WOOSIM SYSTEMS INC.

Reliability Test Report				
Applicant	Business Team			
	Contact Person	Dae Yeon Lee	Telephone	82-2-2107-3714
	Title	Department Manager	E-MAIL	dylee@woosim.com
EUT	Product	PORTABLE THERMAL PRINTER		
	Model No.	PORTI-W40		
	Production Date	2008.12.		
Test List	1. Humidity Test			
	2. Temperature Cycling Test			
	3. Vibration Test			
	4. Drop Test			
	5. Cover open-close Test			
	6. Low Temperature Operation Test			
Test Result	Humidity, Temperature cycling and Vibration test passed But found some failures in drop test.			

This test was progressed with the samples which the applicant department submitted in accordance with IEC60068-2-1, IEC60068-2-2, IEC60068-2-3.

Woosim Systems Inc. Quality Control Team

Manager Suk-Bong Yum

February 6, 2009

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

5. Cover open-close Test

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

1. Humidity Test

1.1 Test Purpose

This test is to confirm satisfactory functional operation when exposing environment to high temperature and humidity during storage and transportation.

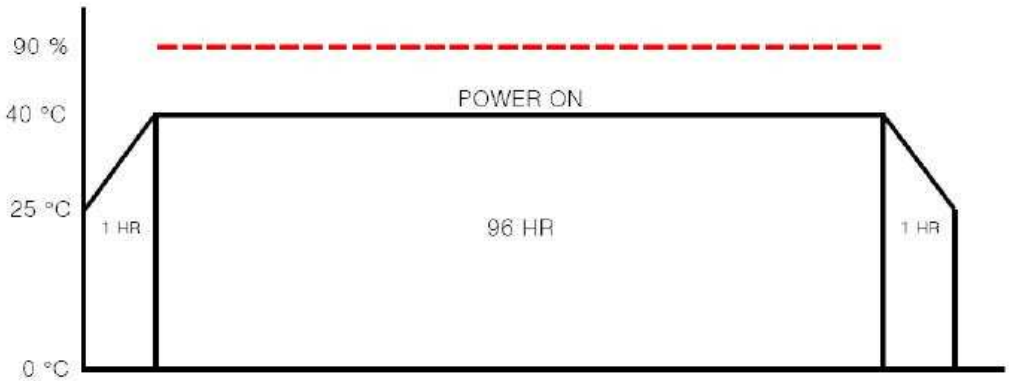
1.2 Test Date

January 8, 2009 ~ January 11, 2009

1.3 Test Location

Woosim Systems - AZING ROOM

1.4 Test Conditions



< Temperature & Humidity graph >

Total Time : 98hours

1.5 Test Method

- In accordance with IEC60068-2-1, IEC60068-2-2, Function checked.

- EUT located on test chamber inclusive of power input (rule: power input removed)

- Adjusted temperature 40℃ and relative humidity 90%.

- After 98hr, checked function and visual inspection. (SELF TEST, Bluetooth TEST)

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

1.6 Test Equipment

Test Equipment	Model No.	Manufacture	Cal. Due date
Humidity Chamber	HONEYWELL IPC 1000	Y.R.RTC	

1.7 Test Results

- **Visible Inspection : Pass**
- **Function Inspection : Pass (SELF TEST, Bluetooth TEST)**
- **Test Result : Pass**

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

2. Temperature Cycling Test

2.1 Test Purpose

This test is to confirm satisfactory functional operation when exposing environment to high temperature and humidity during storage and transportation.

2.2 Test Date

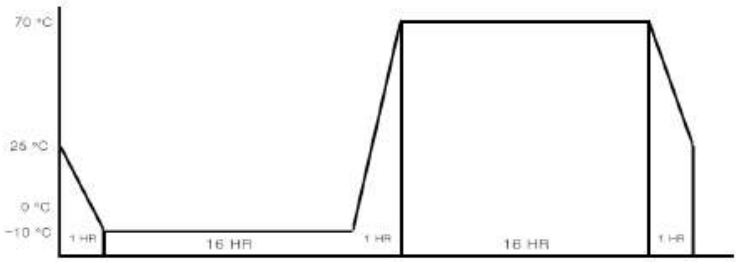
January 15, 2009 ~ January 19, 2009

2.3 Test Location

Woosim Systems Inc. - AZING ROOM

2.4 Test Conditions

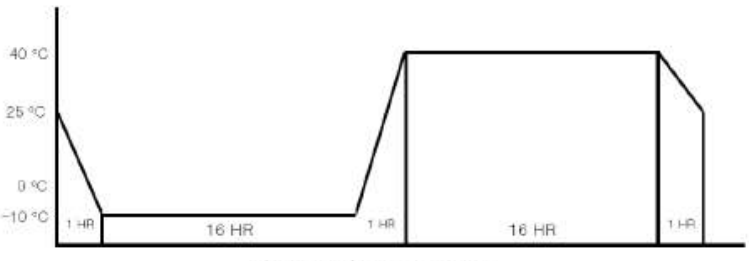
1) Non-operating



< temperature graph 1 >

Total time : 35hours

2) Operating



< temperature graph 2 >

Total time : 35 hours

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

2.5 Test Method

- In accordance with IEC60068-2-1, IEC60068-2-2, Function checked

- EUT located on test chamber after power input removed

- EUT located on test chamber after power input inserted.

- In accordance with test conditions, adjusted the temperature of CHAMBER.

- After 35hr, checked function and visual inspection.

2.6 Test Equipment

Test Equipment	Model No.	Manufacture	Cal. Due date
Humidity Chamber	HONEYWELL IPC 1000	Y.R.RTC	

2.7 Test Results

- Visible Inspect : Pass

- Function Inspect : Pass (SELF TEST, Bluetooth Test)

- Test Result : Pass

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

3. Vibration Test

3.1 Test Purpose

This test is to confirm endurance of product which can be expected under vibration during transportation.

3.2 Test Date

January 20, 2009 ~ January 21, 2009

3.3 Test Location

Woosim Systems Inc. - AZING ROOM

3.4 Test Conditions

- **Conducted under no Power**
- **Vibration frequency : 10~60 Hz**
- **Gravity : 1G**
- **Sweep Time : 1 OCT/MIN**
- **Vibration time : 2 hrs as per X,Y,Z axis(Total 6 hrs)**

3.5 Test Method

- **Fixed EUT to X,Y,Z axis respectively**
- **Conducted visual and function inspection.**

- In accordance with IEC60068-2-6, EUT conducted visual and function inspection.

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

3.6 Test Equipment

Test Equipment	Model No.	Manufacture	Cal. Due date
Vibration tester		Y.M.RTC	

3.7 Test Results

- Visible Inspect : Pass
- Function Inspect : Pass (SELF TEST , Bluetooth Test)
- Test Result : Pass

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

4. Drop Test

4.1 Test Purpose

This test is to confirm endurance of product which can be expected during transportation.

4.2 Test Date

January 22, 2009 ~ January 24, 2009

4.3 Test Location

Woosim Systems Inc - Q.C. ROOM

4.4 Test Conditions

- Height of Drop

1) 1.0M (Without carrying case, with Battery and 40Φpaper)

2) 1.5M (Without carrying case, with Battery and 40Φpaper)

3) 1.5M (With carrying case, Battery and 40Φpaper)

and 10 times to each surface(Total 60times) for 3 cases

4.5 Test Method

- Check the initial operation condition

- Drop the EUR each 1 surface

- Check the operation condition after completing the TEST

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

4.6 Test Result

1) 1M DROP TEST RESULT (WITHOUT CARRYING CASE)

Division		Check Point		Note
Check time	EUT No.	Power On/Off	Printing	
Front side	Thermal Printer (PORTI-W40)	O.K	O.K	Pass
Rear side		O.K	O.K	Pass
Top side		O.K	O.K	Pass
Bottom side		O.K	O.K	Pass
Left side		O.K	O.K	Power Switch On
Right side		O.K	O.K	Pass

***Test Result : Cover opened but after closing it normal functioning**

2) 1.5M DROP TEST RESULT (WITHOUT CARRYING CASE)

Division		Check Point		Note
Check time	EUT No.	Power On/Off	Printing	
Front side	Thermal Printer (PORTI-W40)	O.K	NO	FAIL
Rear side		O.K	NO	FAIL
Top side		O.K	NO	FAIL
Bottom side		O.K	NO	FAIL
Left side		O.K	NO	FAIL
Right side		O.K	NO	FAIL

***Test Result : Paper cover damaged, Battery and Roller removed,**
unfunctioning due to paper cover damaged

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

3) 1.5M DROP TEST RESULT (WITH CARRYING CASE)

Division		Check Point		Note
Check time	EUT No.	Power On/Off	Printing	
Front side	Thermal Printer (PORTI-W40)	O.K	O.K	Pass
Rear side		O.K	O.K	Pass
Top side		O.K	O.K	Pass
Bottom side		O.K	O.K	Pass
Left side		O.K	O.K	Power Switch On
Right side		O.K	O.K	Pass

***Test Result : Cover opened but after closing it normal functioning**

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

5. Cover open-close Test

5.1 Test Purpose

This test is to confirm endurance of printer cover which operates during the exchange of the roll paper.

5.2 Test Date

February 4 ~ February 6, 2009

5.3 Test Location

Woosim Systems AZING ROOM

5.4 Test Conditions

- Printer head life cycle: 50km

- Paper length per roll: 10 meter ~ 18 meter

- Test 5,000 times (50,000 meter / 10 meter = 5,000 times)

5.5 Test method

- Cover open => cover close => printer self test=> cover open

5.6 Test Result

- Total 5,000 times of cover open-closed Test : Pass

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

6. Low Temperature Operation Test

1.1 Test Purpose

It is a test performed to determine the reliability of printer and part under low temperature conditions over an extended period of time.

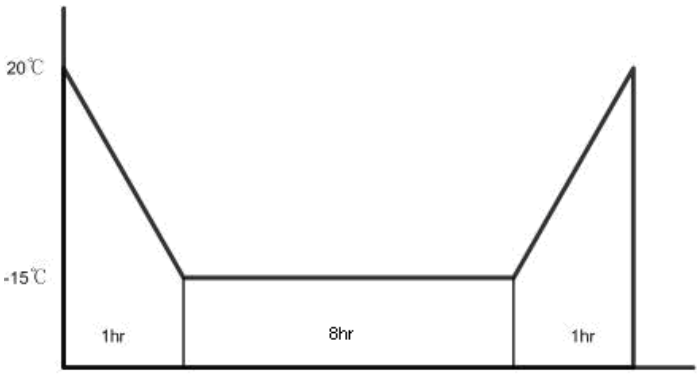
1.2 Test Date

Apri 16, 2009 ~ April 17, 2009

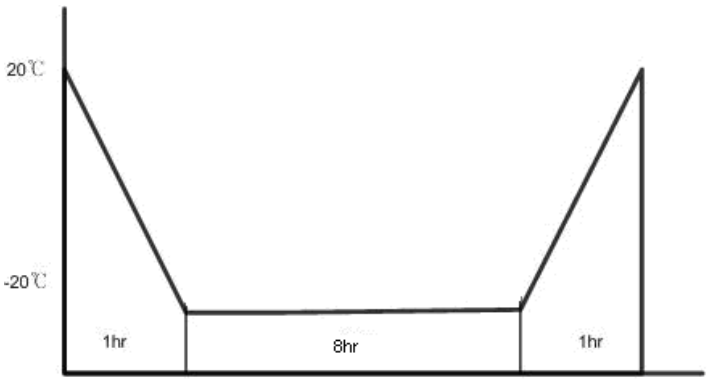
1.3 Test Location

Woosim Systems - AZING ROOM

1.4 Test Conditions



<Temperature gragh 1>



<Temperature gragh 2>

Total Time : -15℃ ,-20℃ each 10hours

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

1.5 Test Method

- In accordance with IEC60068-2-1(Environmental testing procedures Part 2 : Test, Tests A :Cold), Function checked.

- EUT 1 : Test sample was run with power adapter plugged in for testing.

- EUT 2 : Test sample was run with Li-ion Battery

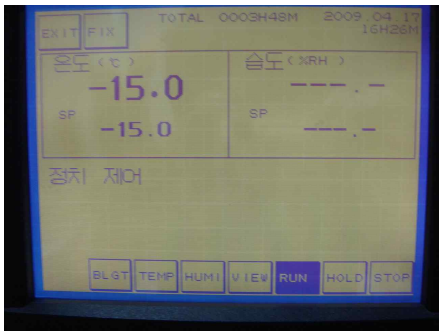
- After the temperature became stabilized the printing quality was tested via Bluetooth

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707

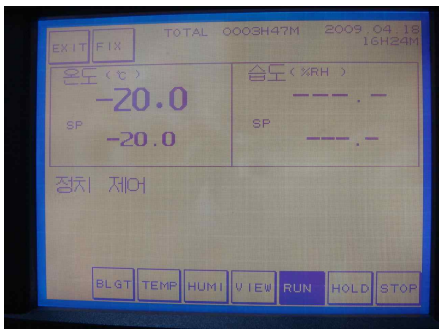
1.6 Test Equipment

Test Equipment	Model No.	Manufacture	Cal. Due date
Humidity Chamber	HONEYWELL IPC 1000	Y.R.RTC	

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707



<15°C>



<20°C>

1.7 Test Results

- Visible Inspection : Pass

- Function Inspection : Pass (Bluetooth TEST)

- Test Result : Pass

Woosim Systems Inc.
#501, Daerung Technotown 3th, 448, Gasan-Dong, Geumchun-Gu, Seoul, Korea
TEL : 02-2107-3700 FAX : 02-2107-3707