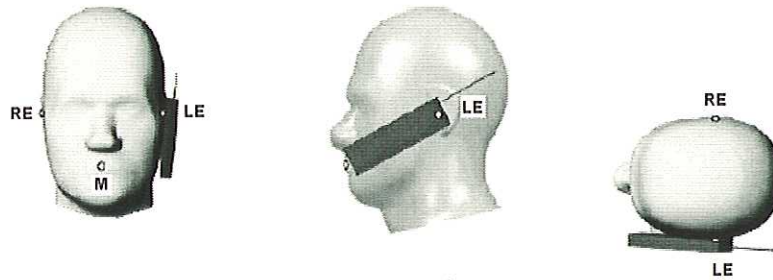
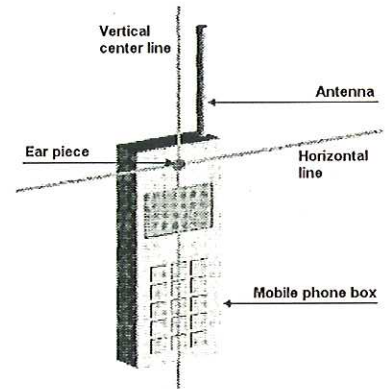


14 Test Arrangement

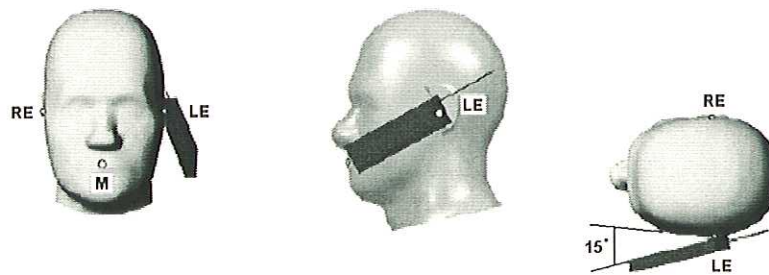
14.1 Cheek-Touch Position

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.



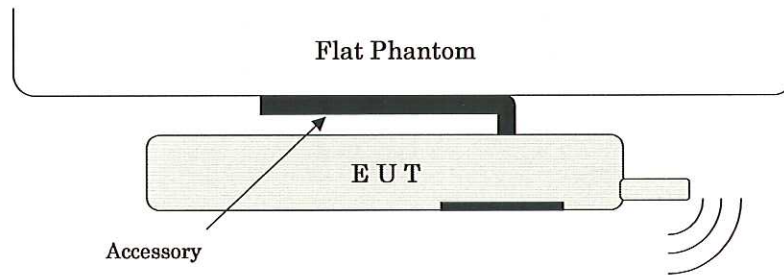
14.2 Ear-Tilt Position

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.



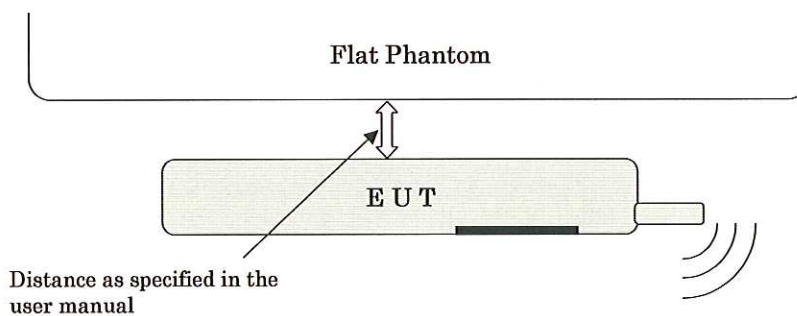
**14.3 Body-worn Configuration**

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

Conducted power measurements:

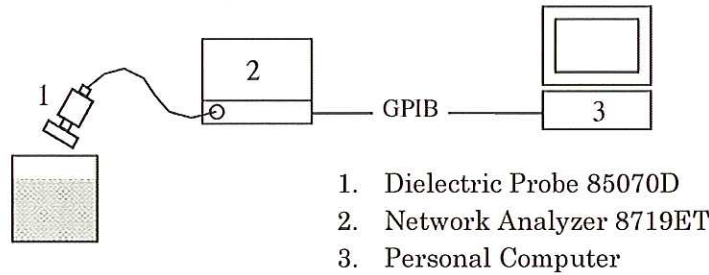
Channel	Frequency (MHz)	Conducted Power (dBm)
4	1921.5	19.14
2	1924.9	19.09
0	1928.4	19.04

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  $\pm 5\%$  of the parameters specified at that target frequency. It is verified by using the dielectric probe and the network analyzer.



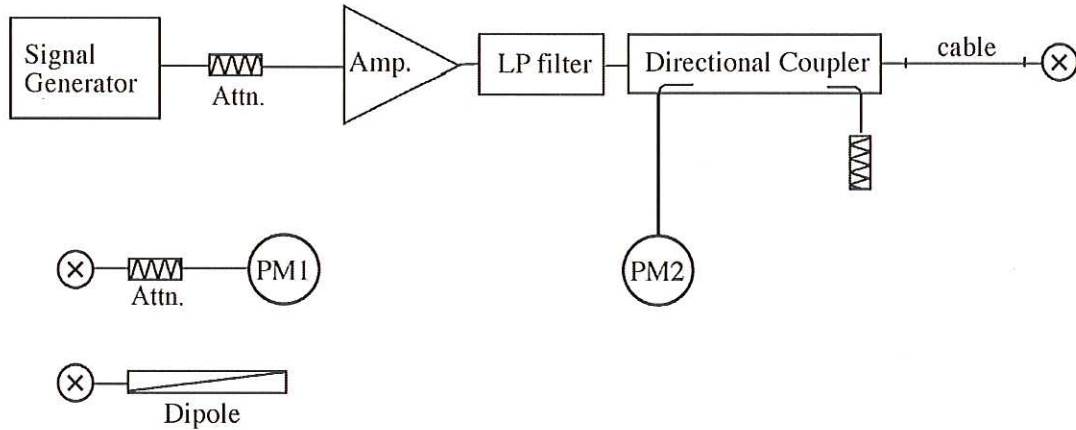
### Tissue Verification Results :

Liquid		Parameters	Target	Measured	Deviation [%]	Limit [%]
Frequency	Temp. [°C]					
Head 1950 MHz	23.0	Permittivity	40.0	39.69	-0.78	$\pm 5$
		Conductivity	1.40	1.399	-0.07	$\pm 5$

**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.

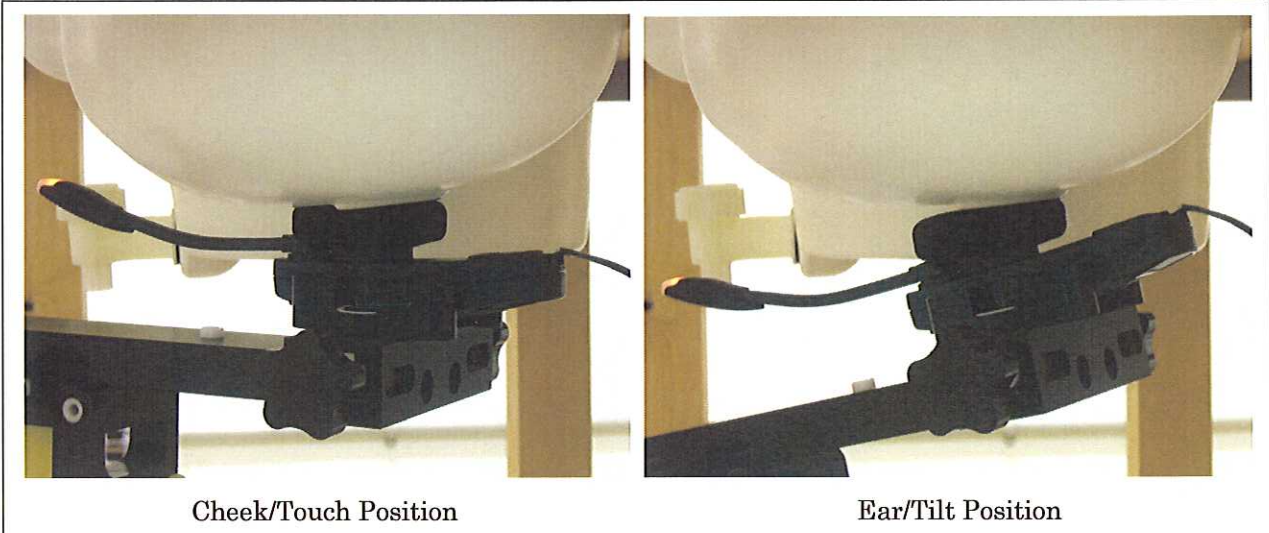


**System Validation Results :**

System Validation Dipole : D1950V2, S/N: 1033						
Ambient Conditions : 23°C 65%		Depth of Liquid : 15.0 cm		Date : August 4, 2008		
Liquid		Measured SAR (mW/g)		Target	Deviation [%]	Limit [%]
Frequency	Temp. [°C]	1g SAR	Normalized to 1 W			
Head 1950 MHz	23.0	10.0	40.0	38.4	+4.17	± 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

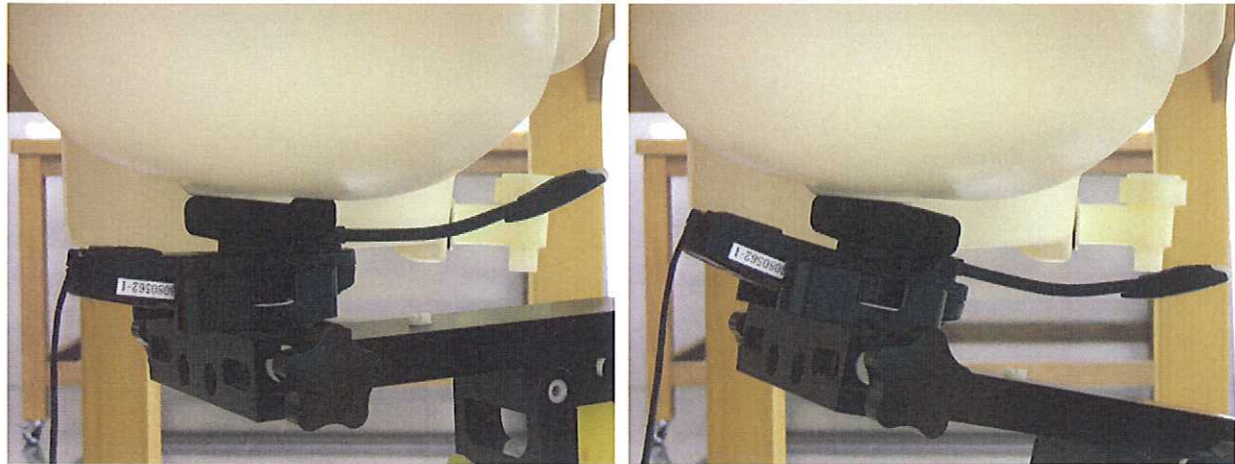
#### A.3.1 Left Head



DECT (Duty Cycle: 4.0 %, Crest Factor: 25)						Date : August 4, 2008	
Test Position	Frequency		Tx Power [dBm]	Power Drift [dB]	Limit [mW/g]	SAR (1g) [mW/g]	Tissue Temp. [°C]
	Channel	MHz					
Cheek/Touch	4	1921.5	--	--	1.6	**	--
	2	1924.9	19.09	-0.086		0.00281	23.0
	0	1928.4	--	--		**	--
Ear/Tilt	4	1921.5	--	--	1.6	**	--
	2	1924.9	19.09	0.010		0.00273	23.0
	0	1928.4	--	--		**	--

- 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. The frame containing the battery is removed and put aside the test unit, because it could not be flipped by 180 degree so it need to hang to the product.
  5. Please refer to attachment for the result presentation in plot format.

### A.3.2 Right Head



Cheek/Touch Position

Ear/Tilt Position

DECT (Duty Cycle: 4.0 %, Crest Factor: 25)

Date : August 4, 2008

Test Position	Frequency		Tx Power [dBm]	Power Drift [dB]	Limit [mW/g]	SAR (1g) [mW/g]	Tissue Temp. [°C]
	Channel	MHz					
Cheek/Touch	4	1921.5	19.14	0.024	1.6	0.00313	23.0
	2	1924.9	19.09	-0.037		0.00304	23.0
	0	1928.4	19.04	-0.051		0.00290	23.0
Ear/Tilt	4	1921.5	--	--	1.6	**	--
	2	1924.9	19.09	-0.076		0.00267	23.0
	0	1928.4	--	--		**	--

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. The frame containing the battery is removed and put aside the test unit, because it could not be flipped by 180 degree so it need to hang to the product.
5. 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	2007/11	1 Year
DAE	DAE3 V1	SPEAG	S-3	2007/11	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	2007/10	1 Year
Dielectric Probe Kit	85070D	Agilent	B-54	N/A	N/A
1950MHz Dipole	D1950V2	SPEAG	S-19	2007/11	1 Year
Signal Generator	E8257D	Agilent	B-39	2008/7	1 Year
RF Amplifier	A0840-3833-R	R&K	A-34	N/A	N/A
Low Pass Filter	LSM2200-4BA	LARK	D-91	2007/11	1 Year
Power Meter	E4417A	Agilent	B-51	2008/6	1 Year
Power Sensor	E9300B	Agilent	B-32	2008/6	1 Year
Spectrum Analyzer	E4446A	Agilent	A-39	2007/12	1 Year
Attenuator	4T-10	Weinschel	D-73	2008/6	1 Year
Attenuator	4T-10	Weinschel	D-74	2008/6	1 Year

## Appendix C: Attachments

Exhibit	Contents	No. of page(s)
1	System Validation Plots	1
2	SAR Test Plots	7
3	Dosimetric E-Field Probe – ET3DV6, S/N: 1679	9
4	System Validation Dipole – D1800V2, S/N: 2d038	9