JQA File No. : KL80120405

Issue Date : October 18, 2012

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-02E
Serial No.	:	004401114215334
FCC ID	:	APYHRO00180
Test Standard	:	FCC/OET Bulletin 65 Supplement C (Edition 01-01)
Test Results	:	**Passed**
Date of Test	:	October 5 ~ 17, 2012

VLAC Lab Accreditation VLAC-001-2

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Japan Quality Assurance Organization
KITA-KANSAI Testing Center
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- 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.
- VLAC does not approve, certify or warrant the product by this test report.

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1 Description of the Device Under Test (DUT)

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-02E
4.	Serial No.	:	004401114215334
5.	Product Type	:	Pre-production
6.	Date of Manufacture	:	September, 2012
7.	Transmitting Frequency	:	826.4 MHz – 846.6 MHz (WCDMA Band V) 824.2 MHz – 848.8 MHz (GSM 850) 1850.2 MHz – 1909.8 MHz (PCS 1900) 2412 MHz – 2462 MHz (WLAN 802.11b/g/n) 5150 MHz – 5250 MHz (WLAN 802.11a/n, W52) 5250 MHz – 5350 MHz (WLAN 802.11a/n, W53) 5500 MHz – 5700 MHz (WLAN 802.11a/n, W56) 2402 MHz – 2480 MHz (Bluetooth)
8.	Battery Option	:	Lithium-ion Battery Pack (2320mAh)
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), 24(E), 15.247, 15.407
14.	EUT Authorization	:	Certification
15.	Received Date of DUT	:	October 3, 2012

2 Summary of Test Results

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

Band	CH	Freq. (MHz)	Test Configuration		1g SAR (mW/g)	Results
WCDMA Band V 12.2kbps RMC	4182	836.4	Head	Left Touched	**0.293**	**PASSED**
	4233	846.6	Body	Rear Side	**0.515**	**PASSED**
GSM 850 GPRS 4 slots	189	836.4	Head	Left Touched	**0.259**	**PASSED**
	251	848.8	Body	Rear Side	**0.535**	**PASSED**
PCS 1900 GPRS 4 slots	810	1909.8	Head	Right Touched	**0.310**	**PASSED**
	810	1909.8	Body	Rear Side	**0.593**	**PASSED**
WLAN 2.4 GHz 802.11b 1 Mbps	11	2462	Head	Right Touched	**0.051**	**PASSED**
	11	2462	Body	Rear Side	**0.099**	**PASSED**
WLAN 5.2 GHz 802.11a 6 Mbps	36	5180	Head	Right Touched	**0.057**	**PASSED**
	36	5180	Body	Rear Side	**0.167**	**PASSED**
WLAN 5.3 GHz 802.11a 6 Mbps	52	5260	Head	Right Touched	**0.057**	**PASSED**
	64	5320	Body	Rear Side	**0.193**	**PASSED**
WLAN 5.6 GHz 802.11a 6 Mbps	136	5680	Head	Right Touched	**0.107**	**PASSED**
	136	5680	Body	Rear Side	**0.384**	**PASSED**

In the approval of 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.
- No deviations were employed from the applied standard.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by:

Shigeru Kinoshita
Deputy Manager
JQA KITA-KANSAI Testing Center
SAITO EMC Branch

Tested by:

Yasuhisa Sakai
Deputy Manager
JQA KITA-KANSAI Testing Center
SAITO EMC Branch

3 Test Procedure

The tests documented in this report were performed in accordance with FCC/OET Bulletin 65 Supplement C (Edition 01-01), IEEE Std.1528–2003 and the following KDB Procedures.

447498 D01 Mobile Portable RF Exposure V04
648474 D01 SAR Handsets Multi Xmiter and Ant v01r05
248227 D01 SAR meas for 802 11 a b g v01r02
941225 D01 SAR test for 3G devices v02
941225 D02 Guidance PBA for 3GPP R6 HSPA v02r01
941225 D03 SAR Test Reduction GSM GPRS EDGE v01
941225 D06 Hot Spot SAR v01
865664 SAR 3 to 6 GHz Rev

Exposure limits are specified in ANSI/IEEE Std. C95.1–1991.

4 Test Location

Japan Quality Assurance Organization (JQA)
KITA-KANSAI Testing Center
7-7, Ishimaru, 1-chome, Minoh-shi, Osaka, 562-0027, Japan
SAITO EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

5 Recognition of Test Laboratory

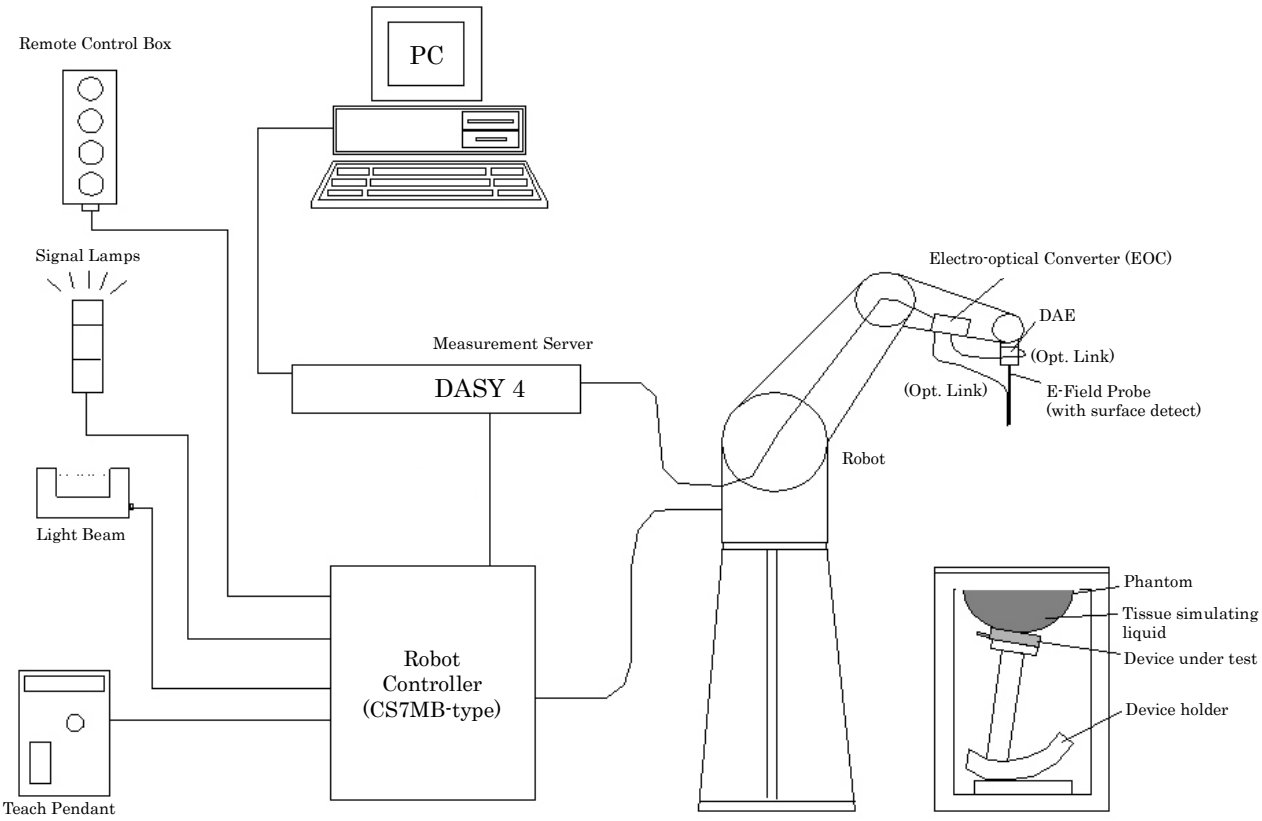
JQA KITA-KANSAI Testing Center SAITO EMC Branch is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility is registered by the following bodies.

VLAC Accreditation No.	:	VLAC-001-2 (Expiry date : March 30, 2014)
VCCI Registration No.	:	A-0002 (Expiry date : March 30, 2014)
BSMI Registration No.	:	SL2-IN-E-6006, SL2-A1-E-6006 (Expiry date : September 14, 2013)
IC Registration No.	:	2079E-3, 2079E-4 (Expiry date : July 20, 2014)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Expiry date : February 22, 2013)

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 ET3DV6

Construction : Symmetrical design with triangular core
Built-in optical fiber for surface detection system
Built-in shielding against static changes
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration : In air form 10 MHz to 2.3 GHz
In head tissue simulating liquid (HSL) and muscle tissue simulating liquid
835 MHz (accuracy ± 12.0%; k=2)
900 MHz (accuracy ± 12.0%; k=2)
1450 MHz (accuracy ± 12.0%; k=2)
1750 MHz (accuracy ± 12.0%; k=2)
1900 MHz (accuracy ± 12.0%; k=2)
1950 MHz (accuracy ± 12.0%; k=2)

Frequency : 10 MHz to 2.3 GHz
Linearity: ± 0.2 dB (30 MHz to 2.3 GHz)

Directivity : ± 0.2 dB in HSL (rotation around probe axis)
± 0.4 dB in HSL (rotation normal to 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 16 mm
Body diameter 12 mm
Tip diameter 6.8 mm
Distance from probe tip to dipole centers 2.7 mm

7.2 Probe Specification EX3DV4

Construction : Symmetrical design with triangular core
Built-in shielding against static changes
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration : In air form 10 MHz to 6 GHz
In head tissue simulating liquid (HSL) and muscle tissue simulating liquid
2450 MHz (accuracy ± 12.0%; k=2)
2600 MHz (accuracy ± 12.0%; k=2)
5200 MHz (accuracy ± 13.1%; k=2)
5300 MHz (accuracy ± 13.1%; k=2)
5500 MHz (accuracy ± 13.1%; k=2)
5600 MHz (accuracy ± 13.1%; k=2)
5800 MHz (accuracy ± 13.1%; k=2)

Frequency : 10 MHz to 6 GHz
Linearity: ± 0.2 dB (30 MHz to 6 GHz)

Directivity : ± 0.3 dB in HSL (rotation around probe axis)
± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range : 10 µW/g to >100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)

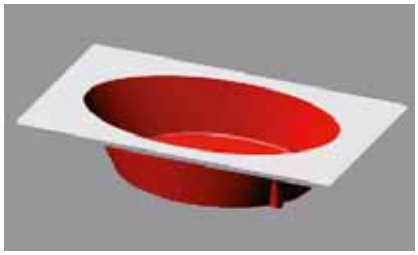
Dimensions : Overall length 337 mm
Tip length 20 mm
Body diameter 12 mm
Tip diameter 2.5 mm
Distance from probe tip to dipole centers 1 mm

7.3 Twin SAM Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. 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)

7.4 ELI4 Flat Phantom



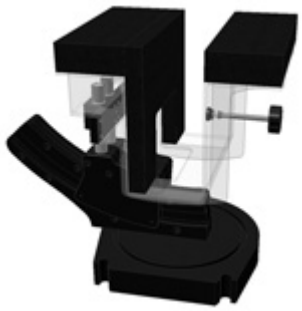
Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard 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 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

7.5 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).

7.6 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.

7.7 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

9.1 300 MHz to 3 GHz

Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c_i (1g)	c_i (10g)	Std. Unc. (± %)		v_i
						1g	10g	
Measurement System								
Probe calibration	6.0	N	1	1	1	6.0	6.0	∞
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	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.8	R	√3	1	1	0.5	0.5	∞
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	10.8	
Expanded Uncertainty (95% Confidence Interval)		k=2				**22.1**	**21.5**	

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.

9.2 3 GHz to 6 GHz

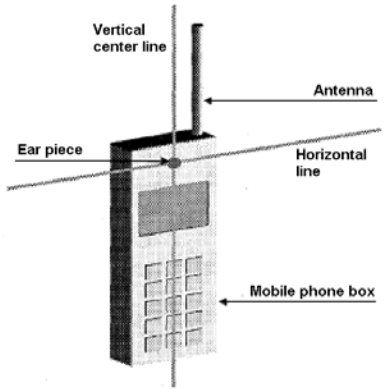
Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c_i (1g)	c_i (10g)	Std. Unc. (± %)		v_i
						1g	10g	
Measurement System								
Probe calibration	6.6	N	1	1	1	6.6	6.6	∞
Axial isotropy	4.7	R	√3	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	√3	0.7	0.7	3.9	3.9	∞
Boundary effect	2.0	R	√3	1	1	1.2	1.2	∞
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	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.8	R	√3	1	1	0.5	0.5	∞
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	0.8	R	√3	1	1	0.5	0.5	∞
Probe positioning with respect to phantom shell	9.9	R	√3	1	1	5.7	5.7	∞
Extrapolation, interpolation and integration algorithms for max. SAR evaluation	4.0	R	√3	1	1	2.3	2.3	∞
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				12.8	12.6	
Expanded Uncertainty (95% Confidence Interval)		k=2				**25.7**	**25.2**	

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 Test Arrangement

10.1 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.

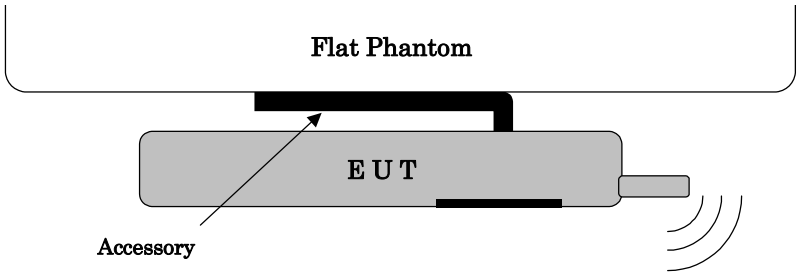


10.2 Ear-Tilt Position

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.

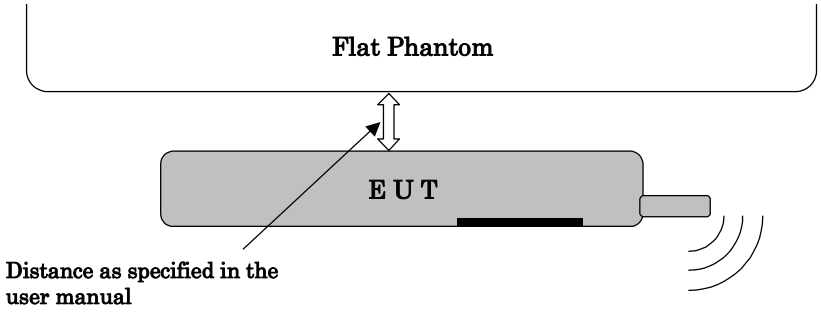
10.3 Body-worn Configuration

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.

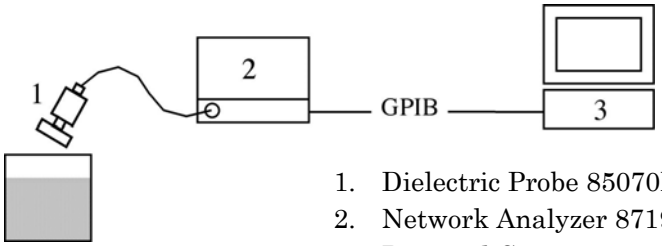
Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. 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.

11 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 :

Ambient Conditions : 23°C 56%						Date : October 5, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]
Head	835	23.0	Permittivity	41.5	41.76	+0.63	± 5
			Conductivity	0.90	0.900	+0.00	± 5
Ambient Conditions : 23°C 55%						Date : October 6, 2012	
Body	835	23.0	Permittivity	55.2	55.42	+0.40	± 5
			Conductivity	0.97	0.968	-0.21	± 5
Ambient Conditions : 23°C 56%						Date : October 7, 2012	
Head	1900	23.0	Permittivity	40.0	40.33	+0.83	± 5
			Conductivity	1.40	1.405	+0.36	± 5
Ambient Conditions : 23°C 53%						Date : October 8, 2012	
Body	1900	23.0	Permittivity	53.3	53.00	-0.56	± 5
			Conductivity	1.52	1.557	+2.43	± 5
Ambient Conditions : 23°C 50%						Date : October 9, 2012	
Head	2450	23.0	Permittivity	39.2	38.79	-1.05	± 5
			Conductivity	1.80	1.810	+0.56	± 5
Ambient Conditions : 23°C 49%						Date : October 10, 2012	
Body	2450	23.0	Permittivity	52.7	52.26	-0.83	± 5
			Conductivity	1.95	1.948	-0.10	± 5

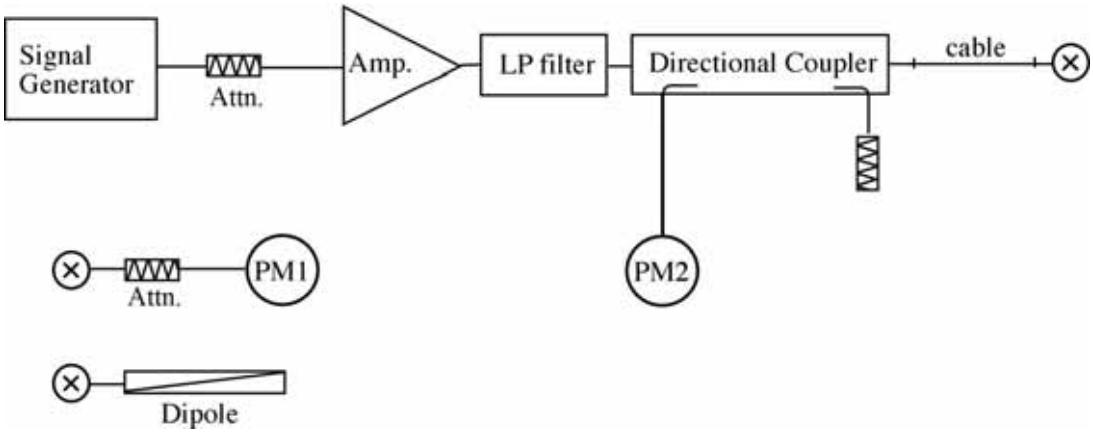
Tissue Verification Results (continued):

Ambient Conditions : 23°C 62%						Date : October 11, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]
Head	5200	23.0	Permittivity	36.0	36.12	+0.33	± 5
			Conductivity	4.66	4.627	-0.71	± 5
Ambient Conditions : 23°C 55%						Date : October 15, 2012	
Head	5500	23.0	Permittivity	35.6	35.59	-0.03	± 5
			Conductivity	4.96	4.965	+0.10	± 5
Ambient Conditions : 23°C 48%						Date : October 16, 2012	
Body	5200	23.0	Permittivity	49.0	48.58	-0.86	± 5
			Conductivity	5.30	5.316	+0.30	± 5
Ambient Conditions : 23°C 57%						Date : October 17, 2012	
Body	5500	23.0	Permittivity	48.6	48.65	+0.10	± 5
			Conductivity	5.65	5.748	+1.73	± 5

12 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.



12.1 System Validation Results for 835 MHz

System Validation Dipole : D835V2, S/N: 4d081								
Ambient Conditions : 23°C 56%			Depth of Liquid : 15.0 cm				Date : October 5, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Measured SAR (mW/g)		Normalized to 1 W	Target	Deviation [%]	Limit [%]
Head	835	23.0	1g	2.37	9.48	9.35	+1.39	± 10
			10g	1.56	6.24	6.12	+1.96	± 10
Ambient Conditions : 23°C 55%			Depth of Liquid : 15.0 cm				Date : October 6, 2012	
Body	835	23.0	1g	2.39	9.56	9.46	+1.06	± 10
			10g	1.59	6.36	6.25	+1.76	± 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.

12.2 System Validation Results for 1900 MHz

System Validation Dipole : D1900V2, S/N: 5d112								
Ambient Conditions : 23°C 56%			Depth of Liquid : 15.0 cm				Date : October 7, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Measured SAR (mW/g)		Normalized to 1 W	Target	Deviation [%]	Limit [%]
Head	1900	23.0	1g	9.92	39.68	39.6	+0.20	± 10
			10g	5.24	20.96	20.9	+0.29	± 10
Ambient Conditions : 23°C 53%			Depth of Liquid : 15.0 cm				Date : October 8, 2012	
Body	1900	23.0	1g	10.0	40.00	40.5	-1.23	± 10
			10g	5.32	21.28	21.5	-1.02	± 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.

12.3 System Validation Results for 2450 MHz

System Validation Dipole : D2450V2, S/N: 714								
Ambient Conditions : 23°C 50%			Depth of Liquid : 15.0 cm				Date : October 9, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Measured SAR (mW/g)		Normalized to 1 W	Target	Deviation [%]	Limit [%]
Head	2450	23.0	1g	13.3	53.20	54.1	-1.66	± 10
			10g	6.12	24.48	25.3	-3.24	± 10
Ambient Conditions : 23°C 49%			Depth of Liquid : 15.0 cm				Date : October 10, 2012	
Body	1900	23.0	1g	12.9	51.60	51.6	+0.00	± 10
			10g	6.05	24.20	24.2	+0.00	± 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.

12.4 System Validation Results for 5 GHz

System Validation Dipole : D5GHzV2, S/N: 1111								
Ambient Conditions : 23°C 62%			Depth of Liquid : 15.0 cm				Date : October 11, 2012	
Liquid	Freq. [MHz]	Temp. [°C]	Measured SAR (mW/g)		Normalized to 1 W	Target	Deviation [%]	Limit [%]
Head	5200	23.0	1g	19.8	79.20	77.7	+1.93	± 10
			10g	5.69	22.76	22.3	+2.06	± 10
Ambient Conditions : 23°C 55%			Depth of Liquid : 15.0 cm				Date : October 15, 2012	
Head	5500	23.0	1g	20.9	83.60	82.4	+1.46	± 10
			10g	5.92	23.68	23.4	+1.20	± 10
Ambient Conditions : 23°C 48%			Depth of Liquid : 15.0 cm				Date : October 16, 2012	
Body	5200	23.0	1g	18.9	75.60	75.3	+0.40	± 10
			10g	5.32	21.28	21.0	+1.33	± 10
Ambient Conditions : 23°C 57%			Depth of Liquid : 15.0 cm				Date : October 17, 2012	
Body	5500	23.0	1g	19.4	77.60	79.1	-1.90	± 10
			10g	5.41	21.64	22.0	-1.64	± 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.

13 RF Output Power Measurements

13.1 WCDMA Band V

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification.

To setup the desire channel frequency and the maximum output power, a Radio Communication Tester "Anritsu, MT8820C" was used to program the DUT.

System Configuration : W-CDMA (MX882000C 22.11 #014)

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	Fixed Reference Channel (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

3GPP Release 6 HSPA Settings

Settings	Release 6 HSPA				
Sub-test	1	2	3	4	5
Loopback Mode	Mode 1				
Channel Coding	E-DCH RF Test with TTI 10ms (QPSK)				
TPC Algorithm	2				1
TPC Bit Pattern	Inner Loop Power Control				All 1
Beta C	10	6	15	2	15
Beta D	15	15	9	15	0
Absolute Grant Value	20	12	15	17	12
MPR (dB)	0	2	1	2	0
Power Tolerance (dB)	+1.7/-6.7	+3.7/-5.2	+2.7/-5.2	+3.7/-5.2	+1.7/-3.7

Conducted power measurement results

Mode		Conducted Average Power (dBm)		
		4132 ch (826.4 MHz)	4182 ch (836.4 MHz)	4233 ch (846.6 MHz)
12.2 kbps RMC		**23.15**	**23.13**	**22.97**
64 kbps RMC		23.15	23.12	22.96
144 kbps RMC		23.15	23.12	22.96
384 kbps RMC		23.14	23.13	22.97
Voice AMR		23.15	23.13	22.97
R5 HSDPA	Sub-test 1	23.13	23.12	22.97
	Sub-test 2	23.13	23.11	22.96
	Sub-test 3	22.63	22.56	22.49
	Sub-test 4	22.63	22.58	22.49
R6 HSPA	Sub-test 1	22.77	22.75	22.68
	Sub-test 2	21.07	20.97	20.94
	Sub-test 3	21.96	21.90	21.88
	Sub-test 4	21.13	21.04	21.01
	Sub-test 5	23.13	23.12	22.96

Note(s):

1. KDB 941225 D01 – 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.
2. KDB 941225 D01 – Body SAR for HSPA (HSDPA/HSUPA) is not required when the maximum average output with HSPA 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.
3. KDB 941225 D01 – Head SAR for HSPA (VoIP applicable) is not required when the maximum average output with HSPA active is less than ¼ dB higher than that measured without HSPA using 12.2 kbps RMC.
4. KDB 941225 D02 – The maximum power reduction (MPR) on the order of 0, 2, 1, 2, 0 dB are expected for the subtests specified in R6 HSPA. Conducted power measurement results are set within 24 dBm +/- expected power tolerance.

13.2 GSM 850

To setup the desire channel frequency and the maximum output power, a Radio Communication Tester "Anritsu, MT8820C" was used to program the DUT.

System Configuration : GSM (MX882001C 22.11 #028)

Band Indicator : GSM 850
MS Power Level : PCL 5 (33 dBm)
GPRS Settings
Connection Type : Test Mode A
Multi Slot Class : 12 (4 down / 4 up / 5 sum)
Coding Scheme : CS1 (GMSK)

Conducted power measurement results

Mode		Conducted Power (dBm)		
		128 ch (824.2 MHz)	189 ch (836.4 MHz)	251 ch (848.8 MHz)
GSM	Burst Avg.	32.62	32.44	32.43
	Frame Avg.	23.59	23.41	23.40
GPRS (1 slot)	Burst Avg.	32.62	32.44	32.43
	Frame Avg.	23.59	23.41	23.40
GPRS (2 slot)	Burst Avg.	30.19	30.11	30.15
	Frame Avg.	24.17	24.09	24.13
GPRS (3 slot)	Burst Avg.	28.31	28.28	28.41
	Frame Avg.	24.05	24.02	24.15
GPRS (4 slot)	Burst Avg.	27.34	27.34	27.33
	Frame Avg.	**24.33**	**24.33**	**24.32**

Note(s):
KDB 941225 D03 – The worst-case configuration for SAR testing is determined to be as follows.
1. Body : GPRS mode with 4 time slots, based on the output power above
2. Head : Same mode as Body SAR testing (VoIP applicable using GPRS multi-slot)

13.3 PCS 1900

To setup the desire channel frequency and the maximum output power, a Radio Communication Tester "Anritsu, MT8820C" was used to program the DUT.

System Configuration : GSM (MX882001C 22.11 #028)

Band Indicator : PCS 1900
MS Power Level : PCL 0 (30 dBm)
GPRS Settings
Connection Type : Test Mode A
Multi Slot Class : 12 (4 down / 4 up / 5 sum)
Coding Scheme : CS1 (GMSK)

Conducted power measurement results

Mode		Conducted Power (dBm)		
		512 ch (1850.2 MHz)	661 ch (1880.0 MHz)	810 ch (1909.8 MHz)
GSM	Burst Avg.	29.38	29.33	29.29
	Frame Avg.	20.35	20.30	20.26
GPRS (1 slot)	Burst Avg.	29.38	29.33	29.29
	Frame Avg.	20.35	20.30	20.26
GPRS (2 slot)	Burst Avg.	27.39	27.23	27.24
	Frame Avg.	21.37	21.21	21.22
GPRS (3 slot)	Burst Avg.	25.83	25.87	25.77
	Frame Avg.	21.57	21.61	21.51
GPRS (4 slot)	Burst Avg.	24.91	24.92	24.97
	Frame Avg.	**21.90**	**21.91**	**21.96**

Note(s):
KDB 941225 D03 – The worst-case configuration for SAR testing is determined to be as follows.
1. Body : GPRS mode with 4 time slots, based on the output power above
2. Head : Same mode as Body SAR testing (VoIP applicable using GPRS multi-slot)

13.4 WLAN 2.4 GHz

To setup the desire channel frequency and the maximum output power, RF test mode prepared by the manufacturer was used to program the DUT.

Conducted power measurement results

Band	Mode	Channel	Frequency (MHz)	Average Power (dBm)
2.4 GHz	**802.11b 1 Mbps**	**1**	**2412**	**13.18**
		6	**2437**	**13.58**
		11	**2462**	**13.55**
	802.11g 6 Mbps	1	2412	12.38
		6	2437	12.65
		11	2462	12.60
	802.11n [HT20] 6.5 Mbps	1	2412	11.12
		6	2437	11.43
		11	2462	11.40

Note(s):
KDB 248227 D01 – SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding 802.11b channels.

13.5 WLAN 5 GHz

To setup the desire channel frequency and the maximum output power, RF test mode prepared by the manufacturer was used to program the DUT.

Conducted power measurement results

Band	Mode	Channel	Frequency (MHz)	Average Power (dBm)
5.2 GHz	**802.11a 6 Mbps**	**36**	**5180**	**11.23**
		40	5200	11.29
		44	5220	11.38
		48	**5240**	**11.36**
	802.11n [HT20] 6.5 Mbps	36	5180	11.22
		44	5220	11.07
		48	5240	11.22
	802.11n [HT40] 13.5 Mbps	38	5190	9.00
		46	5230	9.01
5.3 GHz	**802.11a 6 Mbps**	**52**	**5260**	**11.35**
		56	5280	11.33
		60	5300	11.32
		64	**5320**	**11.33**
	802.11n [HT20] 6.5 Mbps	52	5260	11.18
		60	5300	11.16
		64	5320	11.13
	802.11n [HT40] 13.5 Mbps	54	5270	8.95
		62	5310	8.94
5.6 GHz	**802.11a 6 Mbps**	100	5500	13.03
		104	**5520**	**13.02**
		108	5540	13.06
		112	5560	12.99
		116	**5580**	**12.99**
		132	5660	12.93
		136	**5680**	**12.88**
		140	5700	12.87
	802.11n [HT20] 6.5 Mbps	100	5500	12.03
		116	5580	12.05
		140	5700	11.88
	802.11n [HT40] 13.5 Mbps	102	5510	9.98
		118	5590	9.95
		134	5670	9.91

Note(s):
KDB 248227 D01 – SAR is not required for 802.11n channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding 802.11a channels.

13.6 Bluetooth

For the Bluetooth operation, the client supplied a special driving program to program the DUT to continually transmit the specified maximum power.

Modulation type	:	Frequency Hopping Spread Spectrum (FHSS)
Transmitting Frequency	:	2402 MHz (0 ch) – 2480 MHz (78 ch)
RF Output Power	:	Max. 2.5 mW (Class 2)

According to KDB 648474 D01, the output of Bluetooth transmitter is ≤ P_{ref} (12mW) and its antenna is > 2.5cm from other antennas, so the stand-alone SAR evaluation for Bluetooth is not required.
(P_{ref} = ½·60 / f $_{(GHz)}$ [mW])

14 SAR Measurements

14.1 WCDMA Band V

14.1.1 Head

R99 12.2kbps RMC – Duty Cycle 100%						Date : October 5, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	4132	826.4	23.15	1.6	**0.240**	23.0	
	4182	836.4	23.13		**0.292**	23.0	
	4182	836.4	23.13		**0.293**	23.0	2
	4233	846.6	22.97		**0.287**	23.0	
Left Tilted	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.150**	23.0	
	4233	846.6	22.97				1
Right Touched	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.241**	23.0	
	4233	846.6	22.97				1
Right Tilted	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.150**	23.0	
	4233	846.6	22.97				1

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.

14.1.2 Body w/ 1.0 cm (hotspot mode)

R99 12.2kbps RMC – Duty Cycle 100%						Date : October 6, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Top Edge	4132	826.4	23.15	1.6			4
	4182	836.4	23.13				4
	4233	846.6	22.97				4
Bottom Edge	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.114**	23.0	
	4233	846.6	22.97				1
Left Edge	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.337**	23.0	
	4233	846.6	22.97				1
Right Edge	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.213**	23.0	
	4233	846.6	22.97				1
Front Side	4132	826.4	23.15	1.6			1
	4182	836.4	23.13		**0.311**	23.0	
	4233	846.6	22.97				1
Rear Side	4132	826.4	23.15	1.6	**0.388**	23.0	
	4182	836.4	23.13		**0.449**	23.0	
	4233	846.6	22.97		**0.471**	23.0	
	4233	846.6	22.97		**0.483**	23.0	2
	4233	846.6	22.97		**0.515**	23.0	3

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.
3. With headset attached.
4. SAR is not required because the distance from the transmitting antenna to this surface (or edge) is greater than 2.5 cm (KDB 941225 D06 Hot Spot SAR).

14.2 GSM 850

14.2.1 Head

GPRS 4 slot (CS1) – Duty Cycle 48.0%						Date : October 5, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	128	824.2	27.34	1.6	**0.233**	23.0	
	189	836.4	27.34		**0.259**	23.0	
	189	836.4	27.34		**0.254**	23.0	2
	251	848.8	27.33		**0.257**	23.0	
Left Tilted	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.125**	23.0	
	251	848.8	27.33				1
Right Touched	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.216**	23.0	
	251	848.8	27.33				1
Right Tilted	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.133**	23.0	
	251	848.8	27.33				1

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.

14.2.2 Body w/ 1.0 cm (hotspot mode)

GPRS 4 slot (CS1) – Duty Cycle 48.0%						Date : October 6, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Top Edge	128	824.2	27.34	1.6			4
	189	836.4	27.34				4
	251	848.8	27.33				4
Bottom Edge	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.109**	23.0	
	251	848.8	27.33				1
Left Edge	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.330**	23.0	
	251	848.8	27.33				1
Right Edge	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.207**	23.0	
	251	848.8	27.33				1
Front Side	128	824.2	27.34	1.6			1
	189	836.4	27.34		**0.287**	23.0	
	251	848.8	27.33				1
Rear Side	128	824.2	27.34	1.6	**0.423**	23.0	
	189	836.4	27.34		**0.449**	23.0	
	251	848.8	27.33		**0.479**	23.0	
	251	848.8	27.33		**0.493**	23.0	2
	251	848.8	27.33		**0.535**	23.0	3

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.
3. With headset attached.
4. SAR is not required because the distance from the transmitting antenna to this surface (or edge) is greater than 2.5 cm (KDB 941225 D06 Hot Spot SAR).

14.3 PCS 1900

14.3.1 Head

GPRS 4 slot (CS1) – Duty Cycle 48.0%						Date : October 7, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.159**	23.0	
	810	1909.8	24.97				1
Left Tilted	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.053**	23.0	
	810	1909.8	24.97				1
Right Touched	512	1850.2	24.91	1.6	**0.303**	23.0	
	661	1880.0	24.92		**0.303**	23.0	
	810	1909.8	24.97		**0.310**	23.0	
	810	1909.8	24.97		**0.309**	23.0	2
Right Tilted	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.064**	23.0	
	810	1909.8	24.97				1

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.

14.3.2 Body w/ 1.0 cm (hotspot mode)

GPRS 4 slot (CS1) – Duty Cycle 48.0%						Date : October 8, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Top Edge	512	1850.2	24.91	1.6			4
	661	1880.0	24.92				4
	810	1909.8	24.97				4
Bottom Edge	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.478**	23.0	
	810	1909.8	24.97				1
Left Edge	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.134**	23.0	
	810	1909.8	24.97				1
Right Edge	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.173**	23.0	
	810	1909.8	24.97				1
Front Side	512	1850.2	24.91	1.6			1
	661	1880.0	24.92		**0.306**	23.0	
	810	1909.8	24.97				1
Rear Side	512	1850.2	24.91	1.6	**0.450**	23.0	
	661	1880.0	24.92		**0.512**	23.0	
	810	1909.8	24.97		**0.585**	23.0	
	810	1909.8	24.97		**0.581**	23.0	2
	810	1909.8	24.97		**0.593**	23.0	3

NOTE(S) :
1. SAR test was performed in the middle channel only as the measured level was <50% of the SAR limit (0.8 mW/g) as stated in FCC "Public Notice DA 02-1438" by the SCC-34/SC-2. Testing in the low and high channel is optional.
2. With touch-pen attached.
3. With headset attached.
4. SAR is not required because the distance from the transmitting antenna to this surface (or edge) is greater than 2.5 cm (KDB 941225 D06 Hot Spot SAR).

14.4 WLAN 2.4 GHz

14.4.1 Head

802.11b (1 Mbps) – Duty Cycle: 100 %						Date : October 9, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	1	2412	13.18	1.6			1
	6	2437	13.58		**0.018**	23.0	
	11	2462	13.55				1
Left Tilted	1	2412	13.18	1.6			1
	6	2437	13.58		**0.00909**	23.0	
	11	2462	13.55				1
Right Touched	1	2412	13.18	1.6	**0.032**	23.0	
	6	2437	13.58		**0.045**	23.0	
	11	2462	13.55		0.051	23.0	
	11	2462	13.55		**0.049**	23.0	2
Right Tilted	1	2412	13.18	1.6			1
	6	2437	13.58		**0.016**	23.0	
	11	2462	13.55				1

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.

14.4.2 Body w/ 1.0 cm (hotspot mode)

802.11b (1 Mbps) – Duty Cycle 100%						Date : October 10, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Top Edge	1	2412	13.18	1.6			1
	6	2437	13.58		**0.00525**	23.0	
	11	2462	13.55				1
Bottom Edge	1	2412	13.18	1.6			4
	6	2437	13.58				4
	11	2462	13.55				4
Left Edge	1	2412	13.18	1.6			1
	6	2437	13.58		**0.044**	23.0	
	11	2462	13.55				1
Right Edge	1	2412	13.18	1.6			4
	6	2437	13.58				4
	11	2462	13.55				4
Front Side	1	2412	13.18	1.6			1
	6	2437	13.58		**0.012**	23.0	
	11	2462	13.55				1
Rear Side	1	2412	13.18	1.6	**0.066**	23.0	
	6	2437	13.58		**0.083**	23.0	
	11	2462	13.55		**0.099**	23.0	
	11	2462	13.55		**0.088**	23.0	2
	11	2462	13.55		**0.093**	23.0	3

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.
3. With headset attached.
4. SAR is not required because the distance from the transmitting antenna to this surface (or edge) is greater than 2.5 cm (KDB 941225 D06 Hot Spot SAR).

14.5 WLAN 5.2 GHz

14.5.1 Head

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 11, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	36	5180	11.23	1.6			1
	48	5240	11.36		**0.020**	23.0	
Left Tilted	36	5180	11.23	1.6			1
	48	5240	11.36		**0.015**	23.0	
Right Touched	36	5180	11.23	1.6	0.057	23.0	
	36	5180	11.23		**0.056**	23.0	2
	48	5240	11.36		**0.042**	23.0	
Right Tilted	36	5180	11.23	1.6			1
	48	5240	11.36		**0.032**	23.0	

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.

14.5.2 Body w/ 1.0 cm (body-worn accessory)

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 16, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Front Side	36	5180	11.23	1.6			1
	48	5240	11.36		**0.013**	23.0	
Rear Side	36	5180	11.23	1.6	**0.166**	23.0	
	36	5180	11.23		**0.167**	23.0	2
	36	5180	11.23		**0.159**	23.0	3
	48	5240	11.36		**0.166**	23.0	

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.
3. With headset attached.

14.6 WLAN 5.3 GHz

14.6.1 Head

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 11, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	52	5260	11.35	1.6	**0.026**	23.0	
	64	5320	11.33				1
Left Tilted	52	5260	11.35	1.6	**0.018**	23.0	
	64	5320	11.33				1
Right Touched	52	5260	11.35	1.6	**0.055**	23.0	
	52	5260	11.35		0.057	23.0	2
	64	5320	11.33		**0.044**	23.0	
Right Tilted	52	5260	11.35	1.6	**0.021**	23.0	
	64	5320	11.33				1

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.

14.6.2 Body w/ 1.0 cm (body-worn accessory)

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 16, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Front Side	52	5260	11.35	1.6	**0.014**	23.0	
	64	5320	11.33				1
Rear Side	52	5260	11.35	1.6	**0.172**	23.0	
	64	5320	11.33		**0.189**	23.0	
	64	5320	11.33		**0.193**	23.0	2
	64	5320	11.33		**0.179**	23.0	3

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.8 mW/g with the operating frequency band having a range of <100 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.
3. With headset attached.

14.7 WLAN 5.6 GHz

14.7.1 Head

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 15, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Left Touched	104	5520	13.02	1.6	**0.031**	23.0	
	116	5580	12.99				1
	124	5620	N/A				3
	136	5680	12.88				1
Left Tilted	104	5520	13.02	1.6	**0.018**	23.0	
	116	5580	12.99				1
	124	5620	N/A				3
	136	5680	12.88				1
Right Touched	104	5520	13.02	1.6	**0.094**	23.0	
	116	5580	12.99		**0.100**	23.0	
	124	5620	N/A				3
	136	5680	12.88		0.107	23.0	
	136	5680	12.88		**0.103**	23.0	2
Right Tilted	104	5520	13.02	1.6	**0.024**	23.0	
	116	5580	12.99				1
	124	5620	N/A				3
	136	5680	12.88				1

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.4 mW/g with the operating frequency band having a range of <200 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.
3. This channel is disabled.

14.7.2 Body w/ 1.0 cm (body-worn accessory)

802.11a (6 Mbps) – Duty Cycle: 100 %						Date : October 17, 2012	
Test Position	Ch#	Frequency [MHz]	Tx Power [dBm]	Limit [mW/g]	**1g SAR [mW/g]**	Tissue Temp. [°C]	Note
Front Side	104	5520	13.02	1.6	**0.023**	23.0	
	116	5580	12.99				1
	124	5620	N/A				4
	136	5680	12.88				1
Rear Side	104	5520	13.02	1.6	**0.264**	23.0	
	116	5580	12.99		**0.323**	23.0	
	124	5620	N/A				4
	136	5680	12.88		**0.366**	23.0	
	136	5680	12.88		**0.354**	23.0	2
	136	5680	12.88		0.384	23.0	3

NOTE(S) :
1. SAR test was performed in the default test channel described in KDB 248227 D01 with the highest output power only as the measured level was <0.4 mW/g with the operating frequency band having a range of <200 MHz (KDB 447498 D01). Testing in the other channel is optional.
2. With touch-pen attached.
3. With headset attached.
4. This channel is disabled.

14.8 Scaled SAR Values to the Maximum Tune-up Tolerances

The following measured results were scaled to the maximum tune-up tolerance, according to the output power of the channel tested for the highest measured results in each frequency band.

Band	Mode	CH	Freq. (MHz)	Test Configuration		Power (dBm)		SAR (mW/g)	
						Tune-up Limit	Measured	Measured	Scaled
WCDMA Band V	12.2kbps RMC	4182	836.4	Head	Left Touched	24.2	23.13	0.293	0.375
		4233	846.6	Body	Rear Side	24.2	22.97	0.515	0.684
GSM 850	GPRS 4 slots	189	836.4	Head	Left Touched	28.7	27.34	0.259	0.354
		251	848.8	Body	Rear Side	28.7	27.33	0.535	0.733
PCS 1900	GPRS 4 slots	810	1909.8	Head	Right Touched	26.0	24.97	0.310	0.393
		810	1909.8	Body	Rear Side	26.0	24.97	0.593	0.752
WLAN 2.4 GHz	802.11b 1 Mbps	11	2462	Head	Right Touched	16.5	13.55	0.051	0.101
		11	2462	Body	Rear Side	16.5	13.55	0.099	0.195
WLAN 5.2 GHz	802.11a 6 Mbps	36	5180	Head	Right Touched	14.5	11.23	0.057	0.121
		36	5180	Body	Rear Side	14.5	11.23	0.167	0.355
WLAN 5.3 GHz	802.11a 6 Mbps	52	5260	Head	Right Touched	14.5	11.35	0.057	0.118
		64	5320	Body	Rear Side	14.5	11.33	0.193	0.400
WLAN 5.6 GHz	802.11a 6 Mbps	136	5680	Head	Right Touched	14.5	12.88	0.107	0.155
		136	5680	Body	Rear Side	14.5	12.88	0.384	0.558

14.9 SAR Handsets Multiple Transmitters Assessment (KDB 648474 D01)

14.9.1 Simultaneous Transmission

3G/GSM can transmit simultaneously with WLAN/Bluetooth.
WLAN in 2.4 GHz and 5 GHz bands cannot transmit simultaneously with Bluetooth.

No.	Conditions
1	WCDMA Band V + WLAN 2.4 GHz
2	GSM 850 + WLAN 2.4 GHz
3	PCS 1900 + WLAN 2.4 GHz
4	WCDMA Band V + WLAN 5 GHz
5	GSM 850 + WLAN 5 GHz
6	PCS 1900 + WLAN 5 GHz
7	WCDMA Band V + Bluetooth
8	GSM 850 + Bluetooth
9	PCS 1900 + Bluetooth

The device is capable of personal hotspot mode with WLAN in 2.4 GHz band.
However, the 5 GHz bands do not support hotspot mode.

14.9.2 Antenna Separation Distances

3G/GSM to WLAN/Bluetooth : 89 mm

14.9.3 Stand-alone SAR Requirements for Unlicensed Transmitters

WLAN : **Required**
The output of WLAN transmitter is > $2 \cdot P_{ref}$.

Bluetooth : **Not required**
The output of Bluetooth transmitter is ≤ P_{ref} and its antenna is > 2.5 cm from main antenna.

14.9.4 Sum of the SAR for 3G/GSM + WLAN 2.4 GHz

14.9.4.1 Head

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 2.4GHz	
Left Touched	WCDMA Band V	0.293	0.018	0.311
	GSM 850	0.259	0.018	0.277
	PCS1900	0.159	0.018	0.177
Left Tilted	WCDMA Band V	0.150	0.009	0.159
	GSM 850	0.125	0.009	0.134
	PCS1900	0.053	0.009	0.062
Right Touched	WCDMA Band V	0.241	0.051	0.292
	GSM 850	0.216	0.051	0.267
	PCS1900	0.310	0.051	0.361
Right Tilted	WCDMA Band V	0.150	0.016	0.166
	GSM 850	0.133	0.016	0.149
	PCS1900	0.064	0.016	0.080

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 2.4GHz	
Left Touched	WCDMA Band V	0.375	0.035	0.410
Left Touched	GSM 850	0.354	0.035	0.389
Right Touched	PCS1900	0.393	0.101	0.494

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.4.2 Body w/ 1.0 cm (hotspot mode)

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 2.4GHz	
Top Edge	WCDMA Band V	N/A	0.005	**N/A**
	GSM 850	N/A	0.005	**N/A**
	PCS1900	N/A	0.005	**N/A**
Bottom Edge	WCDMA Band V	0.114	N/A	**N/A**
	GSM 850	0.109	N/A	**N/A**
	PCS1900	0.478	N/A	**N/A**
Left Edge	WCDMA Band V	0.337	0.044	**0.381**
	GSM 850	0.330	0.044	**0.374**
	PCS1900	0.134	0.044	**0.178**
Right Edge	WCDMA Band V	0.213	N/A	**N/A**
	GSM 850	0.207	N/A	**N/A**
	PCS1900	0.173	N/A	**N/A**
Front Side	WCDMA Band V	0.311	0.012	**0.323**
	GSM 850	0.287	0.012	**0.299**
	PCS1900	0.306	0.012	**0.318**
Rear Side	WCDMA Band V	0.515	0.099	**0.614**
	GSM 850	0.535	0.099	**0.634**
	PCS1900	0.593	0.099	**0.692**

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 2.4GHz	
Rear Side	WCDMA Band V	0.684	0.195	**0.879**
Rear Side	GSM 850	0.733	0.195	**0.928**
Rear Side	PCS1900	0.752	0.195	**0.947**

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.5 Sum of the SAR for 3G/GSM + WLAN 5.2 GHz

14.9.5.1 Head

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.2GHz	
Left Touched	WCDMA Band V	0.293	0.020	**0.313**
	GSM 850	0.259	0.020	**0.279**
	PCS1900	0.159	0.020	**0.179**
Left Tilted	WCDMA Band V	0.150	0.015	**0.165**
	GSM 850	0.125	0.015	**0.140**
	PCS1900	0.053	0.015	**0.068**
Right Touched	WCDMA Band V	0.241	0.057	**0.298**
	GSM 850	0.216	0.057	**0.273**
	PCS1900	0.310	0.057	**0.367**
Right Tilted	WCDMA Band V	0.150	0.032	**0.182**
	GSM 850	0.133	0.032	**0.165**
	PCS1900	0.064	0.032	**0.096**

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.2GHz	
Left Touched	WCDMA Band V	0.375	0.041	**0.416**
Left Touched	GSM 850	0.354	0.041	**0.395**
Right Touched	PCS1900	0.393	0.121	**0.514**

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.5.2 Body w/ 1.0 cm (body-worn accessory)

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.2GHz	
Front Side	WCDMA Band V	0.311	0.013	**0.324**
	GSM 850	0.287	0.013	**0.300**
	PCS1900	0.306	0.013	**0.319**
Rear Side	WCDMA Band V	0.515	0.167	**0.682**
	GSM 850	0.535	0.167	**0.702**
	PCS1900	0.593	0.167	**0.760**

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.2GHz	
Rear Side	WCDMA Band V	0.684	0.355	**1.039**
Rear Side	GSM 850	0.733	0.355	**1.088**
Rear Side	PCS1900	0.752	0.355	**1.107**

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.6 Sum of the SAR for 3G/GSM + WLAN 5.3 GHz

14.9.6.1 Head

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.3GHz	
Left Touched	WCDMA Band V	0.293	0.026	0.319
	GSM 850	0.259	0.026	0.285
	PCS1900	0.159	0.026	0.185
Left Tilted	WCDMA Band V	0.150	0.018	0.168
	GSM 850	0.125	0.018	0.143
	PCS1900	0.053	0.018	0.071
Right Touched	WCDMA Band V	0.241	0.057	0.298
	GSM 850	0.216	0.057	0.273
	PCS1900	0.310	0.057	0.367
Right Tilted	WCDMA Band V	0.150	0.021	0.171
	GSM 850	0.133	0.021	0.154
	PCS1900	0.064	0.021	0.085

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.3GHz	
Left Touched	WCDMA Band V	0.375	0.054	0.429
Left Touched	GSM 850	0.354	0.054	0.408
Right Touched	PCS1900	0.393	0.118	0.511

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.6.2 Body w/ 1.0 cm (body-worn accessory)

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.3GHz	
Front Side	WCDMA Band V	0.311	0.014	**0.325**
	GSM 850	0.287	0.014	**0.301**
	PCS1900	0.306	0.014	**0.320**
Rear Side	WCDMA Band V	0.515	0.193	**0.708**
	GSM 850	0.535	0.193	**0.728**
	PCS1900	0.593	0.193	**0.786**

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.3GHz	
Rear Side	WCDMA Band V	0.684	0.400	**1.084**
Rear Side	GSM 850	0.733	0.400	**1.133**
Rear Side	PCS1900	0.752	0.400	**1.152**

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.7 Sum of the SAR for 3G/GSM + WLAN 5.6 GHz

14.9.7.1 Head

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.6GHz	
Left Touched	WCDMA Band V	0.293	0.031	0.324
	GSM 850	0.259	0.031	0.290
	PCS1900	0.159	0.031	0.190
Left Tilted	WCDMA Band V	0.150	0.018	0.168
	GSM 850	0.125	0.018	0.143
	PCS1900	0.053	0.018	0.071
Right Touched	WCDMA Band V	0.241	0.107	0.348
	GSM 850	0.216	0.107	0.323
	PCS1900	0.310	0.107	0.417
Right Tilted	WCDMA Band V	0.150	0.024	0.174
	GSM 850	0.133	0.024	0.157
	PCS1900	0.064	0.024	0.088

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.6GHz	
Left Touched	WCDMA Band V	0.375	0.044	0.419
Left Touched	GSM 850	0.354	0.044	0.398
Right Touched	PCS1900	0.393	0.155	0.548

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

14.9.7.2 Body w/ 1.0 cm (body-worn accessory)

Sum of the SAR with Measured Values

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.6GHz	
Front Side	WCDMA Band V	0.311	0.023	**0.334**
	GSM 850	0.287	0.023	**0.310**
	PCS1900	0.306	0.023	**0.329**
Rear Side	WCDMA Band V	0.515	0.384	**0.899**
	GSM 850	0.535	0.384	**0.919**
	PCS1900	0.593	0.384	**0.977**

Sum of the SAR with Scaled Values for the Worst-case Configuration

Test Position	Highest 1g SAR (mW/g)			Σ 1g SAR (mW/g)
	3G/GSM Band		WLAN 5.6GHz	
Rear Side	WCDMA Band V	0.684	0.558	**1.242**
Rear Side	GSM 850	0.733	0.558	**1.291**
Rear Side	PCS1900	0.752	0.558	**1.310**

SAR to Peak Location Separation Ratio (SPLSR)

As the sum of the 1g SAR is < 1.6 W/kg, SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1g SAR is < 1.6 W/kg.

16 Test Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
E-Field Probe	ET3DV6	SPEAG	S-2	2012/8	1 Year
E-Field Probe	EX3DV4	SPEAG	S-17	2012/9	1 Year
DAE	DAE4	SPEAG	S-3	2011/11	1 Year
Robot	RX60L	SPEAG	S-7	------	N/A
Probe Alignment Unit	LB1RX60L	SPEAG	S-13	------	N/A
Network Analyzer	8719ET	Agilent	B-53	2012/9	1 Year
Dielectric Probe Kit	85070D	Agilent	B-54	------	N/A
835MHz Dipole	D835V2	SPEAG	S-23	2012/8	1 Year
1900MHz Dipole	D1900V2	SPEAG	S-25	2012/8	1 Year
2450MHz Dipole	D2450V2	SPEAG	S-6	2011/11	1 Year
5GHz Dipole	D5GHzV2	SPEAG	S-31	2012/9	1 Year
Signal Generator	MG3681A	Anritsu	B-3	2012/9	1 Year
Signal Generator	MG3710A	Anritsu	B-41	2012/9	1 Year
RF Power Amplifier	A0840-3833-R	R&K	A-34	------	N/A
RF Power Amplifier	CGA020M602-2633R	R&K	A-51	------	N/A
Directional Coupler	4226-20	narda	D-87	------	N/A
Low Pass Filter	LSM1000-4BA	LARK	D-90	2011/11	1 Year
Low Pass Filter	LSM2200-4BA	LARK	D-91	2011/11	1 Year
Low Pass Filter	LSM2700-3BA	LARK	D-92	2011/11	1 Year
Radio Communication Analyzer	MT8820C	Anritsu	B-5	2012/2	1 Year
Power Meter	E4417A	Agilent	B-51	2012/6	1 Year
Power Sensor	E9323A	Agilent	B-59	2012/6	1 Year
Power Meter	N1911A	Agilent	B-63	2012/7	1 Year
Power Sensor	N1921A	Agilent	B-64	2012/7	1 Year
Attenuator	54A-10	Weinschel	D-28	2012/9	1 Year
Attenuator	2-20	Weinschel	D-36	2012/9	1 Year

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