



SAR TEST REPORT

Test Report No. : 28FE0217-HO-G

Applicant : SHARP CORPORATION

Type of Equipment : GSM Mobile Phone

Model No. : PV210

FCC ID : APYNAR0064

Test regulation : FCC47CFR 2.1093
FCC OET Bulletin 65, Supplement C

Test Result : Complied

Max. SAR Measured :
GSM 850 : Head 0.475W/kg (848.8MHz)
 Body 1.35W/kg (848.8MHz)
PCS 1900 : Head 0.813W/kg (1850.2MHz)
 Body 0.684 W/kg (1850.2MHz)

Reference DATA

Max. SAR Measured (GSM 850 + Bluetooth) : 1.36W/kg

Max. SAR Measured (PCS1900 + Bluetooth) : 0.685W/kg

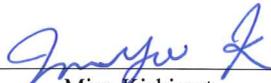
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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
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Date of test:

March 5 to 10, 2008

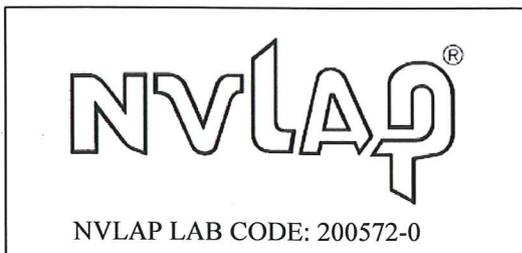
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 Site Manager of EMC Services



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SECTION 1: Client information

Company Name : SHARP CORPORATION
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Contact Person : Juri Sugiyama

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : GSM mobile phone
Model No. : PV210
Serial No. : 172 (GSM850,PCS1900)
: 167(Bluetooth)
Country of Manufacture : Japan
Battery Model Name : PV-BL41(Rechargeable Lithium-ion battery)
Rating : DC3.7V / 1030mAh
Manufacture : SHARP
Option Battery : N/A
Accessories : Earphone
Size : W: 120 mm D: 57.5mm H: 18.2mm
Receipt Date of Sample : February 22, 2008
Modification of EUT : No modification by the test lab
Country of Manufacture : Japan
Condition of EUT : Engineering prototype
(Not for Sale: This sample is not mass-produced items.)

2.2 Product Description

Model No: PV210 (referred to as the EUT in this report) is the GSM Mobile Phone

Radio Specification

	GSM850	PCS1900	Bluetooth
Equipment Type	Transceiver	Transceiver	Transceiver
Tx frequency	824.20 – 848.8MHz	1850.2MHz - 1909.8MHz	2402-2480MHz
Type of Modulation	GMSK,8PSK	GMSK,8PSK	FHSS
Bandwidth	340kHz	345kHz	79MHz
Channel Spacing	200kHz	200kHz	1MHz
Channel Number	124	299	79
Antenna Type	PIFA	PIFA	PIFA
Antenna Connector Type	Pin Contact	PinContact	Pin Contact
Antenna Gain	-4.3dBi max	-3.0dBi max	-2.71dBi
Power Supply	DC 3.7 – 4.2V	DC 3.7 – 4.2V	DC 1.8V

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SECTION 3 : Test standard information

3.1 Requirements for compliance testing defined by the FCC

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

1 Specific Absorption Rate (SAR) is a measure of the rate of energy absorption due to exposure to an RF transmitting source (wireless portable device).

2 IEEE/ANSI Std. C95.1-1992 limits are used to determine compliance with FCC ET Docket 93-62.

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3.2 Procedure and result

No.	Item	Test Procedure	Limit	Remarks	Exclusion	Result
1	Human Exposure	FCC OET BULLETIN 65, SUPPLEMENT C	FCC47CFR 2.1093	SAR Measurement	N/A	Complied

Note: UL Japan, Inc. 's SAR Work Procedures QPM46 and QPM47

Result of Max. SAR value

GSM850

Max. SAR Measured : Head 0.475 W/kg
Body 1.35W/kg

PCS1900

Max. SAR Measured : Head 0.813 W/kg
Body 0.684W/kg

Bluetooth

Max. SAR Measured : Body 0.00037W/kg

<Simultaneous Procedure>

This EUT has the Bluetooth unlicensed transmitter.

Step1. GSM antenna is >5cm form Bluetooth antenna

Step2. Bluetooth power < 2PRef.

Step3. No standalone SAR

Step4. No simultaneous transmission SAR

However, BT stand-alone SAR(Body) was tested as reference DATA.

The maximum SAR value of EUT is calculated by adding maximum SAR values of GSM and Bluetooth as shown below:

Max. SAR value = Max. SAR value (GSM850) + Max. SAR value (Bluetooth)

Max. SAR Measured (GSM 850 + Bluetooth) 1.36W/kg

=1.35(from GSM850 body test) + 0.00037 (Bluetooth)

=1.36

Max. SAR value = Max. SAR value (PCS1900) + Max. SAR value (Bluetooth)

Max. SAR Measured (PCS1900 + Bluetooth) 0.685W/kg

=0.684(from PCS1900 body test) + 0.00037W/kg (Bluetooth)

=0.685

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3.3 Exposure limit

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

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.4	8.0	20.0

(B) Limits for General population/Uncontrolled Exposure (W/kg)

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.08	1.6	4.0

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

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

**NOTE:GENERAL POPULATION/UNCONTROLLED EXPOSURE
SPATIAL PEAK(averaged over any 1g of tissue) LIMIT
1.6 W/kg**

3.4 Test Location

*Shielded room for SAR testings

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3.5 Confirmation before SAR testing

Correlation of Output Power between EMC and SAR tests

It was checked that the antenna port power was correlated within 0~+5% (FCC requirements)

- Peak power at EMC test
EMC power was measured for EMC test sample (S/N:167).
- Peak power at SAR test
SAR power was measured for SAR test sample (S/N: 172).

The result is shown in Section 6.1.

3.6 Confirmation after SAR testing

It was checked that the power drift is within $\pm 5\%$ in the evaluation procedure of SAR testing.

The result is shown in APPENDIX 2.

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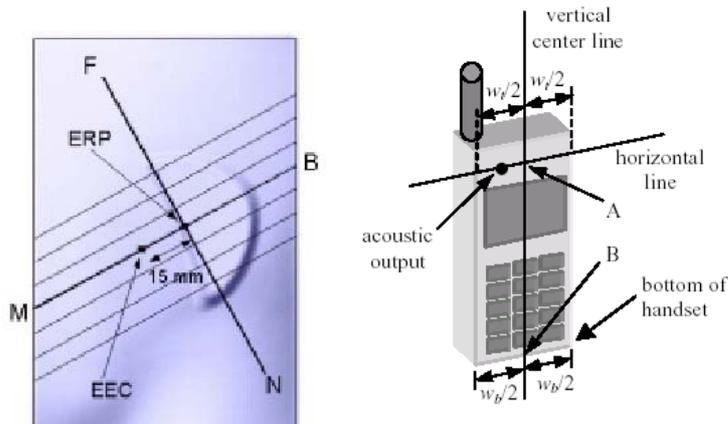
3.7 Description of the head test setup

According to the OET 65, and IEC62209-1 this EUT was tested on the “Cheek/Touch” and “Ear/Tilt” positions at the left head and right head section of the SAM phantom.

Initial ear position

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom.

The device should be positioned parallel to the “N-F” line defined along the base of the ear spacer that contains the “ear reference point”. The “test device reference point” is aligned to the “ear reference point” on the head phantom and the “vertical centerline” is aligned to the “phantom reference plane”.

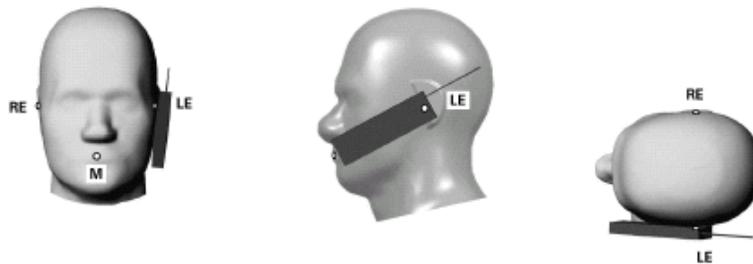


Cheek position

The device is brought toward the mouth of the head phantom by pivoting against the “ear reference point” or along the “N-F” line.

This test position is established:

- i) When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
- ii) (or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.



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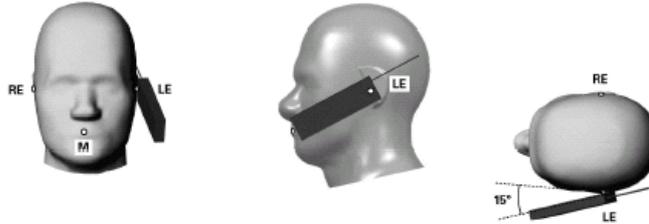
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Tilt position

If the earpiece of the handset is not in full contact with the phantom's ear spacer and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer. Otherwise the handset should be moved away from the cheek perpendicular to the line passes through both "ear reference points" for approximate 2-3 cm. While it is in this position, the handset is tilted away from the mouth with respect to the "test device reference point" by 15°. After the tilt, it is then moved back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.



<Antenna position>

The antenna of this EUT was built-in antenna.

3.8 Method of measurement (Head SAR)

Step1. The searching for the worst position

Step2. The changing to the Low and High channels

The test was performed at the worst position of Step1.

3.9 Description of the Body-worn setup

The tests were performed in the EUT with the earphone. (Refer to the Appendix1)

(1) Front (15mm) :

The measurement separated 15mm distance between the front face of EUT and flat section of SAM Twin Phantom.

(2) Back (15mm) :

The measurement separated 15mm distance between the back face of EUT and flat section of SAM Twin Phantom.

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3.10 Method of measurement (Body-worn SAR)

GSM mode

- Step1. The searching for the worst position
- Step2. The changing to the Low and High channels
The test was performed at the worst position of Step1.

GPRS mode

- Step3. The searching for the worst position
- Step4. The changing to the Low and High channels
The test was performed at the worst position of Step3.

EGPRS mode

- Step5. The comparison between GMSK and 8PSK of EGPRSmode
- Step6. The searching for the worst position.
The test was performed at the worst modulation
- Step7. The changing to the Low and High channels
The test was performed at the worst position of Step6.

<Reference>

Bluetooth mode

- Step1. The comparison between BDR(GFSK) and EDR(8DPSK) of BTmode
- Step2. The searching for the worst position.
The test was performed at the worst modulation
- Step3. The changing to the Low and High channels
The test was performed at the worst position of Step2.

SECTION 4 : Operation of E.U.T. during testing

4.1 Operating modes

A communication link was set up with the Wireless Communications Test Set from Agilent.
The EUT was command to operate at maximum transmit power.
(Maximum transmit power :GSM850 <Power level : 5> / PCS1900 <Power level : 0>)
The frequency band and the modulation used in this test are shown as a following.

1. GSM850 (Power level 5)

Frequency band : 824.2MHz – 848.8MHz
Channel : 128ch(824.2MHz)
 190ch(836.6MHz)
 251ch(848.8MHz)
Modulation : GSM,GPRS,EGPRS(GMSK),EGPRS(8PSK)
Crest factor : 8.3(GSM),4.2(GPRS,EGPRS)

2. PCS1900 (Power level 0)

Frequency band : 1850.2MHz – 1909.8MHz
Channel : 512ch(1850.2MHz)
 661ch(1880.0MHz)
 810ch(1909.8MHz)
Modulation : GSM,GPRS, EGPRS(GMSK),EGPRS(8PSK)
Crest factor : 8.3(GSM),4.2(GPRS,EGPRS)

*The detail of base-station simulator

Item : Wireless Communications Test Set
Model Number : E5515C
Serial Number : GB47050683
Manufacture : Agilent

<Reference DATA>

3. Bluetooth

Frequency band : 2402MHz – 2480MHz
Channel : 1ch(2402MHz)
 41ch(2441MHz)
 79ch(2480MHz)
Modulation : GFSK (BDR),8DPSK(EDR)
Crest factor : 1

SECTION 5 : Test surrounding

5.1 Measurement uncertainty

The uncertainty budget has been determined for the DASY4 measurement system according to the SPEAG documents[6][7] and is given in the following Table.

Error Description	Uncertainty value ± %	Probability distribution	divisor	(ci) 1g	Standard Uncertainty (1g)	vi or v _{eff}
Measurement System						
Probe calibration	±6.8	Normal	1	1	±6.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	(1-c _p) ^{1/2}	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	(c _p) ^{1/2}	±3.9	∞
Boundary effects	±2.0	Rectangular	√3	1	±1.2	∞
Probe linearity	±4.7	Rectangular	√3	1	±2.7	∞
Detection limit	±1.0	Rectangular	√3	1	±0.6	∞
Readout electronics	±0.3	Normal	1	1	±0.3	∞
Response time	±0.8	Rectangular	√3	1	±0.5	∞
Integration time	±2.6	Rectangular	√3	1	±1.5	∞
RF ambient Noise	±3.0	Rectangular	√3	1	±1.7	∞
RF ambient Reflections	±3.0	Rectangular	√3	1	±1.7	∞
Probe Positioner	±0.8	Rectangular	√3	1	±0.5	∞
Probe positioning	±9.9	Rectangular	√3	1	±5.7	∞
Max.SAR Eval.	±4.0	Rectangular	√3	1	±2.3	∞
Test Sample Related						
Device positioning	±2.9	Normal	1	1	±2.9	23
Device holder uncertainty	±3.6	Normal	1	1	±3.6	4
Power drift	±5.0	Rectangular	√3	1	±2.9	∞
Phantom and Setup						
Phantom uncertainty	±4.0	Rectangular	√3	1	±2.3	∞
Liquid conductivity (target)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid conductivity (meas.)	±5.0	Rectangular	1	0.64	±3.2	∞
Liquid permittivity (target)	±5.0	Rectangular	√3	0.6	±1.7	∞
Liquid permittivity (meas.)	±5.0	Rectangular	1	0.6	±3.0	∞
Combined Standard Uncertainty						
					±13.453	
Expanded Uncertainty (k=2)						
					±26.9	

SECTION 6 : Confirmation before testing**6.1 Output Power Measurement results****EMC Power****<GSM 850>**

GSM850 GSM mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	7.80	20.00	4.60	32.40	1737.8
Mid	836.6	8.00	20.00	4.60	32.60	1819.7
High	848.8	8.00	20.00	4.60	32.60	1819.7
GSM850 EGPRS (GMSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	7.80	20.00	4.60	32.40	1737.8
Mid	836.6	7.90	20.00	4.60	32.50	1778.3
High	848.8	7.90	20.00	4.60	32.50	1778.3

<PCS1900>

PCS1900 GSM mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	4.60	20.00	4.90	29.50	891.3
Mid	1880.0	4.60	20.00	4.90	29.50	891.3
High	1909.8	4.80	20.00	5.00	29.80	955.0

PCS1900 EGPRS(GMSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	4.70	20.00	4.90	29.60	912.0
Mid	1880.0	4.60	20.00	4.90	29.50	891.3
High	1909.8	4.20	20.00	5.00	29.20	831.8

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<Bluetooth>

DH5						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	2402.0	-13.88	10.09	1.40	-2.39	0.58
Mid	2441.0	-14.76	10.09	1.41	-3.26	0.47
High	2480.0	-15.88	10.09	1.42	-4.37	0.37

3DH5						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	2402.0	-5.04	0.00	4.80	-0.24	0.9
Mid	2442.0	-6.30	0.00	4.80	-1.50	0.7
High	2480.0	-8.07	0.00	4.80	-3.27	0.5

Sample Calculation:

Result = Reading + Cable Loss (client's cable)+Power Divider Loss + Attenuator Loss

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SAR Power
<GSM 850 mode>

GSM850 GSM mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	6.16	19.94	6.41	32.51	1784.0
Mid	836.6	6.32	19.94	6.42	32.68	1855.2
High	848.8	6.42	19.94	6.42	32.78	1898.5

GSM850 GPRS mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	6.20	19.94	6.41	32.55	1800.5
Mid	836.6	6.40	19.94	6.42	32.76	1889.7
High	848.8	6.42	19.94	6.42	32.78	1898.5

GSM850 EGPRS(GMSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	6.25	19.94	6.41	32.60	1821.4
Mid	836.6	6.33	19.94	6.42	32.69	1859.5
High	848.8	6.31	19.94	6.42	32.67	1851.0

GSM850 EGPRS(8PSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable + Divider loss [dB]	Result [dBm]	Convert [mW]
Low	824.2	3.12	19.94	6.41	29.47	885.9
Mid	836.6	3.01	19.94	6.42	29.37	865.8
High	848.8	2.84	19.94	6.42	29.20	832.5

Sample Calculation:

Result = Reading + Cable Loss (client's cable)+Power Divider Loss + Attenuator Loss

<PCS 1900>

PCS1900 GSM mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	3.10	19.94	6.66	29.70	932.4
Mid	1880.0	3.09	19.94	6.66	29.69	930.3
High	1909.8	3.21	19.94	6.68	29.83	960.7

PCS1900 GPRS mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	3.17	19.94	6.66	29.77	947.5
Mid	1880.0	2.98	19.94	6.66	29.58	907.0
High	1909.8	2.47	19.94	6.68	29.09	810.2

PCS1900 EGPRS(GMSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	3.14	19.94	6.66	29.74	941.0
Mid	1880.0	2.97	19.94	6.66	29.57	904.9
High	1909.8	2.66	19.94	6.68	29.28	846.4

PCS1900 EGPRS(8PSK) mode						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	1850.2	0.62	19.94	6.66	27.22	526.7
Mid	1880.0	0.43	19.94	6.66	27.03	504.2
High	1909.8	0.38	19.94	6.68	27.00	500.7

Sample Calculation:

Result = Reading + Cable Loss (client's cable) + Attenuator Loss

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Reference DATA
<Bluetooth>

DH5						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	2402.0	-13.85	10.09	1.40	-2.36	0.58
Mid	2441.0	-14.65	10.09	1.41	-3.15	0.48
High	2480.0	-15.76	10.09	1.42	-4.25	0.38

3DH5						
Ch	Frequency [MHz]	P/M Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Convert [mW]
Low	2402.0	-11.73	10.09	1.40	-0.24	0.9
Mid	2442.0	-12.97	10.09	1.41	-1.47	0.7
High	2480.0	-14.77	10.09	1.42	-3.26	0.5

Sample Calculation:

Result = Reading + Cable Loss (client's cable)+Power Divider Loss + Attenuator Loss

SECTION 7 : Measurement results

7.1 Head GSM 850MHz SAR

Liquid Depth (cm) : **15.0** Model : **PV210**
Parameters : $\epsilon_r = 42.3, \sigma = 0.91$ Serial No. : **172**
Ambient temperature (deg.c.) : **23.5** Modulation : **GSM**
Relative Humidity (%) : **35** Crest factor : **8.3**
Date : **March 6, 2008** Measured By : **Miyo Kishimoto**

HEAD SAR MEASUREMENT RESULTS								
Frequency		Modulation	Phantom Section	EUT Set-up Conditions		Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Before	After	Maximum of multi-peak
Step1. Position search								
190	836.6	GSM	Left	Fixed	Cheek	22.0	22.0	0.380
190	836.6	GSM	Left	Fixed	Tilt	22.0	22.0	0.222
190	836.6	GSM	Right	Fixed	Cheek	22.0	22.0	0.319
190	836.6	GSM	Right	Fixed	Tilt	22.0	22.0	0.190
Step 2. Change to the Low and High channels								
128	824.2	GSM	Left	Fixed	Cheek	22.0	22.0	0.281
251	848.8	GSM	Left	Fixed	Cheek	22.0	22.0	0.475
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population						Head SAR: 1.6 W/kg (averaged over 1 gram)		

*See Appendix 3 for measurement data plots.

7.2 Body-worn GSM 850MHz SAR

Liquid Depth (cm)	: 15.0	Model	: PV210
Parameters	: $\epsilon_r = 53.0$ $\sigma = 0.98$	Serial No.	: 172
Ambient temperature (deg.c.)	: 23.5	Modulation	: GSM
Relative Humidity (%)	: 41	Crest factor	: 8.3 or 4.2
Date	: March 5, 2008	Measured By	: Miyo Kishimoto Hisayoshi Sato

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g)
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak [W/kg]
Step 1. Search for the worst position									
190	836.6	GSM	Flat	Fixed	Front	15	21.0	21.0	0.354
190	836.6	GSM	Flat	Fixed	Back	15	21.0	21.0	0.701
Step 2. Change to the Low and High channels									
128	824.2	GSM	Flat	Fixed	Back	15	21.0	21.0	0.580
251	848.8	GSM	Flat	Fixed	Back	15	21.0	21.0	0.844

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g)
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak [W/kg]
Step 3. Search for the worst position									
190	836.6	GPRS (GMSK)	Flat	Fixed	Front	15	21.0	21.0	0.635
190	836.6	GPRS (GMSK)	Flat	Fixed	Back	15	21.0	21.0	1.23
Step 4. Change to the Low and High channels									
128	824.2	GPRS (GMSK)	Flat	Fixed	Back	15	21.0	21.0	0.956
251	848.8	GPRS (GMSK)	Flat	Fixed	Back	15	21.0	21.0	1.34

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g)
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak [W/kg]
Step 5. Search for the worst modulation									
190	836.6	EGPRS (GMSK)	Flat	Fixed	Back	15	21.3	21.3	1.22
190	836.6	EGPRS (8PSK)	Flat	Fixed	Back	15	21.3	21.3	0.342
Step 6. Search for the worst position									
190	836.6	EGPRS (GMSK)	Flat	Fixed	Front	15	21.4	21.4	0.667
Step 7. Change to the Low and High channels									
128	824.2	EGPRS (GMSK)	Flat	Fixed	Back	15	21.4	21.4	1.05
251	848.8	EGPRS (GMSK)	Flat	Fixed	Back	15	21.4	21.4	1.35

* See Appendix 3 for measurement data plots.

7.4 Body-worn PCS 1900MHz SAR

Liquid Depth (cm) : 15.0 Model : PV210
Parameters : $\epsilon_r = 51.9$, $\sigma = 1.56$ Serial No. : 172
Ambient temperature (deg.c) : 23.7 Modulation : GSM,GPRS,EGPRS
Relative Humidity (%) : 40 Crest factor : 8.3 or 4.2
Date : March 6, 2008 Measured By : Hisayoshi Sato

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Step 1. Search for the worst position									
661	1880	GSM	Flat	Fixed	Front	15	22.3	22.3	0.188
661	1880	GSM	Flat	Fixed	Back	15	22.3	22.3	0.281
Step 2. Change to the Low and High channels									
512	1850.2	GSM	Flat	Fixed	Back	15	22.3	22.3	0.328
810	1909.8	GSM	Flat	Fixed	Back	15	22.3	22.3	0.230

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Step 3. Search for the worst position									
661	1880	GPRS (GMSK)	Flat	Fixed	Front	15	22.2	22.2	0.339
661	1880	GPRS (GMSK)	Flat	Fixed	Back	15	22.2	22.2	0.552
Step 4. Change to the Low and High channels									
512	1850.2	GPRS (GMSK)	Flat	Fixed	Back	15	22.3	22.3	0.628
810	1909.8	GPRS (GMSK)	Flat	Fixed	Back	15	22.3	22.3	0.501

BODY SAR MEASUREMENT RESULTS									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Step 5. Search for the worst modulation									
661	1880	EGPRS (GMSK)	Flat	Fixed	Back	15	22.4	22.4	0.613
661	1880	EGPRS (8PSK)	Flat	Fixed	Back	15	22.4	22.4	0.192
Step 6. Search for the worst position									
661	1880	EGPRS (GMSK)	Flat	Fixed	Front	15	22.3	22.3	0.362
Step 7. Change to the Low and High channels									
512	1850.2	EGPRS (GMSK)	Flat	Fixed	Back	15	22.3	22.3	0.684
810	1909.8	EGPRS (GMSK)	Flat	Fixed	Back	15	22.3	22.3	0.566

* See Appendix 3 for measurement data plots.

7.5 Reference DATA of Body-worn Bluetooth 2450MHz SAR

Liquid Depth (cm) : 15.0 Model : PV210
Parameters : $\epsilon_r = 50.2, \sigma = 1.95$ Serial No. : 167
Ambient temperature (deg.c.) : 24.5 Modulation : GFSK(BDR),8DPSK(EDR)
Relative Humidity (%) : 36 Crest factor : 1
Date : March 10, 2008 Measured By : Miyo Kishimoto

BODY SAR MEASUREMENT RESULTS									
Frequency			Modulation	Phantom Section	EUT Set-up Conditions		Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Mode	Channel	[MHz]			Antenna	Position	Before	After	Maximum value of multi-peak
BT	Step 1. Search for the modulation								
	41	2441.0	GFSK	Flat	Fixed	Rear	24.5	24.5	0.0000614
	41	2441.0	GFSK	Flat	Fixed	Rear	24.5	24.5	0.0000122
	Step 2. Search for the worst position								
	41	2441.0	GFSK	Flat	Fixed	Front	24.5	24.5	0.0000613
	Step 3. Change to the Low and High channels								
	1	2402.0	GFSK	Flat	Fixed	Rear	24.5	24.5	0.0000307
79	2480.0	GFSK	Flat	Fixed	Rear	24.5	24.5	0.00037	