FWS-7800

Environment Test Report

Report NO: 11I020015

Summary	☑ **Pass** ☐ **Fail** Note : There is/are ___ defect(s) not list in the report, please check it in the DTS Website. ☐ **Pass with Deviation** **Comment: _____**

Issue date	Approval	Test Engineer
2010-11-22	**Jansin Lee**	**Allen Hsu**

Test item list

Testing Result

Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Temperature variation operation test	Pass	
6	Cold start and hot start test	Pass	

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Configuration of EUT

Num	Item	Spec
1.	**Embedded System**:	FWS-7800
	1. Main Board	BNX-3450 A0.2 (BIOS 0.16)
	2. CPU	Intel® Xeon® Processor X3450 (8M Cache, 2.66 GHz)
	3. Memory	INNO DISK/ Hynix H5TQ2G83BFR /DDR3 1333/4G *4
	4. 2.5” SATA SSD	FUJITSU MHW2060BH / 60GB
	5. Test Software	Windows 7 / Run PassMark Burn In Test 6.0 Pro
2.	Power Supply	FSP GROUP 300W / FSP300-701UJ

Heat Sink

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Test Date: 11-19-2010

Test Product: FWS-7800

Test Site: AAEON Internal Lab.

Test Standard: Reference EN 61131-2(94), UL508 (94)

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 12/08/09
Serial Number: 12A323190

Test Condition:

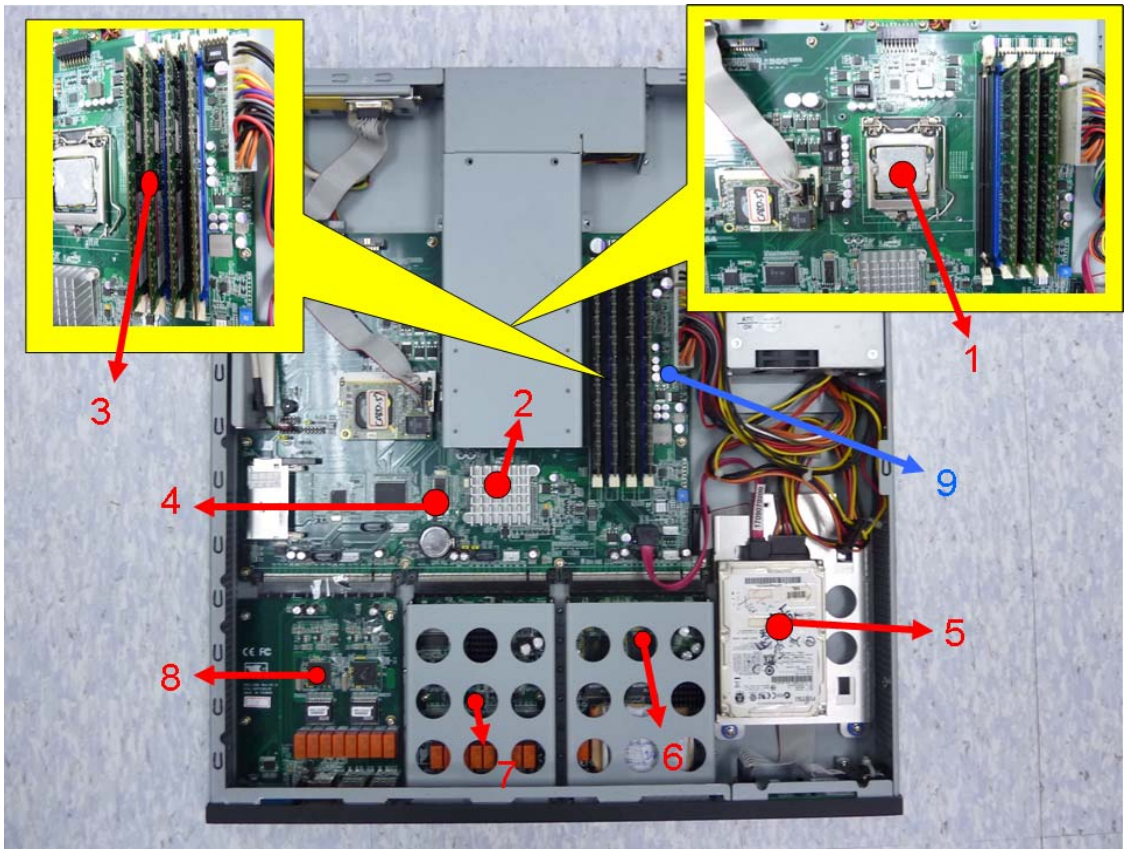
Ambient temperature: 40℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows 7/ Run PassMark Burn In Test 6.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Thermal profile data:

FWS-7800

Point / Temp. Stage(℃)	Spec	40	25
FWS-7800			
01. CPU	72.7	64.6	49.6
02. Chipset Ibex Peak PCH 951P.INTEL.BD3450	111	55.1	40.1
03. RAM	85	46.6	31.6
04. U22 - CLOCK GENERATOR.SILEGO.SLG505YC264BTTR	95	54.7	39.7
05. PER-C31L – 82573L Chip	70	68.6	53.6
06. PER-C33L – 82574L Chip	85	46.0	31.0
07. PER-C30L – 82574L Chip	70	44.8	29.8
08. SATA H.D	63	44.7	29.7
09. Control Box Inside Air Temperature	N/A	43.3	28.3
10. Control Box Surface	N/A	42.3	27.3
11. Chamber Air Temperature	N/A	40.0	25.0
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification.			

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Temperature Measurement Table:

Location / T_A=40.0℃	Temp. Rise (Thermal Couple)	SpeedFan 4.41 (Read from BIOS)
Senser 1 Temp.	N/A	52.0℃
Senser 2 Temp.	N/A	44.0℃
Senser 3 Temp.	N/A	45.0℃

Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-7800)

Test Result:

No problem was found during the temperature rise operation test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature cycle test

Test Date: 11-16~18-2010

Test Product: FWS-7800

Test Site: AAEON Internal Lab.

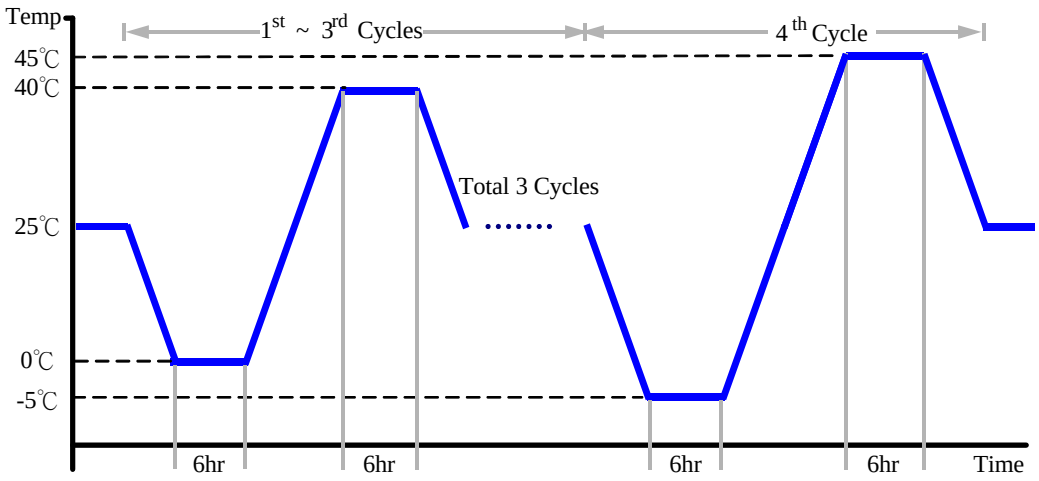
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6487KT

Test Condition:

1. Test Low Temperature: 0℃ (1~3 cycles)
   -5℃ (4^{th} cycle)
2. Test High Temperature: 40℃ (1~3 cycles)
   45℃ (4^{th} cycle)
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 4 cycles
6. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-7800)

Test Result:

No problem was found during the temperature operation cycle test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

High temperature storage test

Test Date: 11-11~12-2010

Test Product: FWS-7800

Test Site: AAEON Internal Lab.

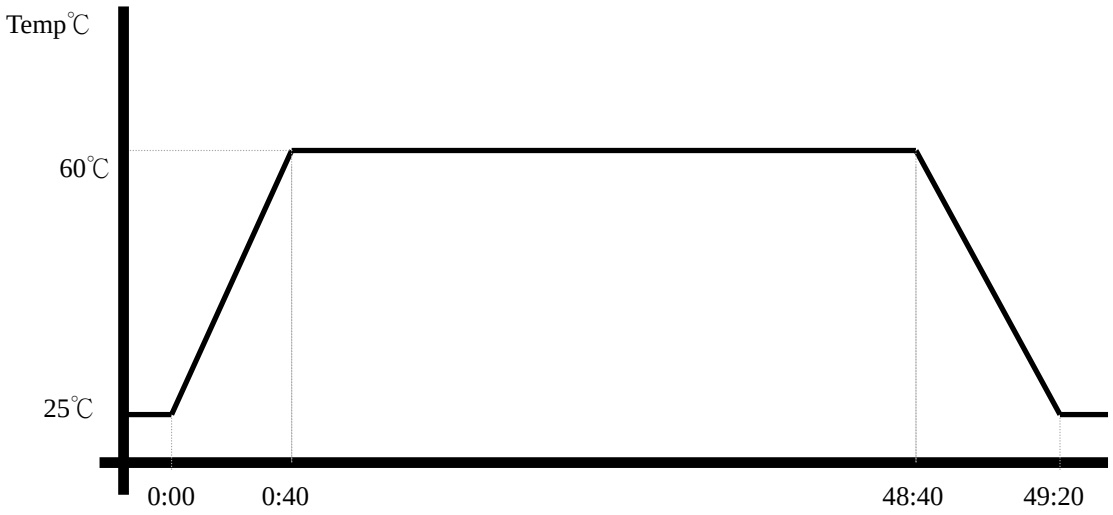
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6487KT

Testing Item:

1. Test Temperature: 60℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 6.0 Pro
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (FWS-7800)

Test Result:

No problem was found after the high temperature storage test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Low temperature storage test

Test Date: 11-10~11-2010

Test Product: FWS-7800

Test Site: AAEON Internal Lab.

Test Standard: Reference IEC 68-2-1 Testing procedures
Test Ab: Cold Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6487KT

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 6.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (FWS-7800)

Test Result:
No problem was found after the low temperature storage test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Humidity test

Test Date: 11-13~14-2010

Test Product: FWS-7800

Test Site: AAEON Internal Lab.

Test Standard: Reference IEC 68-2-3 Testing procedures
Test Ca: Damp heat, steady state (Non-operation)

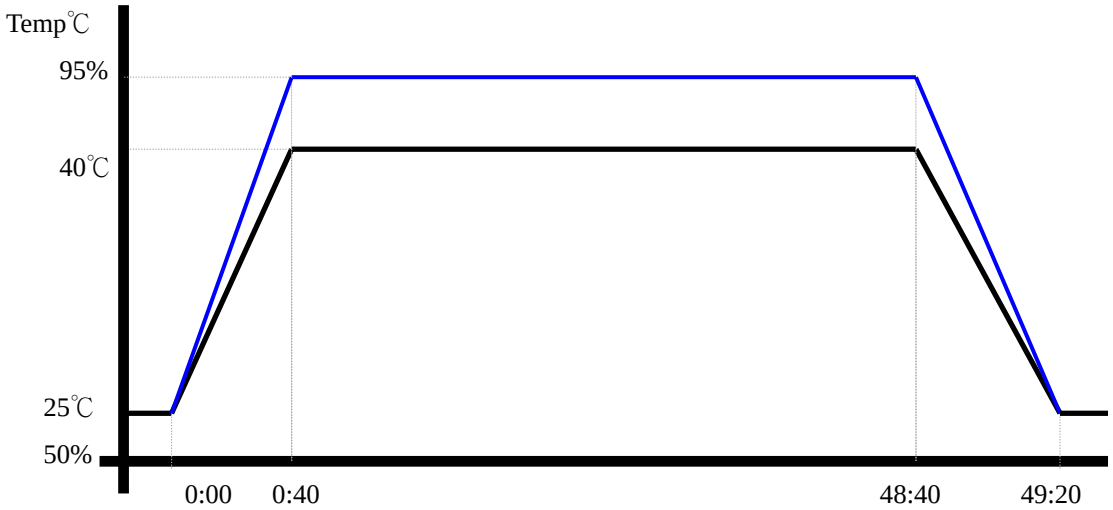
Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6487KT

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 6.0 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (FWS-7800)

Test Result:
No problem was found after the humidity storage test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Cold start and hot start test

Test Date: 11-12~16-2010

Test Product: FWS-7800

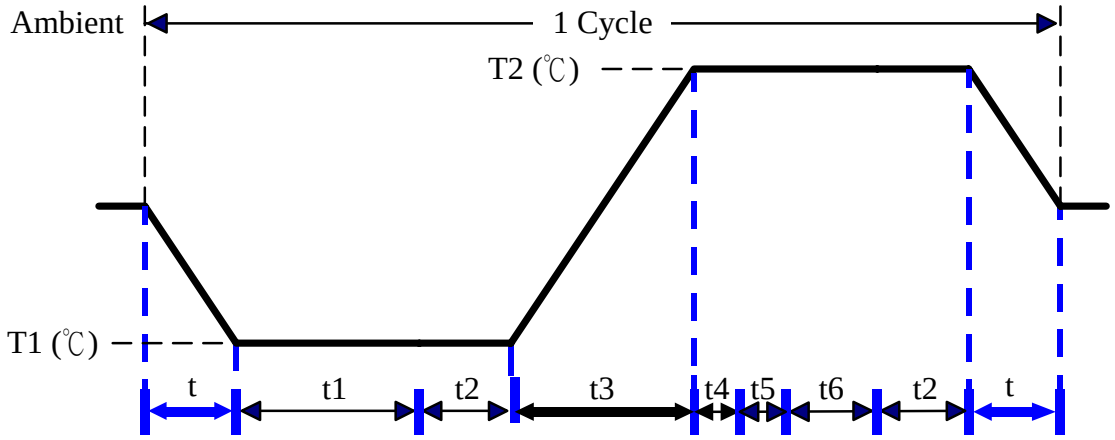
Test Site: AAEON Internal Lab.

Test Standard: Reference IEC 68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6487KT

Test Condition:



Parameters	Description
T1	-5℃
T2	45℃
t1	4 hrs
t2, t6	2 hrs
t4, t5	1hrs
t, t3	2℃/min
n (Cycle)	1

t = temprature slope
t , t1, t6: Power Off
t2: Power on/off test 10 times (on 2 min / off 5min)
t3, t4: Run PassMark Burn In Test
t5: Win 7 Software restart test 3 times
Test Software:Windows 7

Test Result:

a. No problem was found during the cold start test.

b. No problem was found during the hot start test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw