

Page 1 of 22

JQA File No.: KL80060378 Issued Date: November 1, 2006

TEST REPORT (SAR EVALUATION)

APPLICANT : Panasonic Communications Co., Ltd.

ADDRESS: 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka, 812-8531,

Japan

PRODUCTS : 2.4GHz Frequency Hopping Spread Spectrum Cordless

Telephone (Handset)

MODEL NO. : KX-TGA300

SERIAL NO. : --

FCC ID : ACJ96NKX-TG3031

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 : October 16, 2006 - October 17, 2006

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



Yuichi Fukumoto

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.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 2 of 22

TABLE OF CONTENTS

		Page
Docum	entation	3
1	Test Regulation	3
2	Test Location	3
3	Recognition of Test Laboratory	3
4	Description of the Equipment Under Test	4
5	Measurement System Diagram	5
6	System Components	6
7	Measurement Process	8
8	Measurement Uncertainties	9
9	Equipment Under Test Modification	10
10	Responsible Party	10
11	Deviation from Standard	10
12	Test Results	11
13	Summary	12
14	Test Arrangement	13
15	Equipment Under Test Tune-Up Procedures	15
Appen	dix A: Test Data	16
A.1	System Validation	16
A.2	Tissue Verification	17
A.3	SAR Measurement Data	18
Appen	dix B: Test Instruments	21
Appen	dix C: Attachments	22

<u>DEFINITIONS FOR ABBREVIATION AND SYMBOLS USED IN THIS TEST REPORT</u>

"EUT"	means	Equipme	ent Under	the Test.

\boxtimes	-	indicates that the	listed condition,	standard or	equipment is	s applicable for this	s report.
	-	indicates that the	listed condition,	standard or	equipment i	s not applicable for	this report.

[&]quot;N/A" means that Not Applicable.

[&]quot;N/T" means that Not Tested.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 3 of 22

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) and IEEE Std.1528–2003

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 : April 3, 2008) NVLAP Lab Code : 200191-0 (Effective through : June 30, 2007) BSMI Recognition No. : SL2-IS-E-6006, SL2-IN-E-6006, SL2-AI-E-6006

(Effective through: September 14, 2007)

VCCI Registration No. : R-006, R-008, R-1117, C-006, C-007, C-1674, C-2143

(Effective through : April 3, 2008)

FCC Registration No. : 683630 (Effective through: June 30, 2007)

IC Registration No. : IC 4125-1, IC 6217-1, IC 6217-2 (Effective through: November 16, 2008)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Effective through: February 24, 2007)



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 4 of 22

4 Description of the Equipment Under Test

1. Manufacturer : Panasonic Communications Co., Ltd.

1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka, 812-8531,

Japan

2. Products : 2.4GHz Frequency Hopping Spread Spectrum Cordless

Telephone (Handset)

3. Model No. : KX-TGA300

4. Serial No. : -

5. Product Type : Prototype

6. Date of Manufacture : October, 2006

7. Transmitting Frequency : 2400.914355 MHz (1ch) – 2480.292773 MHz (90ch)

8. Max. RF Output Power

(Conducted / Peak)

19.63 dBm

9. Battery Option : Ni-MH Battery Pack HHR-P107 (650 mAh)

10. Power Rating : 3.6VDC11. EUT Grounding : None

12. Device Category : Portable Device (§2.1093)

13. Exposure Category : General Population/Uncontrolled Exposure

14. FCC Rule Part(s) : 15.247

15. EUT Authorization : Certification

16. Received Date of EUT : October 10, 2006



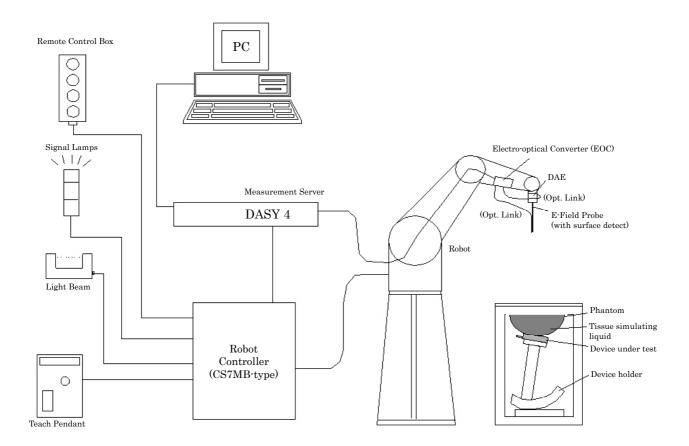
Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 5 of 22

5 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.





Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 6 of 22

6 System Components

6.1 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 900 MHz (accuracy \pm 11.0%; k=2) 1450 MHz (accuracy \pm 11.0%; k=2) 1810 MHz (accuracy \pm 11.0%; k=2) 1950 MHz (accuracy \pm 11.0%; k=2) 2450 MHz (accuracy \pm 11.8%; k=2)

Frequency : 10 MHz to 3 GHz (dosimetry);

Linearity: ±0.2 dB (30 MHz to 3 GHz)

Directivity $\pm 0.2 \text{ dB}$ in HSL (rotation around probe axis)

± 0.4 dB in HSL (rotation normal probe axis)

Dynamic Range : $5 \mu \text{W/g}$ to >100 mW/g; Linearity: $\pm 0.2 \text{ dB}$

Surface Detection $\div \pm 0.2$ mm repeatability in air and clear liquids over diffuse reflecting surfaces

Dimensions : Overall length 330 mm

 $\begin{array}{ll} \text{Tip length} & 16 \text{ mm} \\ \text{Body diameter} & 12 \text{ mm} \\ \text{Tip diameter} & 6.8 \text{ mm} \end{array}$

Distance from probe tip to dipole centers 2.7 mm





Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 7 of 22

6.2 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 62209-1. It enables the dosimetric evaluation of left and right head 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 : $2 \pm 0.2 \text{ mm}$

Filling Volume : Volume Approx. 25 liters

Dimensions : $810 \times 1000 \times 500 \text{ mm} (H \times L \times W)$

6.3 Mounting Device for Transmitters

The Mounting Device 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, flat phantom).



6.4 Typical Composition of Ingredients for Liquid Tissue

Inquadiants		Frequency (MHz)									
Ingredients (% by weight)	88	35	19	00	2450						
(70 by weight)	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 $M\Omega^+$ 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.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 8 of 22

7 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 $10 \text{ mm} \times 10 \text{ mm}$. 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.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 9 of 22

8 Measurement Uncertainties

Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c _i (1g)	c _i (10g)	Std. Un	c. (± %)	v_i
	(± /0)	Dist.		(1g)	(10g)	1g	10g	
Measurement System								
Probe calibration	5.9	N	1	1	1	5.9	5.9	∞
Axial isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	$\sqrt{3}$	0.7	0.7	3.9	3.9	∞
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
System detection limits	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Readout electronics	0.4	N	1	1	1	0.4	0.4	∞
Response time	0.0	R	$\sqrt{3}$	1	1	0.0	0.0	∞
Integration time	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
RF ambient conditions – noise	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
RF ambient conditions – reflections	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
Probe positioner mechanical tolerance	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
Probe positioning with respect to phantom shell	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
Extrapolation, interpolation and integration	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
algorithms for max. SAR evaluation								
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	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom uncertainty	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Liquid conductivity – deviation from target	5.0	R	$\sqrt{3}$	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		R	$\sqrt{3}$	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. 1528–2003.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 10 of 22

9	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 Date Typed Name Position	: Not Applicable: Not Applicable: Not Applicable: Not Applicable	Signatory :									
10	Responsible Pa	•	ole Party of Test Item (Product)									
	Responsible	e Party :										
	Contact Per	rson :	Signatory									
11		ations from the standard	described in clause 1. oyed from the standard described in clause 1.									



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 11 of 22

12 Test Results

12.1 SAR Measurement for Head Configuration

Maximum SAR (1g)	0.188 mW/g at	2401 MHz
Phantom Position	🛚 - Left Head	🗌 - Right Head
Device Position	☐ - Cheek/Touch	🗌 - Ear/Tilt
Antenna Position	☐ - In ☐ - Out	\boxtimes - Fixed
Modulation Type		FHSS
Remarks:		
12.2 SAR Measurement for Body-worn Configuration		
Maximum SAR (1g)	0.198 mW/g at	2401 MHz
Body-worn Carry Accessories	Supplied	\boxtimes - Not supplied
Separation Distance between Device and Phantom		0 cm
Modulation Type		FHSS



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 12 of 22

13 Summary

General Remarks:

The EUT was tested according to the requirements of FCC/OET Bulletin 65 Supplement C (Edition 01-01) under the test configuration, as 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.

Test Results:

The "as received" sample;

 \boxtimes - 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

Engineer

Testing Dept. EMC Div.

JQA KITA-KANSAI Testing Center



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 13 of 22

Horizontal

Mobile phone box

Vertical

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.



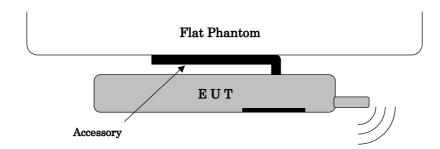


Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 14 of 22

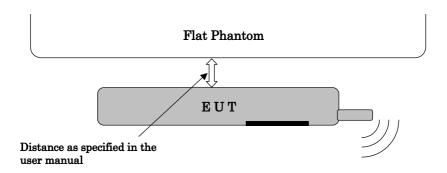
14.3 Body-worn Configuration

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.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 15 of 22

15 Equipment Under Test Tune-Up Procedures

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, RF test mode prepared by the manufacturer was used to program the EUT.

Modulation type : Frequency Hopping Spread Spectrum (FHSS)

Channel	Frequency (MHz)	Peak Power (dBm)
01	2400.914355	18.75
45	2440.156641	19.63
90	2480.292773	19.53

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



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

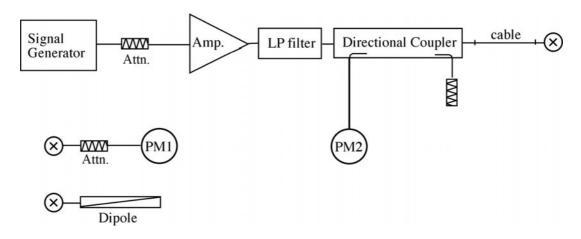
Page 16 of 22

Appendix A: Test Data

A.1 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 : D2450V2, S/N: 714										
Ambient Conditions:	21°C 59%	Depth of Liquid: 1	5.0 cm	Ι	ate: October	16, 2006				
Liquid		Danasakan	// t	M	D'-+' [0/]	T: : [0/]				
Medium	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]				
		Permittivity	52.7	52.26	-0.83	± 5				
Muscle 2450 MHz	21.0	Conductivity	1.95	2.022	+3.69	± 5				
		1g SAR (mW/g)	13.5	13.7	+1.48	± 10				
Ambient Conditions:	20°C 70%	Depth of Liquid: 1	5.0 cm	Ι	Oate: October	17, 2006				
Liquid		Danasakan	// t	M	D : .: [0/]	T : [0/]				
Medium	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]				
		Permittivity	39.2	37.78	-3.62	± 5				
Head 2450 MHz	20.0	Conductivity	1.80	1.831	+1.72	± 5				
		1g SAR (mW/g)	14.0	14.3	+2.14	± 10				

NOTE: Please refer to attachment for the result presentation in plot format.

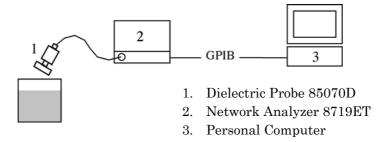


Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 17 of 22

A.2 Tissue Verification

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



Tissue Verification Results:

Ambient Conditions: 21°C 59% Date: October 16, 2006							
Liquid	Liquid			Managara	Deviation [%]	T::+ [0/]	
Medium	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]	
35 1 0470351	91.0	Permittivity	52.7	52.26	-0.83	± 5	
Muscle 2450 MHz	21.0	Conductivity	1.95	2.022	+3.69	± 5	
Ambient Conditions:	20°C 70%			Ι	Oate: October	17, 2006	
Liquid		Daniam at ana	To	Manager	Deviation [%]	T::+ [0/]	
Medium	Temp. [°C]	Parameters	Target	Measured	Deviation [%]	Limit [%]	
II 10470 MII	20.0	Permittivity	39.2	37.78	-3.62	± 5	
Head 2450 MHz	20.0	Conductivity	1.80	1.831	+1.72	± 5	



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 18 of 22

A.3 SAR Measurement Data

A.3.1 Left Side

CONFIDENTIAL

Cheek/Touch Position

Ear/Tilt Position

FHSS (Duty C	FHSS (Duty Cycle: 19.2 %, Crest Factor: 5.2) Date: October 17, 2006										
EUT Set-up Configuration		Frequency		Power [dBm] (Peak)		Limit	SAR (1g)	Tissue Temp.			
EUT Position	Antenna	Channel	MHz	Start	End	[mW/g]	[mW/g]	[°C]			
	Fixed	01	2401	18.75	18.75		0.188	20.0			
Cheek/Touch		45	2440	19.63	19.63	1.6	0.168	20.0			
		90	2480	19.53	19.53		0.151	20.0			
	Fixed	01	2401			1.6	**				
Ear/Tilt		45	2440	19.63	19.63		0.141	20.0			
		90	2480				**				

NOTES:

- 1. Depth of Liquid: 15.0 cm
- 2. Transmitter power was measured at the antenna-conducted terminal.
- 3. The SAR result marked at ** is optional, because the SAR measured at the middle channel for that configuration is at least 3.0 dB lower than the SAR limit.
- 4. Please refer to attachment for the result presentation in plot format.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 19 of 22

A.3.2 Right Side

CONFIDENTIAL

Cheek/Touch Position

Ear/Tilt Position

FHSS (Duty Cycle: 19.2 %, Crest Factor: 5.2) Date: October 17,										
EUT Set-up Configuration		Frequency		Power [dBm] (Peak)		Limit	SAR (1g)	Tissue Temp.		
EUT Position	Antenna	Channel	MHz	Start	End	[mW/g]	[mW/g]	[°C]		
	Fixed	01	2401				**			
Cheek/Touch		45	2440	19.63	19.63	1.6	0.164	20.0		
		90	2480				**			
	Fixed	01	2401				**			
Ear/Tilt		45	2440	19.63	19.63	1.6	0.133	20.0		
		90	2480				**			

NOTES:

- 1. Depth of Liquid: 15.0 cm
- $2. \quad Transmitter \ power \ was \ measured \ at \ the \ antenna-conducted \ terminal.$
- 3. The SAR result marked at ** is optional, because the SAR measured at the middle channel for that configuration is at least 3.0 dB lower than the SAR limit.
- 4. Please refer to attachment for the result presentation in plot format.



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 20 of 22

A.3.3 Body-worn Position

CONFIDENTIAL

FHSS (Duty Cycle: 19.2 %, Crest Factor: 5.2) Date: October 16, 2006								16, 2006
EUT Set-up Configuration		Frequency		Power [dBm] (Peak)		Limit	SAR (1g)	Tissue Temp.
Separation	Antenna	Channel	MHz	Start	End	[mW/g]	[mW/g]	[°C]
		01	2401	18.75	18.75		0.198	21.0

			4		(Peak)		[777/]	[777/]	Temp.
	Separation	Antenna	Channel	MHz	Start	End	[mW/g]	[mW/g]	[°C]
			01	2401	18.75	18.75		0.198	21.0
	0 cm	Fixed	45	2440	19.63	19.63	1.6	0.174	21.0
			90	2480	19.53	19.53		0.149	21.0

NOTES:

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



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 21 of 22

Appendix B: Test Instruments

Туре	Model	Manufacturer	ID No.	Last Cal.	Interval
E-Field Probe	ET3DV6	SPEAG	S-2	2005/12	1 Year
DAE	DAE3 V1	SPEAG	S-3	2005/12	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	2006/6	1 Year
Dielectric Probe Kit	85070D	Agilent	B-54	N/A	N/A
2400MHzDipole	D2450V2	SPEAG	S-6	2004/12	2 Years
Signal Generator	MG3681A	Anritsu	B-3	2006/2	1 Year
RF Amplifier	A0840-3833-R	R&K	A-34	N/A	N/A
Low Pass Filter	LSM2700-3BA	LARK	D-92	2005/12	1 Year
Power Meter	E4417A	Agilent	B-51	2006/6	1 Year
Power Sensor	E9300B	Agilent	B-32	2006/6	1 Year
Power Meter	N1911A	Agilent	B-63	2006/6	1 Year
Power Sensor	N1921A	Agilent	B-64	2006/6	1 Year
Attenuator	4T-10	Weinschel	D-73	2006/5	1 Year



Standard : FCC/OET Bulletin 65 Supplement C (Edition 01-01)

Page 22 of 22

Appendix C: Attachments

Exhibit	Contents	No. of page(s)
1	System Validation Plots	2
2	SAR Test Plots	11
3	Dosimetric E-Field Probe – ET3DV6, S/N: 1679	9
4	System Validation Dipole - D2450V2, S/N: 714	9
5	Transmitted Duty Cycle Plots	1
6	EUT Photographs	3