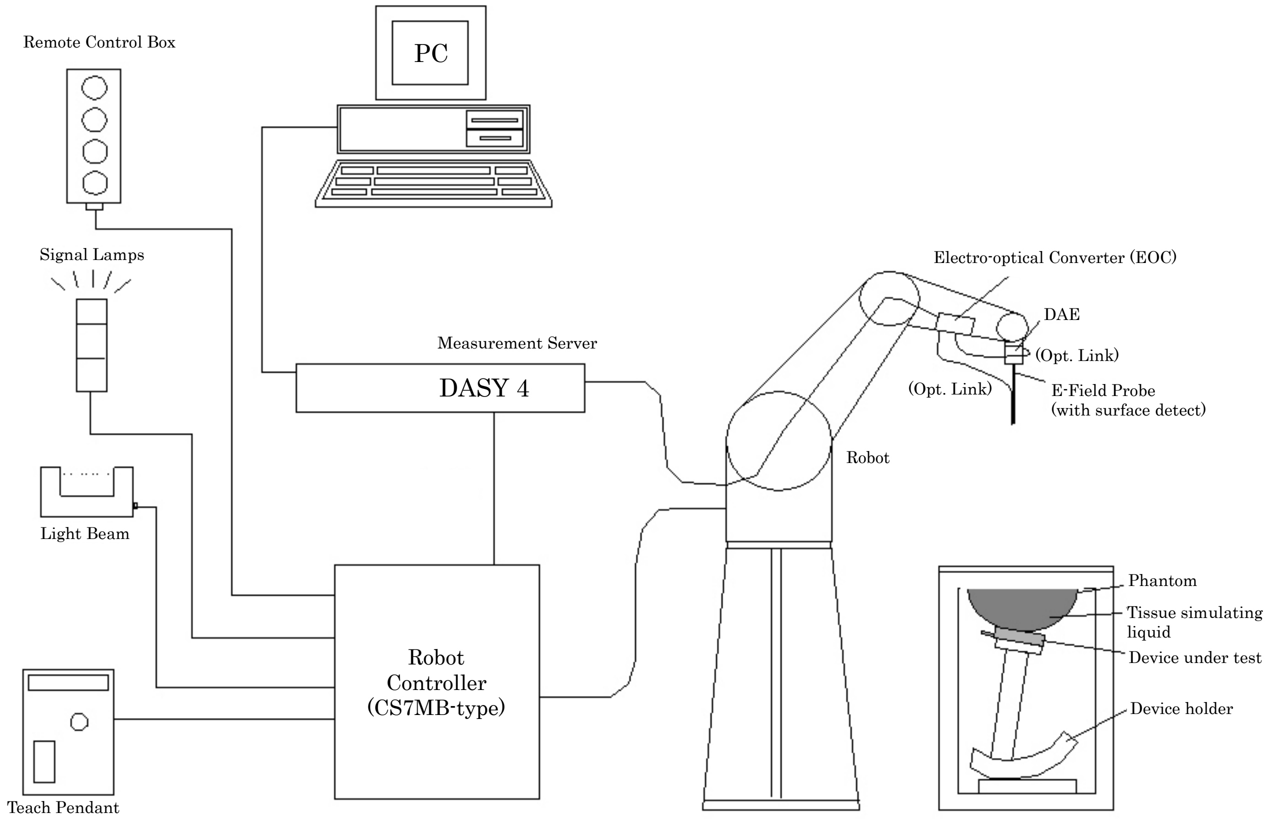
1. Manufacturer : Sharp Corporation, Communication Systems Group
   2-13-1, Iida, Hachihonmatsu, Higashi-Hiroshima City, Hiroshima, 739-0192, Japan
2. Products : Cellular Phone
3. Model No. : SH-11C
4. Serial No. : 004401113275313
5. Product Type : Pre-production
6. Date of Manufacture : March, 2011
7. Transmitting Frequency : 826.40 MHz – 846.60 MHz (WCDMA Band V)
8. Battery Option : Lithium-ion Battery Pack SH23 (800mAh)
9. Power Rating : 4.0VDC
10. EUT Grounding : None
11. Device Category : Portable Device (§2.1093)
12. Exposure Category : General Population/Uncontrolled Exposure
13. FCC Rule Part(s) : 22(H)
14. EUT Authorization : Certification
15. Received Date of EUT : March 31, 2011

5 Test Results

Mode	CH	Freq. (MHz)	Test Position	1g SAR (mW/g)	Results
WCDMA Band V 12.2kbps RMC	4132	826.4	Left Head Touched	0.918	PASSED
	4132	826.4	Body Rear w/ 1.5cm	0.629	PASSED

6 Measurement System Diagram

These measurements are performed using the DASY4 automated dosimetric assessment system (manufactured by Schmid & Partner Engineering AG (SPEAG) in Zürich, Switzerland). It consists of high precision robotics system, cell controller system, DASY4 measurement server, personal computer with DASY4 software, data acquisition electronic (DAE) circuit, the Electro-optical converter (EOC), near-field probe, and the twin SAM phantom containing the equivalent tissue. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF).
The Robot is connected to the cell controller to allow software manipulation of the robot. The DAE is connected to the EOC. The DAE performs the signal amplification, signal multiplexing, A/D conversion, offset measurements, mechanical surface detection, collision detection, etc. The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the DASY4 measurement server.



7 System Components

7.1 Probe Specification

Construction : Symmetrical design with triangular core
Built-in optical fiber for surface detection system
Built-in shielding against static changes

Calibration : In air form 10 MHz to 2.5 GHz
In head tissue simulating liquid (HSL) and
muscle tissue simulating liquid
835 MHz (accuracy ± 11.0%; k=2)
900 MHz (accuracy ± 11.0%; k=2)
1450 MHz (accuracy ± 11.0%; k=2)
1750 MHz (accuracy ± 11.0%; k=2)
1900 MHz (accuracy ± 11.0%; k=2)
1950 MHz (accuracy ± 11.0%; k=2)
2450 MHz (accuracy ± 11.0%; k=2)

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

Directivity : ± 0.2 dB in HSL (rotation around probe axis)
± 0.4 dB in HSL (rotation normal probe axis)

Dynamic Range : 5 µW/g to >100 mW/g; Linearity: ± 0.2 dB

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

Dimensions : Overall length 337 mm
Tip length 10 mm
Body diameter 10 mm
Tip diameter 6.8 mm
Distance from probe tip to dipole centers 2.7 mm

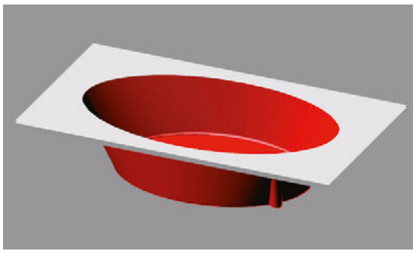
7.2 Twin SAM Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-2003, 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 teaching three points with the robot.

Shell Thickness	:	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	:	Volume Approx. 25 liters
Dimensions	:	810 × 1000 × 500 mm (H × L × W)

7.3 ELI4 Flat Phantom

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 DASY4.5 and higher and is compatible with all SPEAG dosimetric probes and dipoles.

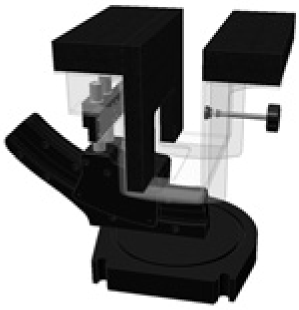


Shell Thickness	:	2 ± 0.2 mm (sagging: <1%)
Filling Volume	:	Volume Approx. 30 liters
Dimensions	:	Major ellipse axis : 600 mm
		Minor axis : 400 mm
Compatibilities	:	Standard: IEC 62209 Part II (Draft 0.9 and higher)
		Software release: DASY 4.5 or higher
		SPEAG standard phantom table
		all SPEAG dosimetric probes and dipoles

7.4 Mounting Device for Transmitters

In combination with the Twin SAM Phantom V4.0/V4.0c or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat point).

7.5 Laptop Extensions Kit for Mounting Device



Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.) It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI4 and SAM v6.0 Phantoms.

7.6 Typical Composition of Ingredients for Liquid Tissue

Ingredients (% by weight)	Frequency (MHz)					
	835		1900		2450	
	Head	Body	Head	Body	Head	Body
Water	41.45	52.40	54.90	40.40	62.70	73.20
Salt (NaCl)	1.45	1.40	0.18	0.50	0.50	0.04
Sugar	56.00	45.00	0.00	58.00	0.00	0.00
HEC	1.00	1.00	0.00	1.00	0.00	0.00
Bactericide	0.10	0.10	0.00	0.10	0.00	0.00
Triton X-100	0.00	0.00	0.00	0.00	36.80	0.00
DGBE	0.00	0.00	44.92	0.00	0.00	26.70

Salt : 99+% Pure Sodium Chloride
Sugar : 98+% Pure Sucrose
Water : De-ionized, 16 MΩ+ resistivity
HEC : Hydroxyethyl Cellulose
DGBE : 99+% Di (ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
Triton X-100 (ultra pure) : Polyethylene glycol mono [4-(1,1,3,3-tetramethylbuthyl)phenyl]ether

The composition of ingredients is according to FCC/OET Bulletin 65 Supplement C.

8 Measurement Process

Area Scan for Maximum Search :

The SAR distribution at the exposed side of the head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15 mm × 15 mm. The evaluation on the measured area scan gives the interpolated maximum (hot spot) of the measured area.

Cube Scan for Spatial Peak SAR Evaluation :

The 1g and 10g peak evaluations were available for the predefined cube 5×5×7 scans. The grid spacing was 8 mm × 8 mm × 5 mm. The first procedure is an extrapolation to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume in a 1mm grid (35000 points). In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is moved around until the highest averaged SAR is found. This last procedure is repeated for a 10g cube. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

Extrapolation :

The extrapolation is based on a least square algorithm. Through the points in the first 3 cm in all z-axis, polynomials of order four are calculated. This polynomial is then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from one another.

Interpolation :

The maximum interpolated value is searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) are computed by the 3D spline algorithm. The 3D spline is composed of three one-dimensional splines with the “Not a knot” –condition (x, y and z –directions). The volume is integrated with the trapezoidal algorithm.

9 Measurement Uncertainties

Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c_i (1g)	c_i (10g)	Std. Unc. (± %)		v_i
						1g	10g	
Measurement System								
Probe calibration	5.9	N	1	1	1	5.9	5.9	∞
Axial isotropy	4.7	R	√3	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	√3	0.7	0.7	3.9	3.9	∞
Boundary effect	1.0	R	√3	1	1	0.6	0.6	∞
Linearity	4.7	R	√3	1	1	2.7	2.7	∞
System detection limits	1.0	R	√3	1	1	0.6	0.6	∞
Readout electronics	0.4	N	1	1	1	0.4	0.4	∞
Response time	0.0	R	√3	1	1	0.0	0.0	∞
Integration time	2.6	R	√3	1	1	1.5	1.5	∞
RF ambient conditions – noise	3.0	R	√3	1	1	1.7	1.7	∞
RF ambient conditions – reflections	3.0	R	√3	1	1	1.7	1.7	∞
Probe positioner mechanical tolerance	0.4	R	√3	1	1	0.2	0.2	∞
Probe positioning with respect to phantom shell	2.9	R	√3	1	1	1.7	1.7	∞
Extrapolation, interpolation and integration algorithms for max. SAR evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Test Sample Related								
Test sample positioning	3.4	N	1	1	1	3.4	3.4	23
Device holder uncertainty	2.9	N	1	1	1	2.9	2.9	5
Output power variation – SAR drift measurement	5.0	R	√3	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom uncertainty	4.0	R	√3	1	1	2.3	2.3	∞
Liquid conductivity – deviation from target	5.0	R	√3	0.64	0.43	1.8	1.2	∞
Liquid Conductivity – measurement uncertainty	3.2	N	1	0.64	0.43	2.0	1.4	5
Liquid Permittivity – deviation from target	5.0	R	√3	0.6	0.49	1.7	1.4	∞
Liquid Permittivity – measurement uncertainty	3.0	N	1	0.6	0.49	1.8	1.5	5
Combined Standard Uncertainty		RSS				11.0	10.7	
Expanded Uncertainty (95% Confidence Interval)		k=2				**22.0**	**21.4**	

NOTES
1. Tol. : tolerance in influence quantity
2. Prob. Dist. : probability distributions
3. N, R : normal, rectanglar
4. Div. : divisor used to obtain standard uncertainty
5. c_i : sensitivity coefficient
6. Std. Unc. : standard uncertainty
7. Measurement uncertainties are according to IEEE Std. 1528 and IEC 62209-1.

10 Equipment Under Test Modification

☒ - No modifications were conducted by JQA to achieve compliance to the limitations.
☐ - To achieve compliance to the limitations, the following changes were made by JQA during the compliance test.

The modifications will be implemented in all production models of this equipment.

Applicant : Not Applicable
Date : Not Applicable
Typed Name : Not Applicable
Position : Not Applicable

Signatory : Not Applicable

11 Responsible Party

Responsible Party of Test Item (Product)

Responsible Party :

Contact Person :

Signatory

12 Deviation from Standard

☒ - No deviations from the standard described in clause 1.
☐ - The following deviations were employed from the standard described in clause 1.

13 Summary

General Remarks :

The EUT was tested according to the requirements of the following standard.
FCC/OET Bulletin 65 Supplement C (Edition 01-01)
The test configuration is shown in clause 14 to 15.
The conclusion for the test items of which are required by the applied regulation is indicated under the test results.
Determining compliance with the limits in this report was based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Test Results :

The "as received" sample;

☒ - fulfill the test requirements of the regulation mentioned on clause 1.
☐ - doesn't fulfill the test requirements of the regulation mentioned on clause 1.

Reviewed by:

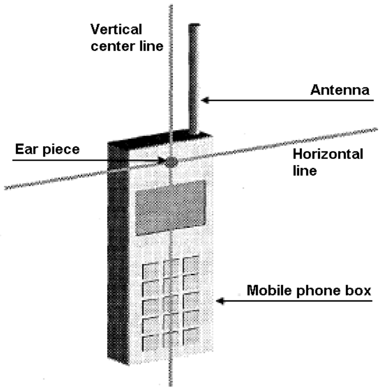
Shigeru Kinoshita
Deputy Manager
Testing Dept. EMC Div.
JQA KITA-KANSAI Testing Center

Tested by:

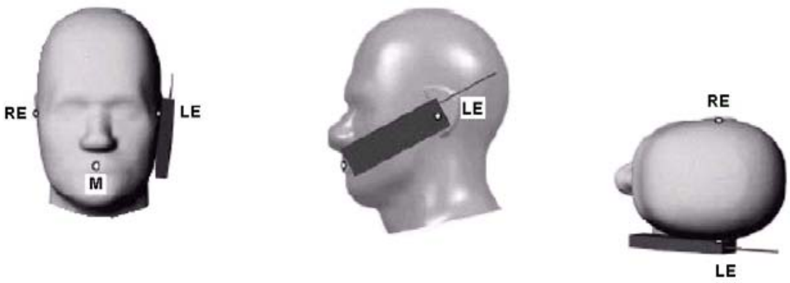
Yasuhisa Sakai
Deputy Manager
Testing Dept. EMC Div.
JQA KITA-KANSAI Testing Center

14 Test Arrangement

14.1 Cheek-Touch Position

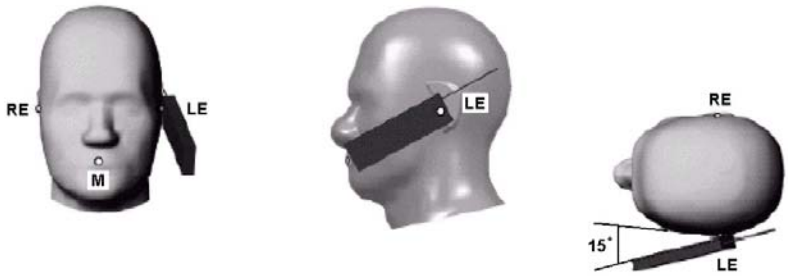


1. Position the device with the vertical center line of the body of the device and the horizontal line crossing the center of the ear piece in a plane parallel to the sagittal plane of the phantom.
2. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the center of the ear piece with the line RE-LE.
3. Translate the mobile phone box towards the phantom with the ear piece aligned with the line RE-LE until the phone touches the ear.
4. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



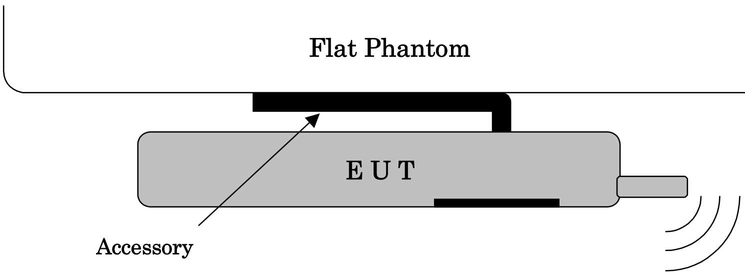
14.2 Ear-Tilt Position

1. Position the device in the "Cheek/Touch Position".
2. While maintaining the device in the reference plane and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.



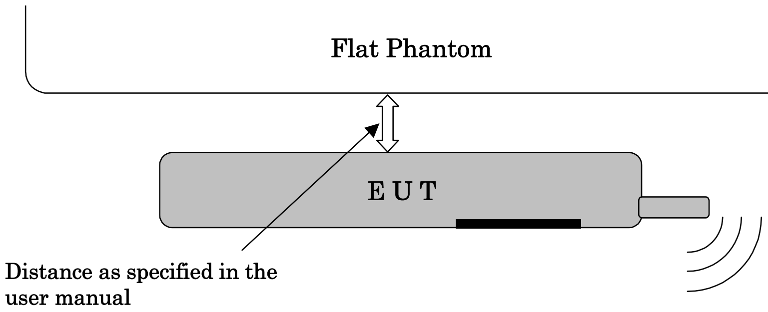
14.3 Body-worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. Both the physical spacing to the body of the user as dictated by the accessory and the materials used in an accessory affect the SAR produced by the transmitting device. For purpose of determining test requirements, accessories may be divided into two categories: those that do not contain metallic components and those that do.



When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.



Lap-held device (e.g. laptop computer)
SAR is tested for a lap-held position with the bottom of the computer in direct contact against a flat phantom.

15 Procedures used to Establish Test Signal

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

To setup the desire channel frequency and the maximum output power, a Radio Communication Tester “Anritsu, MT8815B” was used to program the EUT.

System Configuration : W-CDMA (MX882000C 10.23 #002)

3GPP Release 99 WCDMA Settings

Settings	Release 99	
Loopback Mode	Mode 1	OFF
Channel Coding	12.2k / 64k / 144k / 384kbps RMC	Voice AMR
TPC Bit Pattern	All 1	
Power Tolerance (dB)	+1.7/-3.7	

3GPP Release 5 HSDPA Settings

Settings	Release 5 HSDPA			
Sub-test	1	2	3	4
Loopback Mode	Mode 1			
Channel Coding	FRC with H-Set 1 (QPSK)			
TPC Algorithm	2			
TPC Bit Pattern	All 1			
Beta C	2	11	15	15
Beta D	15	15	8	4
MPR (dB)	0	0	0.5	0.5
Power Tolerance (dB)	+1.7/-3.7	+1.7/-3.7	+2.7/-3.7	+3.7/-3.7

Conducted power measurement results

Mode		Conducted Power (dBm)		
		4132 ch (826.40 MHz)	4182 ch (836.40 MHz)	4233 ch (846.60 MHz)
12.2 kbps RMC		**22.64**	**22.65**	**23.04**
64 kbps RMC		22.64	22.65	23.04
144 kbps RMC		22.62	22.63	23.04
384 kbps RMC		22.63	22.63	23.03
Voice AMR		22.64	22.63	23.02
R5 HSDPA	Sub-test 1	22.63	22.65	23.02
	Sub-test 2	22.33	22.35	22.65
	Sub-test 3	21.34	21.32	21.71
	Sub-test 4	20.38	20.37	20.79

SAR in voice and data modes is measured using a 12.2 kbps RMC. SAR in voice AMR configurations and for other spreading codes are not required when the maximum average output of each channel is less than ¼ dB higher than that measured in 12.2 kbps RMC.

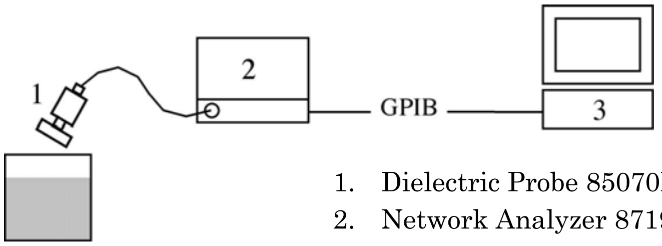
Body SAR for HSDPA is not required when the maximum average output with HSDPA active is less than ¼ dB higher than that measured without HSPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is ≤ 75% of the SAR limit.

Maximum conducted power was measured by replacing the antenna with an adapter for conductive measurements, before and after the SAR measurements was done.

Appendix A: Test Data

A.1 Tissue Verification

The tissue dielectric parameters of the tissue medium at the middle of a device transmission band should be within ±5% of the parameters specified at that target frequency. It is verified by using the dielectric probe and the network analyzer.



1. Dielectric Probe 85070D
2. Network Analyzer 8719ET
3. Personal Computer

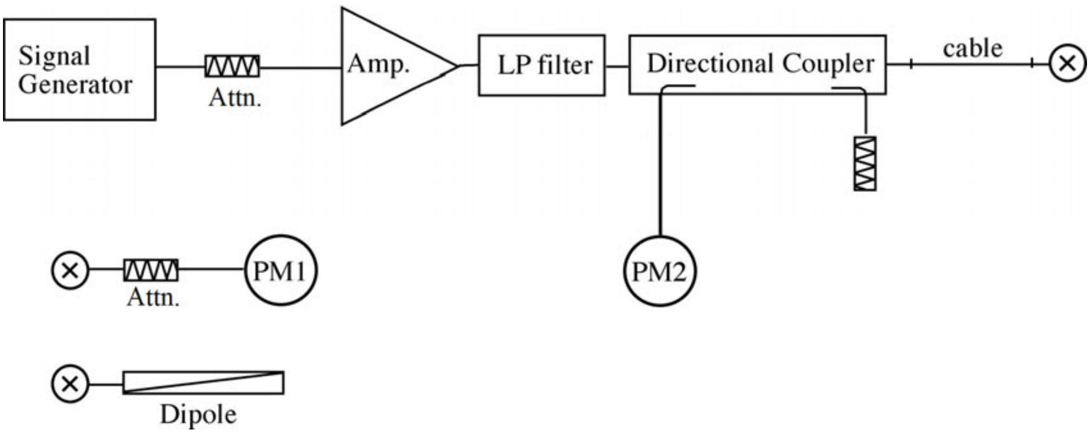
Tissue Verification Results :

Liquid	Freq. [MHz]	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]
Ambient Conditions : 22°C 31%					Date : March 31, 2011		
Head	835	22.0	Permittivity	41.5	40.64	-2.07	± 5
			Conductivity	0.90	0.900	+0.00	± 5
Ambient Conditions : 22°C 27%					Date : April 1, 2011		
Body	835	22.0	Permittivity	55.2	53.97	-2.23	± 5
			Conductivity	0.97	0.946	-2.47	± 5

A.2 System Validation

The power meter PM1 (including Attenuator) measures the forward power at the location of the validation dipole connector. The signal generator is adjusted for 250 mW at the dipole connector and the power meter PM2 is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter PM2.

The dipole antenna is matched to be used near flat phantom filled with tissue simulating solution. A specific distance holder is used in the positioning of the antenna to ensure correct spacing between the phantom and the dipole.



System Validation Results :

System Validation Dipole : D835V2, S/N: 4d081 Ambient Conditions : 22°C 31% Depth of Liquid : 15.0 cm Date : March 31, 2011								
Liquid	Freq. [MHz]	Temp. [°C]	Measured SAR (mW/g)		Normalized to 1 W	Target	Deviation [%]	Limit [%]
Head	835	22.0	1g	2.40	9.60	9.67	-0.72	± 10
			10g	1.57	6.28	6.29	-0.16	± 10
Ambient Conditions : 22°C 27% Depth of Liquid : 15.0 cm Date : April 1, 2011								
Body	835	22.0	1g	2.45	9.80	10.0	-2.00	± 10
			10g	1.62	6.48	6.64	-2.41	± 10

NOTES :
1. The results were normalized to 1 W forward power.
2. The target SAR values of SPEAG validation dipoles are given in the calibration data.
3. Please refer to attachment for the result presentation in plot format.

A.3 SAR Measurement Data

A.3.1 Left Head

CONFIDENTIAL

Cheek/Touch Position **Ear/Tilt Position**

R99 12.2kbps RMC (Duty Cycle: 100 %, Crest Factor: 1) Date : March 31, 2011

Test Position	Ch No.	Frequency [MHz]	Tx Power [dBm]	Power Drift [dB]	Limit [mW/g]	1g SAR [mW/g]	Tissue Temp. [°C]
Cheek/Touch	4132	826.40	22.64	-0.036	1.6	0.918	22.0
	4182	836.40	22.65	-0.026		0.900	22.0
	4233	846.60	23.04	-0.034		0.845	22.0
Ear/Tilt	4182	836.40	22.65	-0.003	1.6	0.357	22.0

NOTES :
1. Depth of Liquid : 15.0 cm
2. Transmitter power was measured at the antenna-conducted terminal.
3. Please refer to attachment for the result presentation in plot format.

A.3.2 Right Head

CONFIDENTIAL

Cheek/Touch Position **Ear/Tilt Position**

R99 12.2kbps RMC (Duty Cycle: 100 %, Crest Factor: 1) Date : March 31, 2011

Test Position	Ch No.	Frequency [MHz]	Tx Power [dBm]	Power Drift [dB]	Limit [mW/g]	1g SAR [mW/g]	Tissue Temp. [°C]
Cheek/Touch	4182	836.40	22.65	-0.053	1.6	0.722	22.0
Ear/Tilt	4182	836.40	22.65	-0.057	1.6	0.315	22.0

NOTES :
1. Depth of Liquid : 15.0 cm
2. Transmitter power was measured at the antenna-conducted terminal.
3. Please refer to attachment for the result presentation in plot format.

A.3.3 Body-worn Position

CONFIDENTIAL

Rear Position **Front Position**

R99 12.2kbps RMC (Duty Cycle: 100 %, Crest Factor: 1) Date : April 1, 2011

Test Position	Ch No.	Frequency [MHz]	Tx Power [dBm]	Power Drift [dB]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]
Rear	4132	826.40	22.64	-0.015	1.6	0.629	22.0
	4182	836.40	22.65	-0.038		0.555	22.0
	4233	846.60	23.04	-0.026		0.586	22.0
Front	4182	836.40	22.65	-0.005	1.6	0.236	22.0

NOTES :
1. Depth of Liquid : 15.0 cm
2. Transmitter power was measured at the antenna-conducted terminal.
3. The earphone wire connected to the EUT to simulate hand-free operation in a body-worn configuration.
4. Please refer to attachment for the result presentation in plot format.

Appendix B: Test Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
E-Field Probe	ET3DV6	SPEAG	S-2	2010/8	1 Year
DAE	DAE3 V1	SPEAG	S-3	2010/11	1 Year
Robot	RX60L	SPEAG	S-7	N/A	N/A
Probe Alignment Unit	LB1RX60L	SPEAG	S-13	N/A	N/A
Network Analyzer	8719ET	Agilent	B-53	2010/10	1 Year
Dielectric Probe Kit	85070D	Agilent	B-54	N/A	N/A
835MHz Dipole	D835V2	SPEAG	S-23	2010/8	1 Year
Signal Generator	MG3681A	Anritsu	B-3	2010/10	1 Year
RF Amplifier	A0840-3833-R	R&K	A-34	N/A	N/A
Low Pass Filter	LSM1000-4BA	LARK	D-90	2010/11	1 Year
Radio Communication Analyzer	MT8815B	Anritsu	B-69	2010/10	1 Year
Power Meter	E4417A	Agilent	B-51	2010/6	1 Year
Power Sensor	E9300B	Agilent	B-32	2010/6	1 Year
Power Sensor	E9323A	Agilent	B-59	2010/6	1 Year
Attenuator	2-20	Weinschel	D-36	2010/9	1 Year

Appendix C: Attachments

Exhibit	Contents	No. of page(s)
1	System Validation Plots	2
2	SAR Test Plots	12
3	Dosimetric E-Field Probe – ET3DV6, S/N: 1679	11
4	System Validation Dipole – D835V2, S/N: 4d081	9