FWS-7811

Environment Test Report

Report NO : 14I020005

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

Issue date	Approval	Issued by
2014-03-14	**Tom Lin**	**Juno Cheng**

Test item list

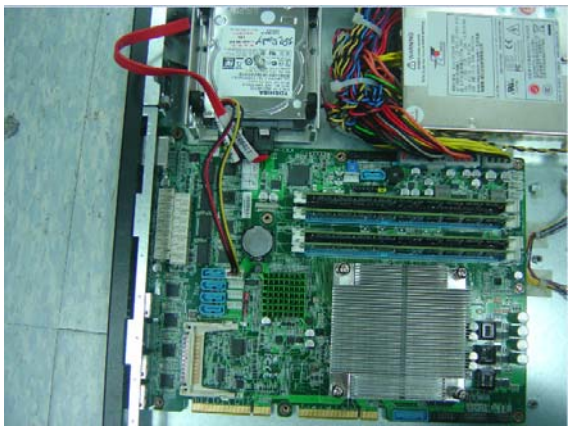
Testing Result

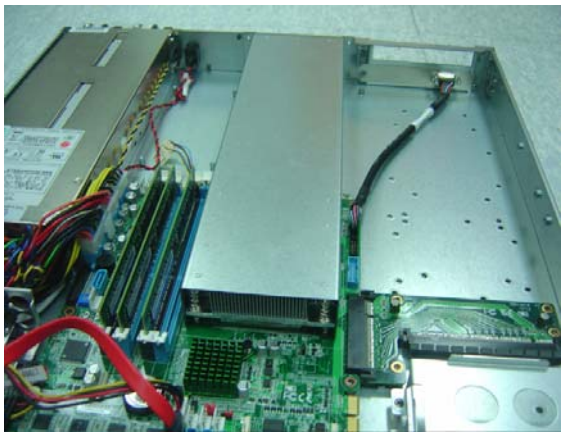
Num	Test item list	Result	Remark
1	Temp./Humidity power on/off test	Pass	
2	Temperature rise test	Pass	
3	Temperature cycle operation test	Pass	
4	High temperature storage test	Pass	
5	Low temperature storage test	Pass	
6	Humidity test	Pass	
7	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
1.	System:	FWS-7811 A1.0
	1. Main board	FWB-7811 A0.1
	2. BIOS	FWS-7811 R1.0 (K781AM10) (02/22/2014)
	3. CPU Type	Intel Xeon CPU E3-1275 V3 3.20 GHz
	4. Memory	ADATA DDR3L 1600 8GX18 ECC-DIMM ADDE1600W8G11-BMIE *4 (3LE77 D9QBJ)
	5. CFD	PQI 32MB (for Dos Mode power on/off test only)
	6. 2.5'' SATA HDD	TOSHIBA MQ01ABD032 320GB
	6 Test Software	Windows 7 / Run BurnIn test 7.1 Pro
2.	Power Supply	EMACS R1V2-5275V4H(ZIPPY)

CPU Cooler





Temp./humidity power on/off test

Test Date: 03-13～14-2014

Test Product: FWB-7811 A1.0

Test Site: AAEON QE Dept.

Test Standard: Refer to IEC 68-2-30 Testing procedures
Test Db: Damp Heat Test

Test Equipment:

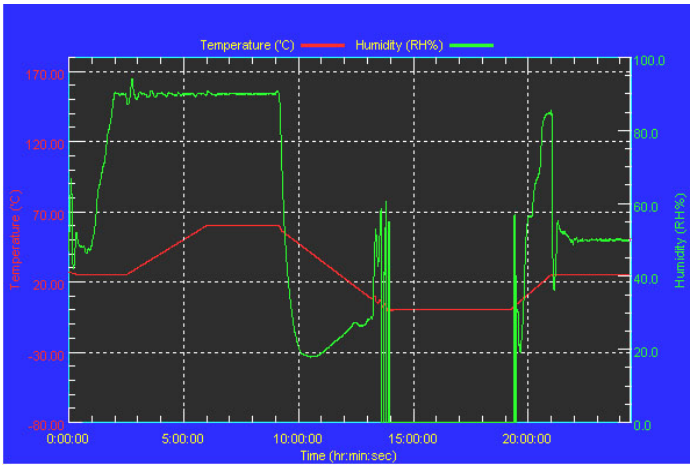
Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 10/01/13
Serial Number: 3898

Temperature & Humidity Power On/Off Test:

Testing Specification:

Step	Temperature (℃)	Humidity (%RH)	Duration (HH:MM)
1	25	50	00:30
2	25	50	00:30
3	25	90	01:00
4	25	90	00:30
5	60	90	03:30
6	60	90	03:00
7	0	0	04:50
8	0	0	05:23
9	25	50	01:47
10	25	50	03:00

Test Curve:



Test Result:

Test Method	Actual	Successful	Failure rate
Power On/Off	1307time	1307/times	0 %
Note: Failure rate need to 0%.			

Temperature rise test

Test Date: 03-12～13-2014

Test Product: FWS-7811

Test Site: AAEON QE Dept.

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

Temperature Measurement:

40 Channel Thermal Recorder: (YOKOGAWA Inc,)
Model: DA100-13-1D
Date of Calibration: 10/01/13
Serial Number: 12A323190

Test Condition:

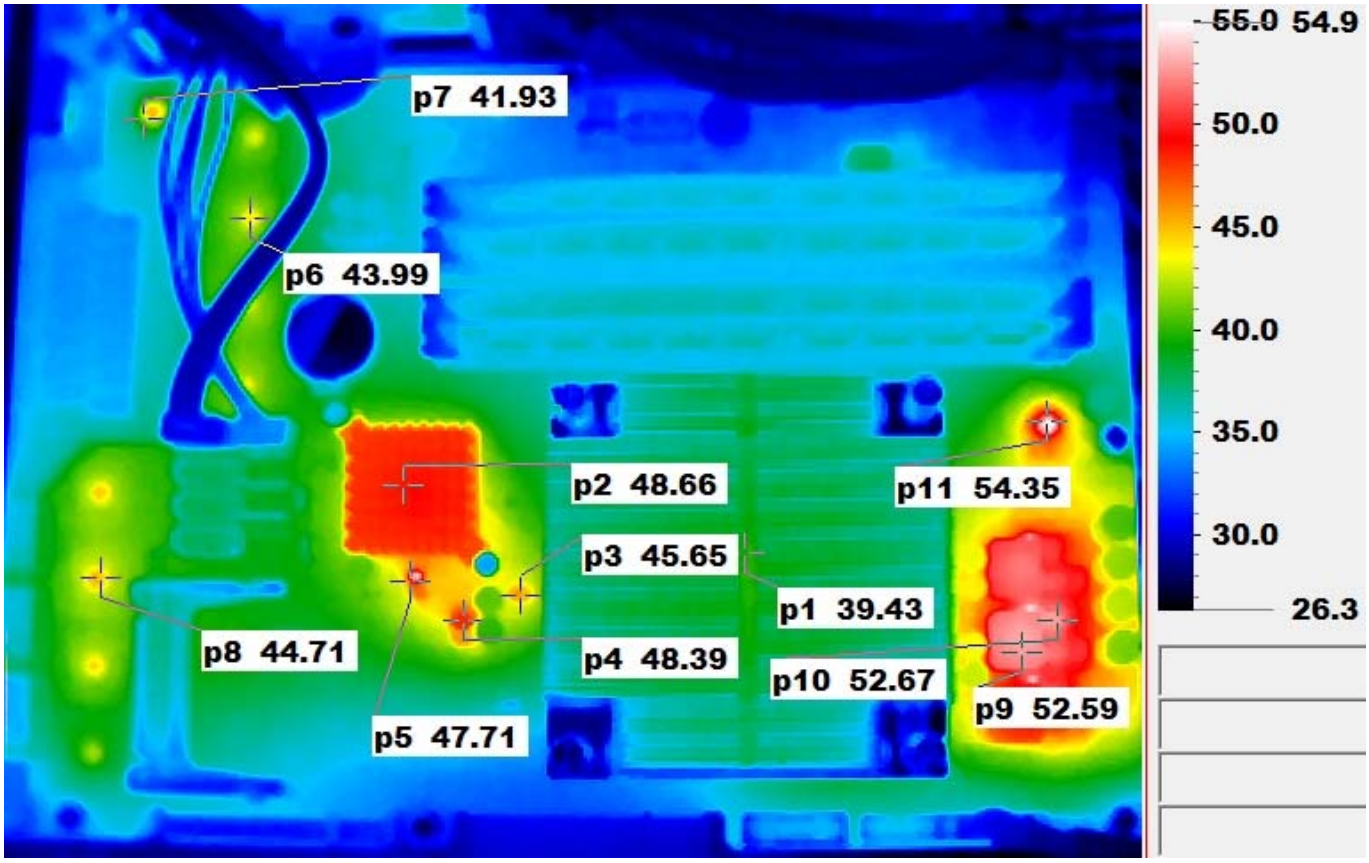
Ambient temperature: 40℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

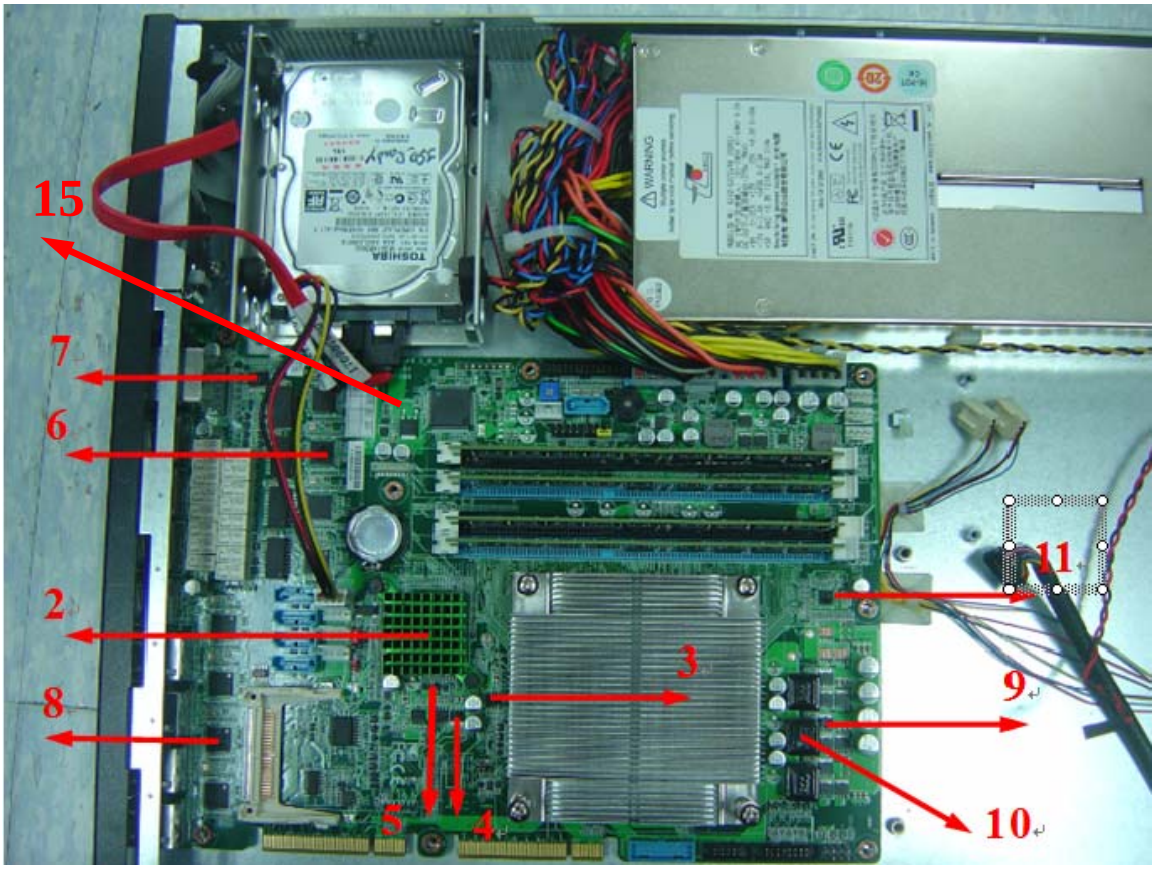
Windows 7 / Run PassMark Burn In Test 7.1 Pro

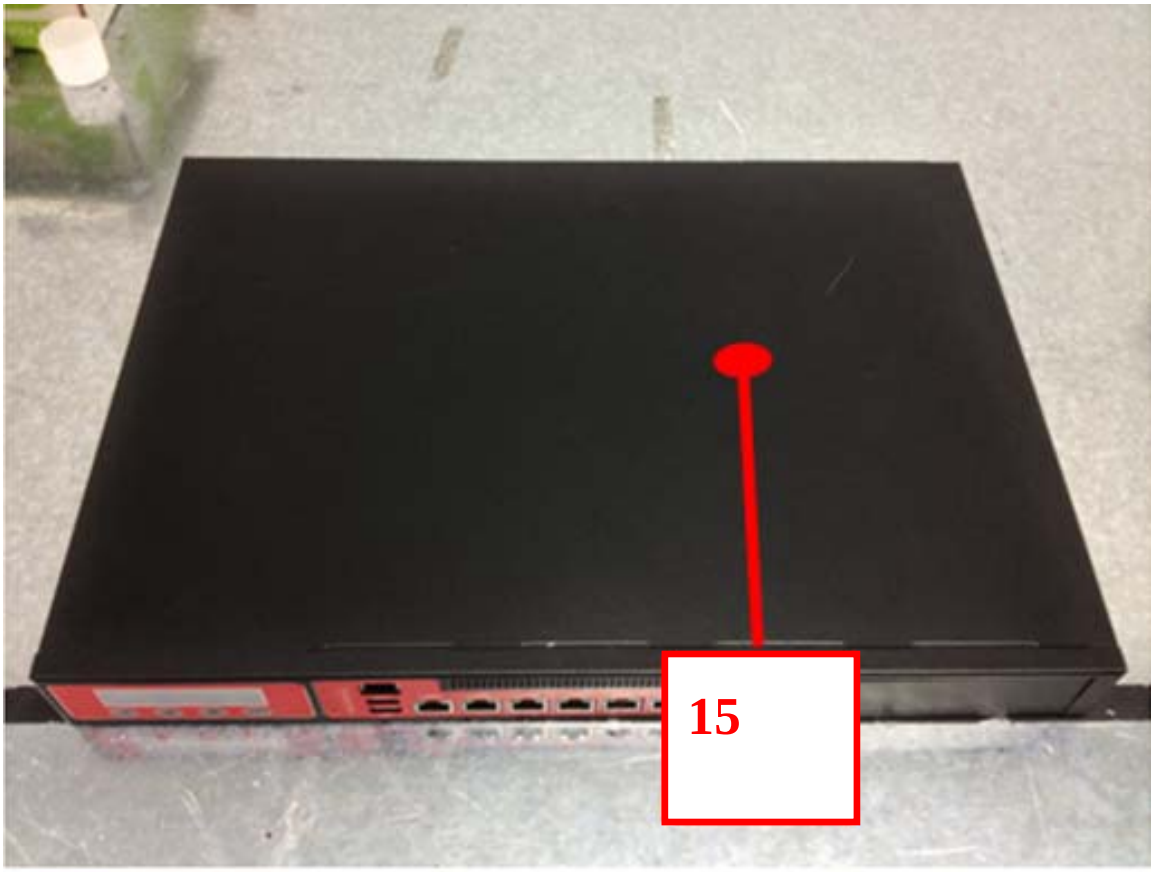
Terminal Recorder:

IR Thermal



Temperature rise test





Temperature rise test

Thermal profile data:

FWS-8711

Point / Temp. Stage(℃)	Spec	40	25	Note
01 CPU	73.78	53.2	38.2	
02. U11 – (TF) .Desktop Lynx Point PCH.SMD.INTEL.QE93 C226 C-1 QS	104	51.7	36.7	
03. U6 - (TF)REG. Ultra Low Dropout.Linear Regulator.APEC.APE8955MP	125	52.1	37.1	
04. Q41- (TF)PWR..N-MOSFET.NXP.PH7030AL	85	54.5	39.5	
05. VR1- (TF)REQ. ADJUSTABLE PRECISION ZENER.SHUNT.NS.LM431AIM3	175	49.4	34.4	
06. U50- (TF)IC.PCI-E GigaBit Ethernet Chipset.QFN 64P.SMD.Intel.WGI211AT	85	50.0	35.0	
07.U27- (TF)Push Button Switch.4P.DIP.12V DC.50mA.威祈.1102VB	85	52.8	37.8	
08. U57- (TF)IC. Chipset.QFN 64P.SMD.Intel.WGI211AT	85	50.6	35.6	
09. Q15- (TF)PWR.SMD. MOSFET 30V.NXP.PH7030AL	150	57.3	42.3	
10. L5- (TF) Controler.TQFN 40P.SMD.Intersil.ISL95820CRTZ	100	56.1	41.1	
11.U1- (TF)IC.VR12.5 PWM Controler.TQFN 40P.SMD.Intersil.ISL95820CRTZ	85	51.8	36.8	
12. Memory –1	85	44.2	29.2	
13. Memory– 2	85	43.7	28.7	
14. HDD	70	40.4	25.4	
15. Chassis internal Temperature	NA	39.0	24.0	
16. Chassis Surface Temperature	NA	41.0	26.0	

Note(*):
1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.
2. "Tm" indicates the measured Tc value under working environmental temperature within product specification.
3. Judgment Criteria:
- **Fail** : Tm > Tc; The measured value is over specification.
- **Margin Pass** : Tc > Tm > Tc-5℃; The measured value is within specification with margin. It is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-5℃; The measured value is with safety margin.

Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-7811)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 03-10 ~ 12-2014

Test Product:FWS-7811

Test Site: AAEON QE Dept.

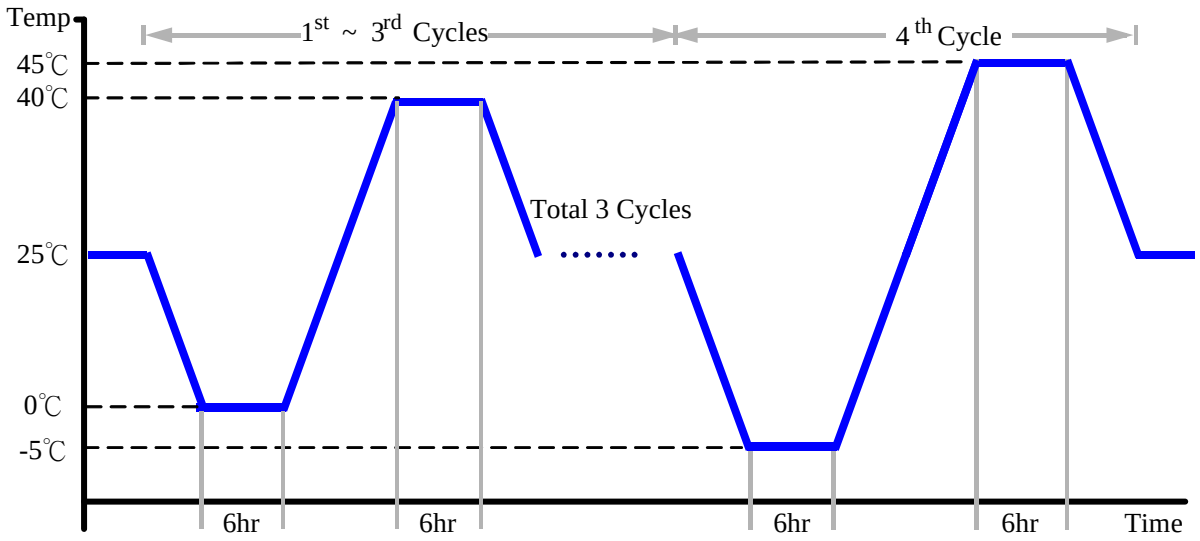
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 10/10/12
Serial Number: 3898

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-7811)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 03-08 ~10-2014

Test Product: FWS-7811

Test Site: AAEON QE Dept.

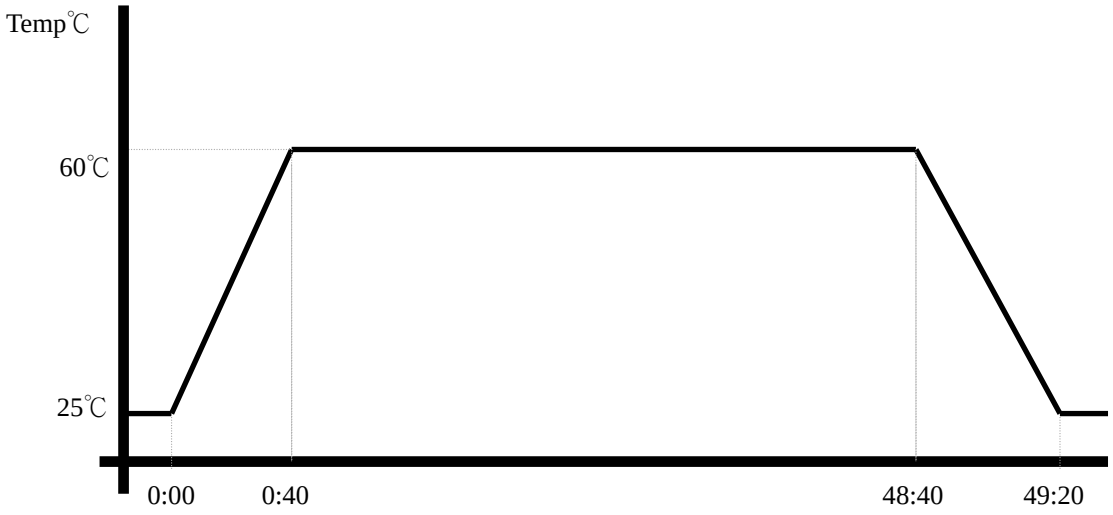
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 10/01/13
Serial Number: 3898

Testing Item:

1. Test Temperature: 60℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-7811)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 03-06 ~08-2014

Test Product: FWS-7811

Test Site: AAEON QE Dept.

Test Standard: Refer to 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-D7S-100+1 N2
Date of Calibration: 10/01/13
Serial Number: 3898

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (FWS-7811)

Test Result:
No issues were found after the low temperature storage test.

Humidity test

Test Date: 03-04 ~06-2014

Test Product: FWS-7811

Test Site: AAEON QE Dept.

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

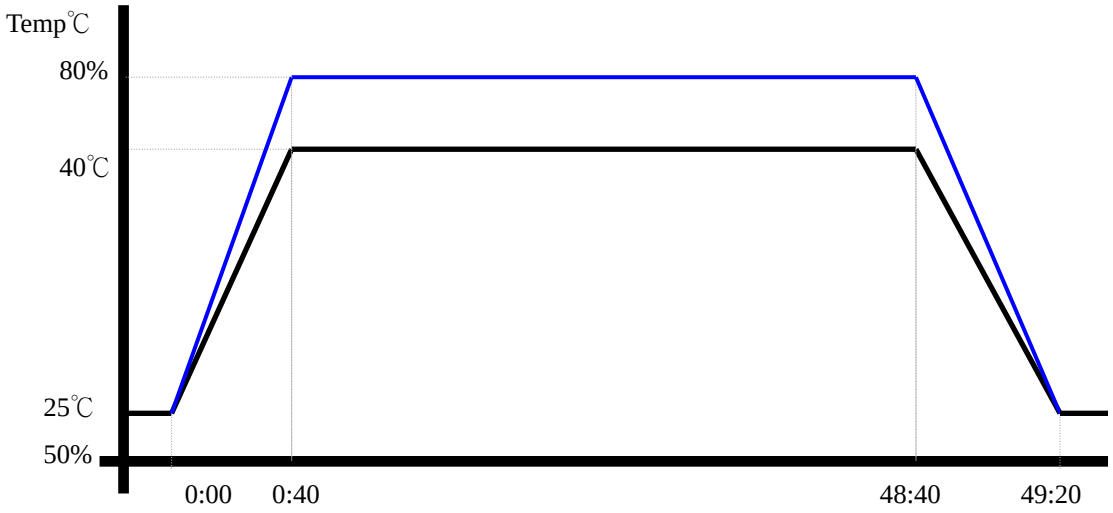
Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 10/01/13
Serial Number: 3898

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 80%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-7811)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test

Test Date: 03-02~04-2014

Test Product: FWS-7811

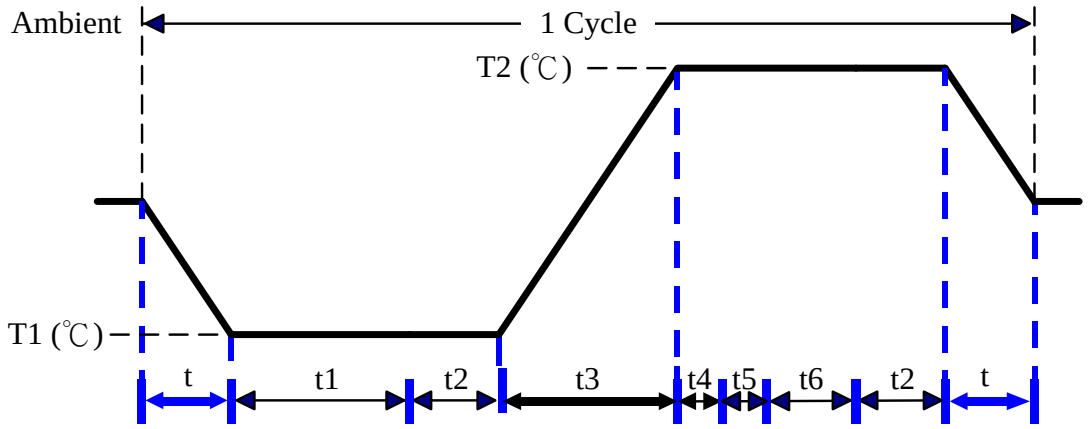
Test Site: AAEON QE Dept.

Test Standard: Refer to 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-D7S-100+1 N2
Date of Calibration: 10/01/13
Serial Number: 3898

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 burn in test 7.1
t5: Win 7 Software restart test 3 times
Test Software: Windows 7

Test Result:

a. No issues were found during the cold start test.

b. No issues were found during the hot start test.