SAR TEST REPORT

Test Report No. : 29CE0014-HO-01-C-R1

Applicant	:	**FURUNO SYSTEMS CO., LTD.**
Type of Equipment	:	**Handy Terminal**
Model No.	:	**PI-13700-W**
FCC ID	:	**T87SS25BGXXT**
Test regulation	:	**FCC47CFR 2.1093** **FCC OET BULLETIN 65, SUPPLEMENT C**
Test Result	:	**Complied**
Max. SAR Value	:	**0.573W/kg (Body, 2462MHz)**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Date of test: December 17, 2008

Tested by: H. Sato
Hisayoshi Sato
EMC Services

Approved by : T. Maeno
Tetsuo Maeno
Site Manager of EMC Services

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SECTION 1: Customer information

Company Name	:	FURUNO SYSTEMS CO., LTD.
Address	:	Kobe Kimec Center Bldg., 1-5-2 Minamimachi, Minatojima Chuo-ku, Kobe, Hyogo, 650-0047 Japan
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Contact Person	:	Yoshihisa Tashita

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

2.1 Identification of E.U.T.

Type of Equipment		:	Handy Terminal
Model No.		:	PI-13700-W PI-13703-W (Variant model)
Serial No.		:	7059-1899 (PI-13700-W) 7060-0320 (PI-13703-W)
Receipt Date of Sample		:	December 12, 2008
Rating		:	Li-ion Battery DC3.7V 1950mAh
Battery :	Model Name	:	BP-13000-W
	Product Name	:	Li-ion Battery
	Rating	:	DC3.7V/1950mAh
	Manufacture	:	FURUNO SYSTEMS CO., LTD.
Option Battery		:	N/A
Accessories		:	Hand Strap
Size		:	W:60mm D:43mm H:172mm(PI-13700-W) W:60mm D:38mm H:172mm(PI-13703-W)
Country of Mass-production		:	Japan
Condition of EUT		:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT		:	No Modification by the test lab

2.2 Product Description

Model No: PI-13700-W (referred to as the EUT in this report) is the Handy Terminal.

Feature of EUT: Barcode scanner built in the head of the body reads a wide variety of barcodes.
The compact body houses a TFT-LCD panel, laser scanner, Bluetooth and 802.11b/g transceiver.
The EUT contains IEEE802.11b/g and Bluetooth modules.
Those modules do not transmit simultaneously.

*The EUT (PI-13700-W) has a variant model (PI-13703-W). The differentia of them is shown in the following table.

Model	Scanner part
PI-13700-W	Visible semiconductor laser
PI-13703-W	CMOS image sensor

For confirming influence for radio part by their differentia, specific tests were performed and data were attached in this test report.

Clock frequencies in the system : 100MHz (Bus), 200MHz (CPU(INT)), 16MHz (BT), 40MHz (WLAN)

Radio specification / Wireless LAN (IEEE802.11b/g)

Equipment Type	Transceiver
Frequency of Operation	2412-2462MHz
Bandwidth & Channel spacing	18MHz, 5MHz/CH
Type of Modulation	DSSS&OFDM
Antenna Type	Inverted F Antenna: EX02-0923-00
Antenna Connector Type	Hirose U.FL-R-SMT(01)
Antenna Gain	1.35dBi
Operating frequency	Crystal
Operating Voltage (Inner)	DC3.3V

Radio specification / Bluetooth (FCC ID: RYYEYXFDC)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Bandwidth & Channel spacing	1MHz & 1MHz
Type of Modulation	FHSS
Antenna Type	PWB Pattern Antenna
Antenna Connector Type	N/A
Antenna Gain	2dBi
Operating frequency	Crystal
Operating Voltage (Inner)	DC3.3V

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.

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 Max.SAR = 0.573 W/kg
Note: UL Japan, Inc. 's SAR Work Procedures QPM46 and QPM47						

Result of Max. SAR value

Max. SAR Value: 0.573W/kg (Body, 2462MHz)

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 (WLAN IEEE802.11b/g)
It was checked that the antenna port power was correlated within 0~+5% (FCC requirements)
The result is shown in Section 6.1.

- **Peak power at EMC test (December 12, 2008)**
  EMC power was measured for SAR test sample (S/N: 7059-1899).

- **Peak power at SAR test (December 17, 2008)**
  SAR power was measured for SAR test sample (S/N: 7059-1899).

3.6 Confirmation after SAR testing

It was checked that the power drift [W] is within ±5%.The verification of power drift during the SAR test is that DASY4 system calculates the power drift by measureing the e-filed at the same location at beginning and the end of the scan measurement for each test position.

DASY4 system calucation Power drift value[dB] =20log(Ea)/(Eb)
Before SAR testing : Eb[V/m]
After SAR testing : Ea[V/m]

Limit of power drift[W] =+/-5%
X[dB]=10log[P]=10log(1.05/1)=10log(1.05)-10log(1)=0.212dB

from E-filed relations with power.
S=E*H=E^2/ η =P/4 π r^2 (η : Space impedance)
P=E^2*4 π r^2/η
Therefore, The correlation of power and the E-filed
XdB=10log(P)=10log(E)^2=20log(E)

From the above mentioned,
The calculated power drift of DASY4 System must be the less than +/-0.212dB.

3.7 Measurement procedure

IEEE 802.11b(Radiated power is always monitored by Spectrum Analyzer.)
The 11b (DSSS) mode test was performed on the CCK[11Mbps] modulation, because it was the highest average power and the highest data rate.

Step1. The searching for the worst position

Step2. Change to the Low and High channels
This test was performed at the worst position of Step 1.

IEEE 802.11g (Radiated power is always monitored by Spectrum Analyzer.)

Step3. The searching for the worst modulation
The data rate in the higher average power* of each modulation was decided, then the worst modulation was searched in the SAR testing.

Step4. The searching for the worst position
This test was performed at the worst modulation of Step3.

Step5. The changing to the Low and High channels
This test was performed at the worst condition of Step 4.

*Refer to Section 6.1.3.

Change distance between EUT and 2mm Flat phantom ERI4.0
(Radiated power is always monitored by Spectrum Analyzer.)

Step6. Change separation
The measurement was performed with the distance 5mm,10mm and 15mm to check if the shortest distance may not have the worst value at the conditions of the highest SAR value.

Change to the crest factor(PAR)

Step7. Change to the crest factor(PAR)
This results was corrected in the worst SAR(11b and 11g) and maximum PAR mode.

Tested the variant model: PI-13703-W (reference data)

Step8. Tested the worst mode
This test was performed at the worst mode of Step 1 to Step 6.

3.8 Test setup of EUT

When users operate or carry the EUT, it could be considered to be touched or get close to their bodies. In order to assume this situation, we performed the test at the following positions. Please refer to "APPENDIX 1" for more details.

(1) Front:
The test was performed in touch with Front surface of the EUT to the flat section of 2mm Flat phantom ERI4.0.

(2) Right Side :
The test was performed in touch with Right Side surface of the EUT to the flat section of 2mm Flat phantom ERI4.0.

(3) Left Side :
The test was performed in touch with Left Side surface of the EUT to the flat section of 2mm Flat phantom ERI4.0.

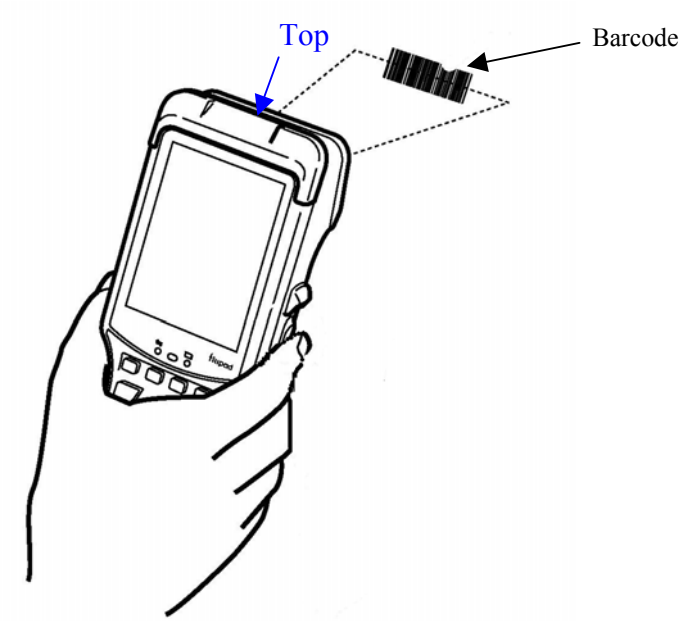
(4) Rear :
The test was performed in touch with Rear surface of the EUT to the flat section of 2mm Flat phantom ERI4.0.

(5) Front (5mm) :
The measurement opened 5mm distance between the EUT and flat section of 2mm Flat phantom ERI4.0.

(6) Front (10mm) :
The measurement opened 10mm distance between the EUT and flat section of 2mm Flat phantom ERI4.0.

(7) Front (15mm) :
The measurement opened 15mm distance between the EUT and flat section of 2mm Flat phantom ERI4.0.

*This EUT is used as a handheld device as is shown in the following figure.
Therefore, top position of EUT is pointed toward the barcode to be scanned and cannot get close to the human body.



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

4.1 Operating modes for SAR testing

4.1.1 Setting of EUT

This EUT has IEEE.802.11b/g continuous transmitting modes.
The frequency band and the modulation used in the testing of IEEE.802.11b/g is shown as a following.

1. IEEE 802.11b mode
Tx frequency band : 2412-2462MHz
Channel : 1ch(2412MHz),6ch(2437MHz),11ch(2462MHz)
Modulation : DSSS (CCK)
Crest factor : 1(See **Note.1)**, 1.6(See **Note.2**)

2. IEEE 802.11g mode
Tx frequency band : 2412-2462MHz
Channel : 1ch(2412MHz),6ch(2437MHz),11ch(2462MHz)
Modulation : OFDM (BPSK, QPSK, 16QAM, 64QAM)
Crest factor : 1(See **Note.1)**, 7.3 (See**Note.2**), 6.1(See **Note.2**)

Note1: Duty factor and crest factor
The all SAR testing was used crest factor for duty cycle.
For all modulations, duty factor is 100 % in every time.
<Result of measurement>

Modulation	CCK	BPSK	QPSK	16QAM	64QAM
Duty factor [%]	100	100	100	100	100
Crest factor*1	1	1	1	1	1

*1 Crest factor = 100/ Duty factor

Note2: Details of crest factor (PAR)
The data of worst SAR result and maximum PAR was used for the following PAR value.

Modulation (data rate)	Frequency[MHz]	PK Power[mW]	AVG Power[mW]	Crest factor (PAR)*2	NOTE
CCK (11Mbps)	2437	63.97	38.02	1.7	
BPSK (6Mbps)	2437	98.86	15.28	6.5	
QPSK (18Mbps)	2437	98.63	15.21	6.5	
16QAM (36Mbps)	2437	98.17	14.76	6.7	
64QAM (48Mbps)	2437	96.16	14.86	6.5	
CCK (11Mbps)	2412	46.24	27.16	1.7	
16QAM (36Mbps)	2412	84.14	11.59	**7.3**	Maximum PAR
CCK (11Mbps)	2462	61.52	37.33	1.6	Worst SAR result (11b)
16QAM (36Mbps)	2462	98.4	16.22	6.1	Worst SAR result (11g)

*2 Crest factor (PAR) = PK power / AVG power

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 veff
Measurement System						
Probe calibration	±6.8	Normal	1	1	±6.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	$(1\text{-cp})^{1/2}$	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	$(cp)^{1/2}$	±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	21
Device holder uncertainty	±3.6	Normal	1	1	±3.6	7
Power drift	±5.0	Rectangular	√3	1	±5.8	∞
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					**±14.360**	
Expanded Uncertainty (k=2)					**±28.7**	

SECTION 6 : Confirmation before testing

6.1 Correlation of EMC power and SAR power

6.1.1 EMC power

This data is reference data of EMC test(Report No. 29CE0014-HO-01-A-R1).
Date of test: December 12, 2008

Peak power

IEEE802.11b , 11Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-4.09	0.80	19.94	16.65	46.24
Mid	2437.0	-2.68	0.80	19.94	18.06	63.97
High	2462.0	-2.85	0.80	19.94	17.89	61.52

IEEE802.11g , 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-1.40	0.80	19.94	19.34	85.90
Mid	2437.0	-0.79	0.80	19.94	19.95	98.86
High	2462.0	-0.72	0.80	19.94	20.02	100.46

IEEE802.11g , 36Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-1.49	0.80	19.94	19.25	84.14
Mid	2437.0	-0.82	0.80	19.94	19.92	98.17
High	2462.0	-0.81	0.80	19.94	19.93	98.40

Average power

IEEE802.11b , 11Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-6.40	0.80	19.94	14.34	27.16
Mid	2437.0	-4.94	0.80	19.94	15.80	38.02
High	2462.0	-5.02	0.80	19.94	15.72	37.33

IEEE802.11g , 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-9.75	0.80	19.94	10.99	12.56
Mid	2437.0	-8.90	0.80	19.94	11.84	15.28
High	2462.0	-8.38	0.80	19.94	12.36	17.22

IEEE802.11g , 36Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	-10.10	0.80	19.94	10.64	11.59
Mid	2437.0	-9.05	0.80	19.94	11.69	14.76
High	2462.0	-8.64	0.80	19.94	12.10	16.22

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

6.1.2 SAR power

Date of test: December 17, 2008

Peak power

IEEE802.11b , 11Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-4.07	0.80	19.94	16.67	46.45
Mid	2437.0	-2.64	0.80	19.94	18.10	64.57
High	2462.0	-2.83	0.80	19.94	17.91	61.80

IEEE802.11g , 6Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-1.36	0.80	19.94	19.38	86.70
Mid	2437.0	-0.74	0.80	19.94	20.00	100.00
High	2462.0	-0.70	0.80	19.94	20.04	100.93

IEEE802.11g , 36Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-1.44	0.80	19.94	19.30	85.11
Mid	2437.0	-0.79	0.80	19.94	19.95	98.86
High	2462.0	-0.76	0.80	19.94	19.98	99.54

Average powe

IEEE802.11b , 11Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-6.35	0.80	19.94	14.39	27.48
Mid	2437.0	-4.90	0.80	19.94	15.84	38.37
High	2462.0	-4.99	0.80	19.94	15.75	37.58

IEEE802.11g , 6Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-9.71	0.80	19.94	11.03	12.68
Mid	2437.0	-8.83	0.80	19.94	11.91	15.52
High	2462.0	-8.32	0.80	19.94	12.42	17.46

IEEE802.11g , 36Mbps

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	2412.0	-9.91	0.80	19.94	10.83	12.11
Mid	2437.0	-9.02	0.80	19.94	11.72	14.86
High	2462.0	-8.59	0.80	19.94	12.15	16.41

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

6.1.3 Reference data of SAR test (Data rate determination)

Date of test: December 12, 2008

Peak power

[IEEE802.11b] Rate check

Modulation	Data rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
DBPSK	1	2437.0	-2.79	0.80	19.94	17.95	62.37
DQPSK	2	2437.0	-2.74	0.80	19.94	18.00	63.10
CCK	5.5	2437.0	-3.30	0.80	19.94	17.44	55.46
	11	2437.0	-2.68	0.80	19.94	18.06	63.97

[IEEE802.11g] Rate check

Modulation	Data rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
BPSK	6	2437.0	-0.79	0.80	19.94	19.95	98.86
	9	2437.0	-1.05	0.80	19.94	19.69	93.11
QPSK	12	2437.0	-0.80	0.80	19.94	19.94	98.63
	18	2437.0	-1.19	0.80	19.94	19.55	90.16
16QAM	24	2437.0	-0.90	0.80	19.94	19.84	96.38
	36	2437.0	-0.82	0.80	19.94	19.92	98.17
64QAM	48	2437.0	-0.91	0.80	19.94	19.83	96.16
	54	2437.0	-0.93	0.80	19.94	19.81	95.72

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

Average power

[IEEE802.11b] Rate check

Modulation	Data rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
DBPSK	1	2437.0	-5.00	0.80	19.94	15.74	37.50
DQPSK	2	2437.0	-5.01	0.80	19.94	15.73	37.41
CCK	5.5	2437.0	-5.11	0.80	19.94	15.63	36.56
	11	2437.0	-4.94	0.80	19.94	15.80	38.02

[IEEE802.11g] Rate check

Modulation	Data rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
BPSK	6	2437.0	-8.90	0.80	19.94	11.84	15.28
	9	2437.0	-8.94	0.80	19.94	11.80	15.14
QPSK	12	2437.0	-8.92	0.80	19.94	11.82	15.21
	18	2437.0	-8.94	0.80	19.94	11.80	15.14
16QAM	24	2437.0	-9.07	0.80	19.94	11.67	14.69
	36	2437.0	-9.05	0.80	19.94	11.69	14.76
64QAM	48	2437.0	-9.02	0.80	19.94	11.72	14.86
	54	2437.0	-9.04	0.80	19.94	11.70	14.79

Sample Calculation:
Result = Reading + Cable Loss + Attenuator

SECTION 7 : Measurement results

7.1 Body SAR 2450MHz

Liquid Depth (cm)	: **15.0**	Model	: **PI-13700-W**
Parameters	: **εr =50.1, σ =1.98**	Serial No.	: **7059-1899**
Ambient temperature(deg.c.)	: **24.5**	Modulation	: **DSSS**
Relative Humidity (%)	: **32**	Crest factor	: **See to section 4.1**
Date	: **December 17, 2008**	Measured By	: **Hisayoshi Sato**

BODY SAR MEASUREMENT RESULTS

Mode	Frequency		Modulation	Phantom Section	EUT Set-up Conditions		Liquid Temp.[deg.c]		SAR(1g) [W/kg]
	Channel	[MHz]			Position	Separation [mm]	Before	After	Maximum of multi-peak
11b	**Step 1 Search for the worst position**								
	6	2437	CCK(11Mbps)	Flat	Front	0	24.0	24.0	**0.380**
	6	2437	CCK(11Mbps)	Flat	Right side	0	24.1	24.1	**0.042**
	6	2437	CCK(11Mbps)	Flat	Left side	0	24.1	24.1	**0.129**
	6	2437	CCK(11Mbps)	Flat	Rear	0	24.0	24.0	**0.054**
	Step 2 Change to the Low and High channels								
	1	2412	CCK(11Mbps)	Flat	Front	0	23.9	23.9	**0.337**
	11	2462	CCK(11Mbps)	Flat	Front	0	23.9	23.9	**0.570**
11g	**Step 3. Search for the worst modulation**								
	6	2437	BPSK(6Mbps)	Flat	Front	0	24.0	24.0	**0.217**
	6	2437	QPSK(12Mbps)	Flat	Front	0	24.1	24.1	**0.217**
	6	2437	16QAM(36Mbps)	Flat	Front	0	24.1	24.1	**0.226**
	6	2437	64QAM(48Mbps)	Flat	Front	0	24.0	24.0	**0.216**
	Step 4. Search for the worst position								
	6	2437	16QAM(36Mbps)	Flat	Right side	0	24.1	24.1	**0.026**
	6	2437	16QAM(36Mbps)	Flat	Left side	0	24.1	24.1	**0.085**
	6	2437	16QAM(36Mbps)	Flat	Rear	0	24.0	24.0	**0.042**
	Step 5 Change to the Low and High channels								
	1	2412	16QAM(36Mbps)	Flat	Front	0	23.9	23.9	**0.144**
	11	2462	16QAM(36Mbps)	Flat	Front	0	23.9	23.9	**0.267**
11b	**Step 6. Change separation**								
	11	2462	CCK(11Mbps)	Flat	Front	5	24.0	24.0	**0.340**
	11	2462	CCK(11Mbps)	Flat	Front	10	24.1	24.1	**0.204**
	11	2462	CCK(11Mbps)	Flat	Front	15	24.0	24.0	**0.099**
11b/g	**Step 7. Change to the Crest factor (PAR)**								
	11	2462	CCK(11Mbps)	Flat	Front	0	23.9	23.9	**0.573**
	1	2412	16QAM(36Mbps)	Flat	Front	0	23.9	23.9	**0.146**
	11	2462	16QAM(36Mbps)	Flat	Front	0	23.9	23.9	**0.272**
FCC47CFR 2.1093 Spatial Peak Uncontrolled Exposure / General Population									**Body SAR: 1.6 W/kg (averaged over 1 gram)**

7.2 Body SAR 2450MHz (reference data of variant model: PI-13703-W)

Liquid Depth (cm)	: **15.0**	Model	: **PI-13703-W**
Parameters	: **εr =50.1, σ =1.98**	Serial No.	: **7060-0320**
Ambient temperature(deg.c.)	: **24.5**	Modulation	: **DSSS**
Relative Humidity (%)	: **32**	Crest factor	: **See to section 4.1**
Date	: **December 17, 2008**	Measured By	: **Hisayoshi Sato**

BODY SAR MEASUREMENT RESULTS									
Mode	Frequency		Modulation	Phantom Section	EUT Set-up Conditions		Liquid Temp.[deg.c]		SAR(1g) [W/kg]
	Channel	[MHz]			Position	Separation [mm]	Before	After	Maximum of multi-peak
11b	**Step 8 Tested the worst mode**								
	11	2462	CCK(11Mbps)	Flat	Front	0	23.9	23.9	**0.458**
FCC47CFR 2.1093 Spatial Peak Uncontrolled Exposure / General Population									**Body SAR: 1.6 W/kg (averaged over 1 gram)**