SAR TEST REPORT

Test Report No. : 27DE0137-HO-D-1

Applicant	:	**DENSO WAVE INCORPORATED**
Type of Equipment	:	**Barcode Handy Terminal**
Model No.	:	**BHT-470BWB-CE**
FCC ID	:	**PZWBHT400SLBWB**
Test standard	:	**FCC47CFR 2.1093** **FCC OET Bulletin 65, Supplement C**
Test Result	:	**Complied**
Max. SAR Measured(IEEE802.11b/g)	:	**0.042W/kg (2462MHz)**
Bluetooth	:	**0.011 W/kg (2441MHz)**
Colocation evaluation		
Wireless LAN (11b/g) + Bluetooth	:	**0.053W/kg**

1. This test report shall not be reproduced except full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above standard. We hereby certify that the data contain a true representation of the SAR profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test : November 25,2006 / February 14 - 15, 2007

Tested by :

Miyo Ikuta
EMC Services

Approved by :

Tetsuo Maeno
Site Manager of EMC Services

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address, http://ulapex.jp/emc/nvlap.htm

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SECTION 1: Client information

Company Name	:	DENSO WAVE INCORPORATED
Address	:	1-1 Showa-cho Kariya-shi Aichi, 448-8661 Japan

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

2.1 Identification of E.U.T.

Type of Equipment	:	Barcode Handy Terminal
Model No.	:	BHT-470BWB-CE
Serial No.	:	5496310346600007
Country of Manufacture	:	Japan
Rating	:	DC3.7V (Li-ion Battery)
Battery	:	Model Name : BT-20L Manufacture : DENSO WAVE Option Battery : N/A
Accessaries	:	N/A
Size	:	W78* L224*D53 mm
Receipt Date of Sample	:	November 16, 2006
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: BHT-470BWB-CE is the Barcode Handy Terminal with IEEE802.11b/g Wireless LAN and Bluetooth.
The Barcode Handy Terminal scans the barcode, sends and receives the scaned data of barcode by radio.
BHT-470BWB-CE has a variant model, BHT-420BWB-CE.
The difference of BHT-470BWB-CE and BHT-420BWB-CE is number of keypads as follows, and the radio and electic parts of the both models are identical.

Model No.	Key type		Radio module type	
	50-key	31-key	IEEE802.11b/g Wireless LAN	Bluetooth
BHT-470BWB-CE	○	-	○	○
BHT-420BWB-CE	-	○	○	○

The distance of IEEE802.11b/g Wireless LAN antenna and Bluetooth antenna is within 20cm.
IEEE802.11b/g Wireless LAN and Bluetooth modules can transmit simultaneously.

Clock frequency in the system	:	[CPU] 32.768kHz, 13MHz (13MHz x 40 = 520MHz: Max Speed) [Sub-CPU] 32.768kHz, 12.288MHz [RTC] 32.768kHz [IEEE802.11b/g Wireless LAN] 40MHz [Bluetooth] 16MHz
Equipment Type	:	Transceiver

		IEEE802.11b/g Wireless LAN
Frequency band	**Lower limit**	2412MHz
	Upper limit	2462MHz
Type of Modulation		DSSS,OFDM
Antenna Type		Multi-layer Mono Pole
Antenna Connector Type		Coaxial Connector
Antenna Gain		3.3dBi
ITU code		G1D(DSSS), D1D(OFDM)
Power Supply(Inner)		DC 3.3V

		Bluetooth
Frequency band	**Lower limit**	2402MHz
	Upper limit	2480MHz
Bandwidth & Channel spacing		1MHz & 1MHz / CH
Type of Modulation		FHSS
Antenna Type		Multi-layer Mono Pole
Antenna Connector Type		Coaxial Connector
Antenna Gain		3.3dBi
ITU code		F1D
Power Supply (Inner)		DC 3.0V

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 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

SECTION 4 : Test result

4.1 Result of Max. SAR value

Max SAR Measured (IEEE 802.11g) : 0.042 W/kg

Max SAR Measured (Bluetooth) : 0.011 W/kg

4.2 Colocation of SAR value

The Power of Bluetooth is lower than the power of WLAN and both powers are transmitted individually from different antenna, therefore the worst value is possible to calculate just simply sum up both measurement results. We can assume, in this case, mainly the power would be radiated from the antenna.
It is necessary to think about the case of different frequency, modulation and, simultaneous transmission from different antenna. If each worst data is added, it will become the worst case.
As the worst case, the maximum SAR value of EUT is calculated by adding maximum SAR values of IEEE 802.11b/g and Bluetooth as shown below:
Max SAR value = Max SAR value (IEEE 802.11b/g) ＋ Max SAR value (Bluetooth)

Max SAR Measured (IEEE 802.11g + Bluetooth) : 0.053W/kg

4.2 Test location

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Telephone : +81 596 24 8116
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SECTION 5 : Operation of E.U.T. during testing

5.1 Test mode

The test mode for SAR testing was impossible in the Barcode Handy Terminal as stand-alone.
Therefore,the SAR testing was performed in the Barcode Handy Terminal communicating with the specific access point.
The verification of the duty factor was shown in section 7.3.

5.2 Confirmation before / after SAR testing

Correlation of EMC power and SAR power (WLAN IEEE802.11b/g)

Peak Power test
As for the peak power, the data of EMC test (December 07, 2006) is shown as a reference data.
The result is shown in section 7.1.

Average Power test
It was checked that the antenna port power is correlated within 0~+5% (FCC requirements) at EMC test result (December 07,2006).
The tested mode was performed at the worst data rate of middle channel(2437MHz).
The result is shown in section7.1.

Correlation of EMC power and SAR power (Bluetooth)

Peak Power test
As for the peak power, the data of EMC test (December 29, 2006) is shown as a reference data.
It was checked that the antenna port power is correlated within 0~+5% (FCC requirements) at EMC test result.
The result is shown in section 7.4.

Duty factor verifications (WLAN IEEE802.11b/g)

Crest factor determing
Crest factor was calculated by the duty factor measured at each data rate.
The duty factor was calculated according to the following equation:

Duty factor = on time / 1 cycle (on+off time)

The result of duty factor is shown in section 7.3.

5.2 Confirmation after SAR testing

It was checked that the power drift is within ±5% in the evaluation procedure of SAR testing.
As the result, the power drift value was within ±10%.
Therefore, the conducted power was measured in elapsed time and the uncertainty of power drift expanded to 10%.
The result is shown in section 7.5.

5.3 Operating modes for SAR testing

Setting of EUT
This EUT has IEEE.802.11b/g and Bluetooth.
For WLAN mode, the setting of channel and data rate of the EUT can be determined by the access point.
The EUT has the same channel and data rate by setting of the access point.

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

The result is shown in section 7.3.
Remark* : Crest factor decision in SAR testing

Modulation	DBPSK (1Mbps)	CCK (11Mbps)
DutyCycle[%]	97.7	62.5
Crestfactor	1.0	1.6

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* : 1.2 (BPSK),1.8(QPSK),3.6 (16QAM),6.9(64QAM)

The result is shown in section 7.3.
Remark* : Crest factor decision in SAR testing

Modulation	BPSK (6Mbps)	QPSK (12MBps)	16QAM (24Mbps)	64QAM (48Mbps)
DutyCycle[%]	85.6	56.2	27.7	14.4
Crestfactor	1.2	1.8	3.6	6.9

3. Bluetooth mode
Tx frequency band : 2402-2480MHz
Channel : 1ch(2402MHz),40ch(2441MHz),79ch(2480MHz)
Modulation : GFSK
Crest factor* : 1.3 (DH5)

Remark* : Crest factor decision in SAR testing

Modulation	GFSK
DutyCycle[%]	79
Crestfactor	1.3

1. SAR Measurement (Radiated power is always monitored by Spectrum Analyzer.)

IEEE 802.11b

Step1. The seachinng for the modulation.
The DBPSK (1Mbps) of the highest average power[*1] and the CCK (11Mbps) of the highest data rate were compared

Step2. The searching for the worst position
This test was performed at the worst modulation of Step1.

Step3. The changing to the Low and High channels
This test was performed at the worst conditions of Step 2.

IEEE 802.11g

Step4. The seachinng for the modulation.
The data rate in the higher average power[*1] of each modulation was decided, then the worst modulation was searched in the SAR testing.

Step5. The searching for the worst position
This test was performed at the worst modulation of Step4.

Step6. The changing to the Low and High channels
This test was performed at the worst conditions of Step 5.

[*1]The result is shown in section 7.2.

Change distance between EUT and SAM Twin Phantom

Step7. The measurement was performed with the distance, 5mm,10mm to check if the shortest distance may not have the worst value at the conditions of the highest SAR value. As a result, the shortest distance had the worst value

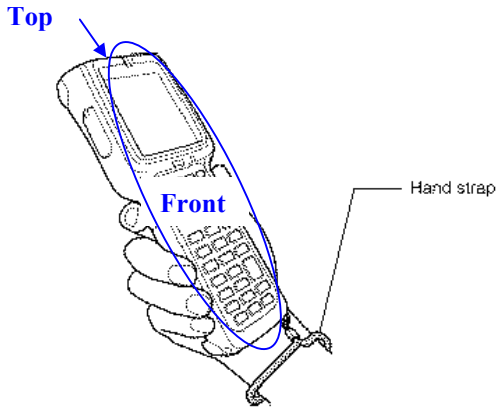
Bluetooth

Step1. The searching for the worst position

Step2. The changing to the Low and High channels
This test was performed at the worst conditions of Step 1.

5.4 Test setup of EUT

When users operate the BHT, users put their hand trough the hand strap and hold the BHT as shown below.



The tests of 'top' and 'front' positions were excluded on the following reason.

- The user will not operate the device that reversely rotated.

- When the key and the display face the lap, the user cannot operate the device.

In order to assume this situation, we performed the test at the following positions. Please refer to "APPENDIX 1" for more details. We tested "front" sides as reference data although they are not considered as conditions to be used.

1.Right side : The test was performed in touch with right side of the BHT to the flat section of SAM Twin Phantom.

2.Left side : The test was performed in touch with left side of the BHT to the flat section of SAM Twin Phantom.

3.Back : The test was performed in touch with back face of the BHT to the flat section of SAM Twin Phantom.

4.Right side (Separation 5mm) : The test was performed in the separation of 5mm between BHT and flat sections of the SAM Twin Phantom

5.Right side (Separation 10mm) : The test was performed in the separation of 10mm between BHT and flat sections of the SAM Twin Phantom

SECTION 6 : Test surrounding

6.1 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	±4.8	Normal	1	1	±4.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	0.7	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	0.7	±3.9	∞
Boundary effects	±1.0	Rectangular	√3	1	±0.6	∞
Probe linearity	±4.7	Rectangular	√3	1	±2.7	∞
Detection limit	±1.0	Rectangular	√3	1	±0.6	∞
Readout electronics	±1.0	Normal	1	1	±1.0	∞
Response time	±0.8	Rectangular	√3	1	±0.5	∞
Integration time	±2.6	Rectangular	√3	1	±1.5	∞
RF ambient Noize	±3.0	Rectangular	√3	1	±1.7	∞
RF ambient Reflections	±3.0	Rectangular	√3	1	±1.7	∞
Mech. constraints of robot	±0.4	Rectangular	√3	1	±0.2	∞
Probe positioning	±2.9	Rectangular	√3	1	±1.7	∞
Extrap. and integration	±1.0	Rectangular	√3	1	±0.6	∞
Test Sample Related						
Device positioning	±2.9	Normal	1	1	±2.9	20
Device holder uncertainty	±3.6	Normal	1	1	±3.6	4
Power drift	±10.0	Rectangular	√3	1	±4.8	∞
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	Normal	1	0.64	±3.2	∞
Liquid permittivity (target)	±5.0	Rectangular	√3	0.6	±1.7	∞
Liquid permittivity (meas.)	±5.0	Normal	1	0.6	±3.0	∞
Combined Standard Uncertainty					**±11.73**	
Expanded Uncertainty (k=2)					**±23.5**	

The result of some test showed that power drift has exceeded 5%. Therefor, the uncertainty of power drift expanded to 10%.
However, the extended uncertainty (k=2) of atest is less than 30%.

SECTION 7 : Results of confirmation before / after SAR testing

7.1 Correlation of EMC power and SAR power (WLAN IEEE802.11b/g)

EMC power

This data is reference data of EMC test. (Report No. 27DE0137-HO-A)
Date of test: December 07, 2006

FCC15.247 Maximum Putput Peak Power

[IEEE802.11b:11Mbps]						
Ch	Freq. [MHz]	P/M PK Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	5.79	1.85	10.12	17.76	59.70
Mid	2437.0	4.84	1.86	10.12	16.82	48.08
High	2462.0	5.29	1.88	10.12	17.29	53.58

[IEEE802.11g:24Mbps]						
Ch	Freq. [MHz]	P/M PK Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2412.0	8.37	1.85	10.12	20.34	108.14
Mid	2437.0	7.91	1.86	10.12	19.89	97.50
High	2462.0	8.23	1.88	10.12	20.23	105.44

Sample Calculation:

Result = Reading + Cable Loss+ Attenuator

Reference data for SAR testing

Average power (Reference data for SAR testing)						
Mode	Freq. [MHz]	P/M AVG Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
11b (1Mbps)	2437	2.39	1.86	10.12	14.37	27.35
11g (6Mbps)	2437	0.39	1.86	10.12	12.37	17.26

Sample Calculation:
Result = Reading + Cable Loss+ Attenuator

SAR power

Date of test: February 14, 2006

Average power						
Mode	Freq. [MHz]	P/M AVG Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
11b (1Mbps)	2437	3.01	1.30	10.15	14.46	27.93
11g (6Mbps)	2437	1.12	1.30	10.15	12.57	18.07

Sample Calculation:
Result = Reading + Cable Loss+ Attenuator

7.2 Reference data of SAR test (Data rate determing of WLAN IEEE802.11b/g)

Date of test: February 14, 2007,

[IEEE802.11b] Rate Check

Rate [Mbps]	Freq. [MHz]	PM AVG Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
1.0	2437.0	3.01	1.30	10.15	14.46	27.93
2.0	2437.0	3.00	1.30	10.15	14.45	27.86
5.5	2437.0	2.95	1.30	10.15	14.40	27.54
11.0	2437.0	2.69	1.30	10.15	14.14	25.94

[IEEE802.11g] Rate Check

Rate [Mbps]	Freq. [MHz]	PM AVG Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
6.0	2437.0	1.14	1.10	10.15	12.39	17.34
9.0	2437.0	-0.90	1.10	10.15	10.35	10.84
12.0	2437.0	-2.74	1.10	10.15	8.51	7.10
18.0	2437.0	-3.56	1.10	10.15	7.69	5.87
24.0	2437.0	-5.48	1.10	10.15	5.77	3.78
36.0	2437.0	-7.42	1.10	10.15	3.83	2.42
48.0	2437.0	-7.95	1.10	10.15	3.30	2.14
54.0	2437.0	-8.59	1.10	10.15	2.66	1.85

Sample Calculation:

Result = Reading + Cable Loss+ Attenuator

7.3 Duty factor verification (WLAN IEEE802.11b/g)

Crest factor determing

*Explanation to the transmitting duty being maximum

-In the test mode, data packet of 1472 bytes is transmitted repeatedly from BHT(Bar code Handy Terminal) by UDP. (User Datagram Protocol)1472 bytes data is transmitted from BHT to AP(Access point), and it transmits ACK back from AP to BHT repeatedly.

-BHT-470BW series [including BHT-420BW-CE] support TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) as transport layer protocol. In comparison with UDP, control packet of TCP is greater; and thus data transmitting speed of TCP is slower than that of UDP. Therefore, transmitting duty of UDP is greater than that of TCP.

-As stated above, it is a repetition of data transmission from BHT and ACK transmission from AP, so simply, greater the data volume transmitted from BHT gets, greater the transmitting duty becomes. However, when the data exceeds over 1473 bytes, it transmits packets in multiple pieces; therefore, it transmits 1472 bytes, that is right before packet partitioning.

Greater the transferring rate gets, less the transmitting duty becomes. In wireless, communication is possible at maximum of 54Mbps, but that is the reason why the processing capacity of BHT is not able to.

The setting of channel and data rate of the EUT can be determined by the AP.
The EUT has the same channel and data rate by setting those of the AP.

11b		
DATA rate [Mbps]	Duty [%]	Crest factor for SAR
DBPSK (1Mbps)	97.7	1.0
DQPSK (2Mbps)*	95.2	-
CCK (5.5Mbps)*	89.0	-
CCK (11Mbps)	62.5	1.6

11g , 11a		
DATA rate [Mbps]	Duty [%]	Crest factor for SAR
BPSK (6Mbps)	85.6	1.2
BPSK (9Mbps)*	65.2	-
QPSK (12Mbps)	56.2	1.8
QPSK (18Mbps)*	38.5	-
16QAM (24MBps)	27.7	3.6
16QAM (36Mbps)*	18.8	-
64QAM (48Mbps)	14.4	6.9
64QAM (54Mbps)*	13.8	-

*Reference: SAR test was not performed at the data rate.

7.4 Correlation of EMC power and SAR power (Bluetooth)

EMC power

This data is reference data of EMC test. (Report No. 27DE0137-HO-C)
Date of test: December 29, 2006

FCC15.247 Maximum Putput Peak Power

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2402.0	-11.74	1.25	10.14	-0.35	0.92
Mid	2441.0	-11.05	1.25	10.14	0.34	1.08
High	2480.0	-10.91	1.00	10.14	0.23	1.05
Inquiry	2441.0	-11.09	1.25	10.14	0.30	1.07

Sample Calculation:
Result = Reading + Cable Loss (supplied by customer)+ Attenuator

SAR power

Date of test: November 25, 2006

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
Low	2402.0	-11.61	1.25	10.14	-0.22	0.95
Mid	2441.0	-11.01	1.25	10.14	0.38	1.09
High	2480.0	-10.89	1.00	10.14	0.25	1.06

Sample Calculation:
Result = Reading + Cable Loss (supplied by customer)+ Attenuator

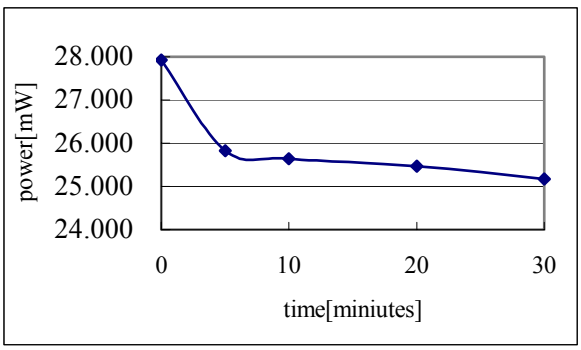
7.5 Power drift measurement

The power drift was not within ± 5% on SAR re-testing with full-charged battery.
Therefore the conducted power was measured in elapsed time.
The average power was measured of IEEE802.11b / 1Mbps / 2437MHz.
As a result, power changed by -9.8 %. The result is shown in the following.
So the uncertainty of power drift was expanded to ± 10%.

Date of test: February 14, 2006

2437 MHz(IEEE 802.11b) Average power

Time [Minutes]	Result [dBm]	Converted [mW]	Diviation [%]
-	14.46	27.925	-
After 5	14.12	25.823	-7.5
After10	14.09	25.645	-8.2
After20	14.06	25.468	-8.8
After30	14.01	25.177	-9.8



SECTION 8 : Measurement results

8.1 SAR measurement results

All of power drifts were within ±10%.
The measurement data is put on "APPENDIX 3".

8.1.1 2450MHz SAR (WLAN 11b/g mode)

Liquid Depth (cm)	:	**15.0**	Model	:	**BHT-470BWB-CE**
Parameters	:	**ε_r =50.1 σ =1.98**	Serial No.	:	**5496310346600007**
Ambient temperature (deg.c.)	:	**24.0 (14-Feb) 24.5(15-Feb)**	Modulation	:	**DSSS, OFDM**
Relative Humidity (%)	:	**35 (14 and15-Feb)**	Crest factor	:	**See Section 5.3**
Date	:	**February 14-15, 2007**	Measured By	:	**Miyo Ikuta**

SAR MEASUREMENT RESULTS

Frequency			Modulation (Data rate[bps])	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Mode	ch	[MHz]		Antenna	Position	Separation [mm]	Before	After	Maximum value of
11b	**Step 1 Modulation search**								
	6	2437	DBPSK(1Mbps)	Fixed	Right Side	0	23.8	23.8	**0.026**
	6	2437	CCK(11Mbps)	Fixed	Right Side	0	23.8	23.8	**0.024**
	Step 2 Position search								
	6	2437	DBPSK(1Mbps)	Fixed	Left Side	0	23.8	23.8	**0.00916**
	6	2437	DBPSK(1Mbps)	Fixed	Back	0	23.8	23.9	**0.019**
	Step 3 Frequency Change								
	1	2412	DBPSK(1Mbps)	Fixed	Right Side	0	23.8	23.8	**0.035**
	11	2462	DBPSK(1Mbps)	Fixed	Right Side	0	23.8	23.8	**0.042**
11g	**Step 4 Modulation search**								
	6	2437	BPSK(6Mbps)	Fixed	Right Side	0	24.0	24.0	**0.018**
	6	2437	QPSK(12Mbps)	Fixed	Right Side	0	24.0	24.0	**0.014**
	6	2437	16QAM(24Mbps)	Fixed	Right Side	0	24.0	24.0	**0.00688**
	6	2437	64QAM(48Mbps)	Fixed	Right Side	0	24.0	24.0	**0.00236**
	Step 5 Position search								
	6	2437	BPSK(6Mbps)	Fixed	Left Side	0	24.0	24.0	**0.00602**
	6	2437	BPSK(6Mbps)	Fixed	Back	0	24.0	24.2	**0.012**
	Step 6 Frequency Change								
	1	2412	BPSK(6Mbps)	Fixed	Right Side	0	24.2	24.2	**0.036**
	11	2462	BPSK(6Mbps)	Fixed	Right Side	0	24.2	24.2	**0.024**
11b	**Step 7 Change distance between EUT and SAM phantom**								
	11	2462	DBPSK(1Mbps)	Fixed	Right Side	5	24.2	24.2	**0.015**
	11	2462	DBPSK(1Mbps)	Fixed	Right Side	10	24.2	24.2	**0.00616**
FCC47CFR2.1093 Spatial Peak Uncontrolled Exposure / General Population							**Body SAR : 1.6 W/kg (averaged over 1 gram)**		

8.1.2 2450MHz SAR (Bluetooth mode)

Liquid Depth (cm)	:	**15.0**	Model	:	**BHT-470BWB-CE**
Parameters	:	εr =**50.1**, σ =**2.00**	Serial No.	:	**5496310346600007**
Ambient temperature (deg.c.)	:	**25.0**	Modulation	:	**GFSK**
Relative Humidity (%)	:	**32**	Crest factor	:	**1.3**
Date	:	**November 25, 2006**	Measured By	:	**Miyo Ikuta**

SAR MEASUREMENT RESULTS OF BLUETOOTH

Frequency			Modulation	EUT Set-up Conditions		Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Mode	Ch	[MHz]		Position	Separation [mm]	Before	After	Maximum value of multi-peak
BT	**Step 1 Position search**							
	39	2441	GFSK	Back	0	23.4	23.4	**0.00358**
	39	2441	GFSK	Right Side	0	23.4	23.4	**0.011**
	39	2441	GFSK	Left Side	0	23.4	23.4	**0.0000174**
	Step 2 Frequency Change							
	1	2402	GFSK	Right Side	0	23.5	23.6	**0.010**
	79	2480	GFSK	Right Side	0	23.6	23.6	**0.010**
FCC47CFR2.1093 Spatial Peak Uncontrolled Exposure / General Population								**Body SAR : 1.6 W/kg (averaged over 1 gram)**