AHP-2173

Environment Test Report

Report NO: 14P020005

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
2014-01-28	**Tom Lin**	**Jerry Chen**

Test item list

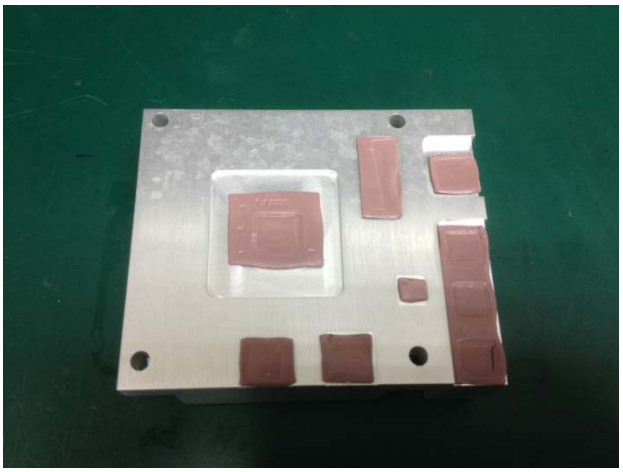
Testing Result

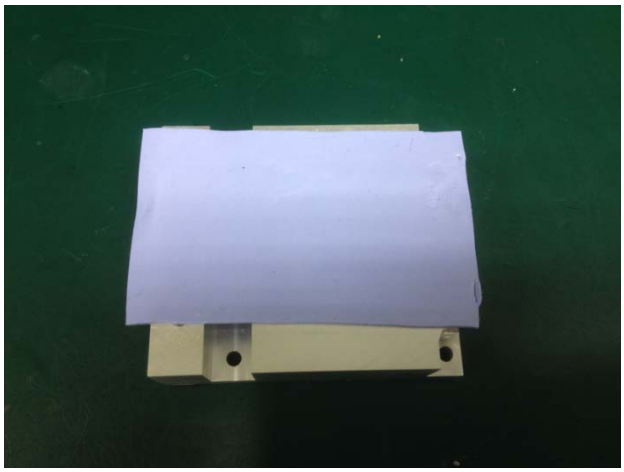
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Device Information
1.	**Fanless Touch Panel**	AHP-2173 A1.0
	1.LCD	AUO G170EG01 v1 / 1280*1024
	2.Main Board	GENE-CV05 A1.0
	3.CPU	Intel Atom D2550 1.86GHz
	4.BIOS / Version	AHP02173 R0.2(H2H3AM02)(01/14/2014)
	5.Chipset	North Bridge(Intel Gedarview M/D) / PCH Bridge(Intel NM10)
	6.Memory Type	Transcend DDR3-1333 2GB / SEC K4B2G0846D
	7.Industry SATA HDD	TOSHIBA MK1060GSC 2.5” 100G
	8.Test Software	Windows 7 / Run PassMark Burn In Test 7.1
2.	**Adapter**	FSP084-DMAA1 12V/7A

Heat Sink





HDD Kit

Temperature rise test

Test Date: 01-27~28-2014

Test Product: AHP-2173

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

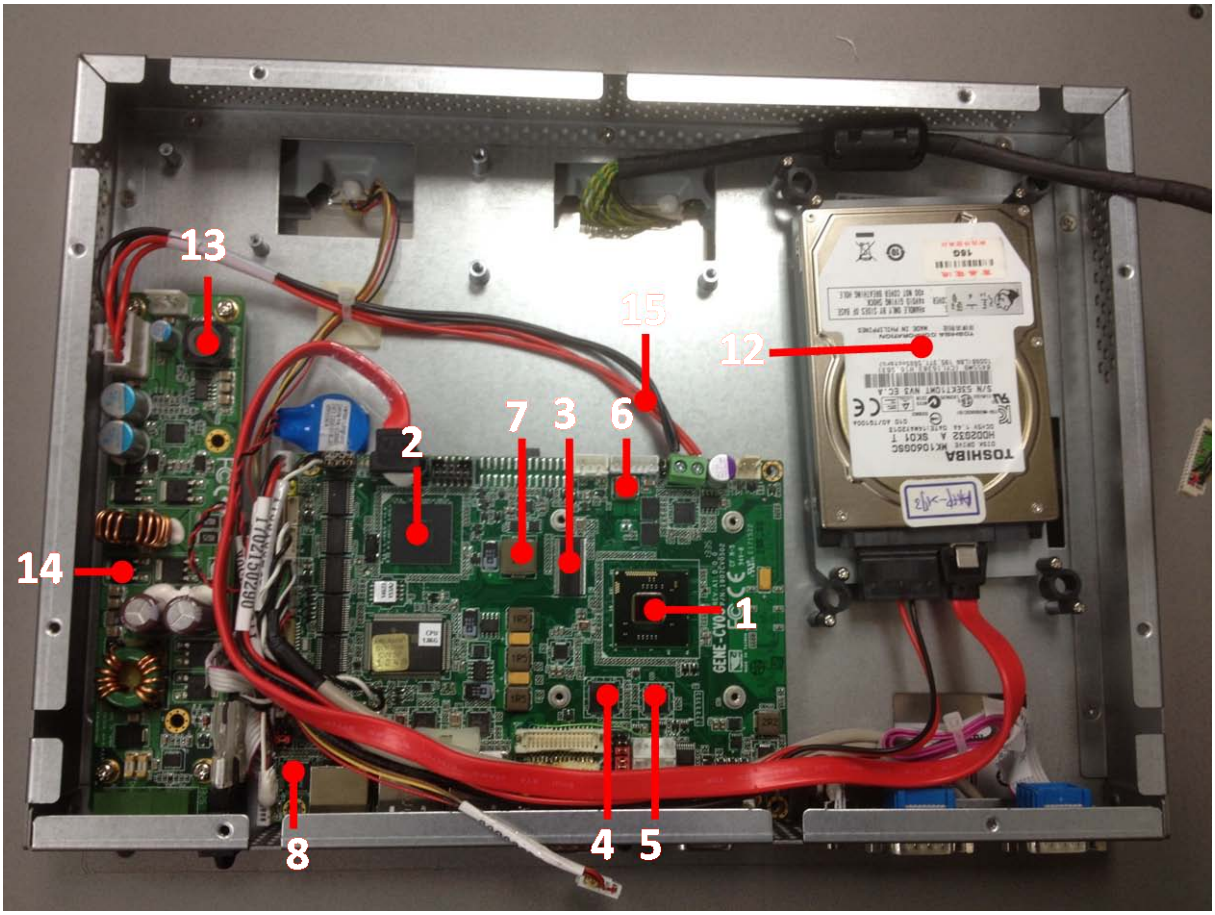
Test Condition:

Ambient temperature: 55℃
Continuous running till thermal stable (within less than 1℃)

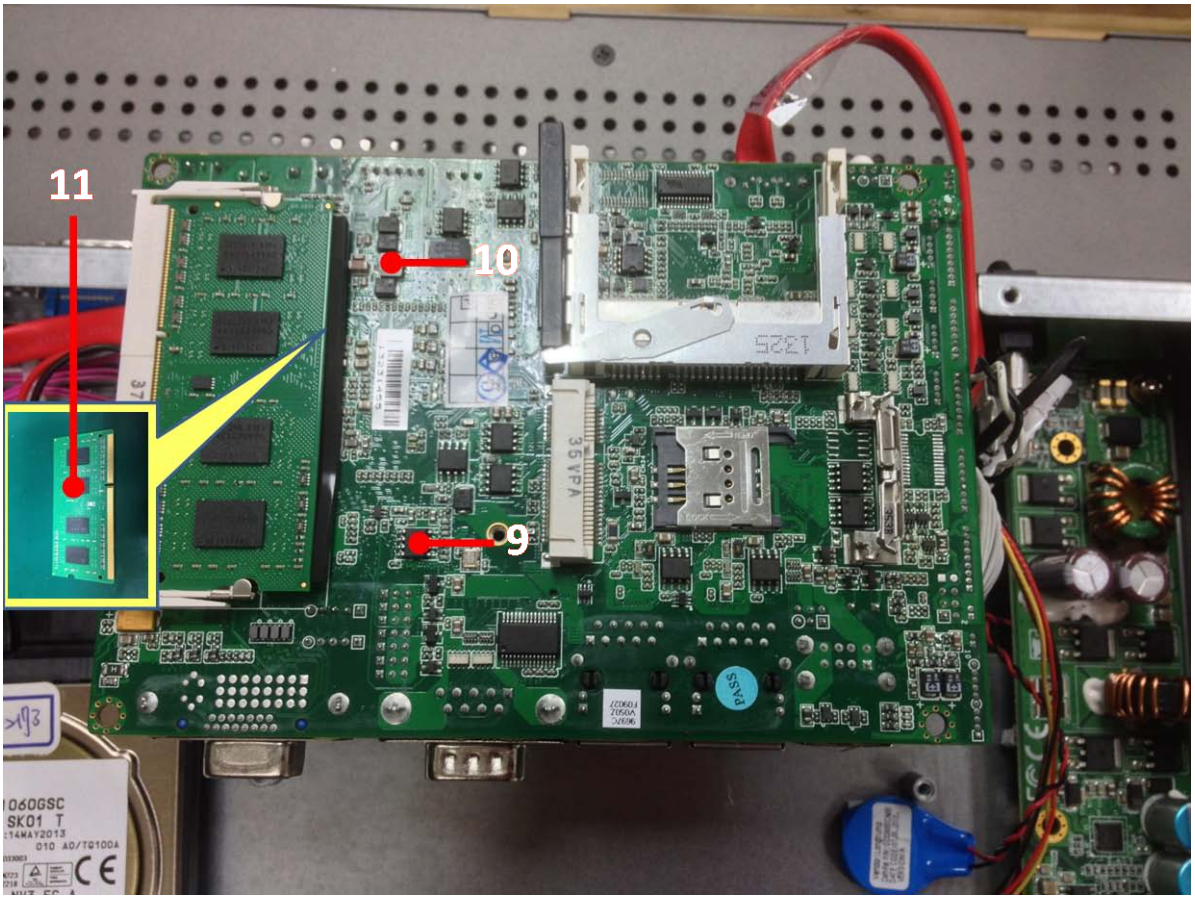
Test Software:

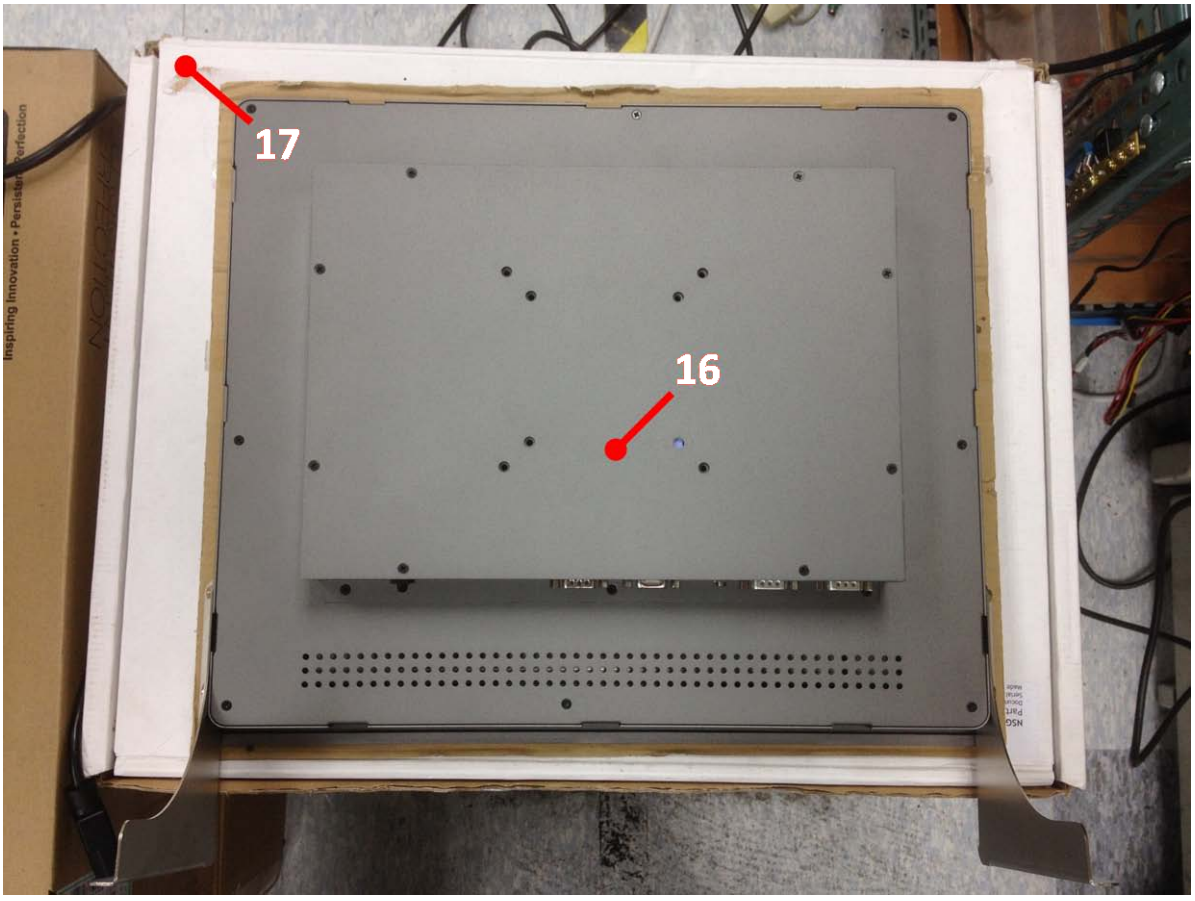
Windows 7 / Run PassMark Burn In Test 7.1 Pro

Terminal Recorder:



Temperature rise test





Temperature rise test

Thermal profile data:

Point / Temp. Stage(℃)	Spec	40	55	Note
GENE-CV05 A1.0				
01. U17 - Intel Atom D2550 1.86GHz	100	45.5	75.5	
02. U7 - (TF)NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	53.9	83.9	
03. U13 - (TF)CLOCK GENERATOR.IDT.9LPRS501PGLF	95	44.2	74.2	
04. U29 - (TF)DisplayPort to LVDS Converter.Chrontel.CH7511B-BF	85	45.8	75.8	
05. U31 - (TF)Digital Video Level Shifter..PERICOM.PI3VDP411LSZBE	85	44.3	74.3	
06. L1 - (TF)COIL.ZenithTek.ZPWM-6030M-1R5M	125	54.7	84.7	
07. L2 - (TF)COIL.ZenithTek.ZPWM-1040MB-3R3M	125	44	74	
08. U42 - (TF)AUDIO CODEC.REALTEK.ALC662-GR	100.5	43.7	73.7	
09. U66 - (TF).Serial EEPROM.64K.CH7511B Boot ROM.Microchip.24LC64	125	47	77	
10. L7 - (TF)COIL.ZenithTek.ZPWM-4020MP-1R0	125	57.1	87.1	
11. Memory - Transcend DDR3-1333 2GB (SEC / K4B2G0846D)	85	46.8	76.8	
12. HDD - Toshiba MK1060GSC 100GB	85	47.4	77.4	
PER-P17D B1.0				
13. L1	150	42.7	72.7	
14. Q5	85	45.4	75.4	
15. Control Box Inside Air Temperature	N/A	44.4	74.4	
16. Control Box External Surface Temperature	N/A	40.7	70.7	
17. Chamber Air Temperature	N/A	25	55	

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 plus margin.
- **Margin** : Tc > Tm > Tc-5℃; The measured value is within specification with margin.
  For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-5℃; The measured value is with safety margin.

4. Defect NO. N/A

Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-2173)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 01-23 ~27-2014

Test Product: AHP-2173

Test Site: AAEON QE Dept.

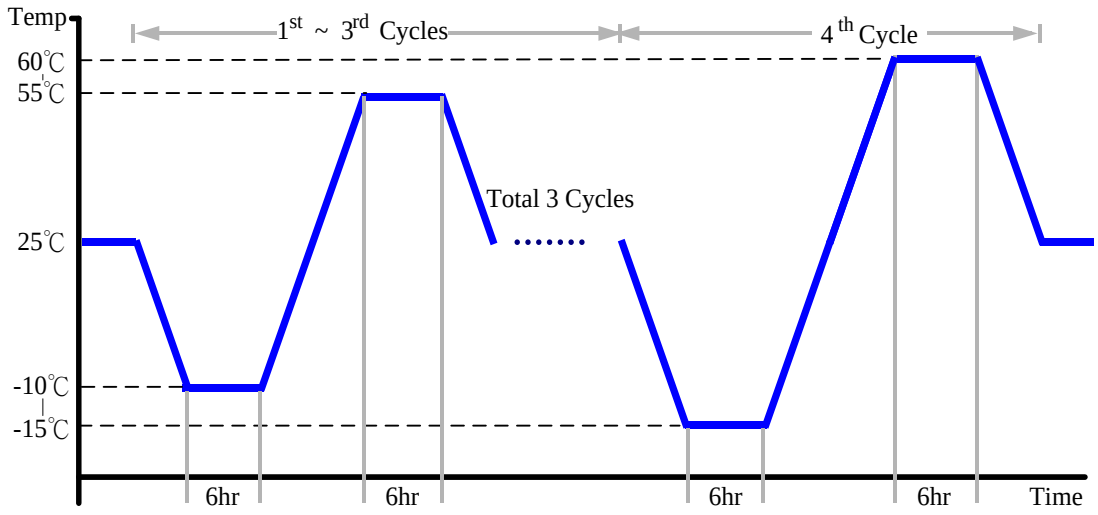
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 2013/06/11
Serial Number: 9095KT

Test Condition:

1. Test Low Temperature: -10℃ (1~3 cycles)
   -15℃ (4^{th} cycle)
2. Test High Temperature: 55℃ (1~3 cycles)
   60℃ (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 (AHP-2173)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 01-15~17-2014

Test Product: AHP-2173

Test Site: AAEON QE Dept.

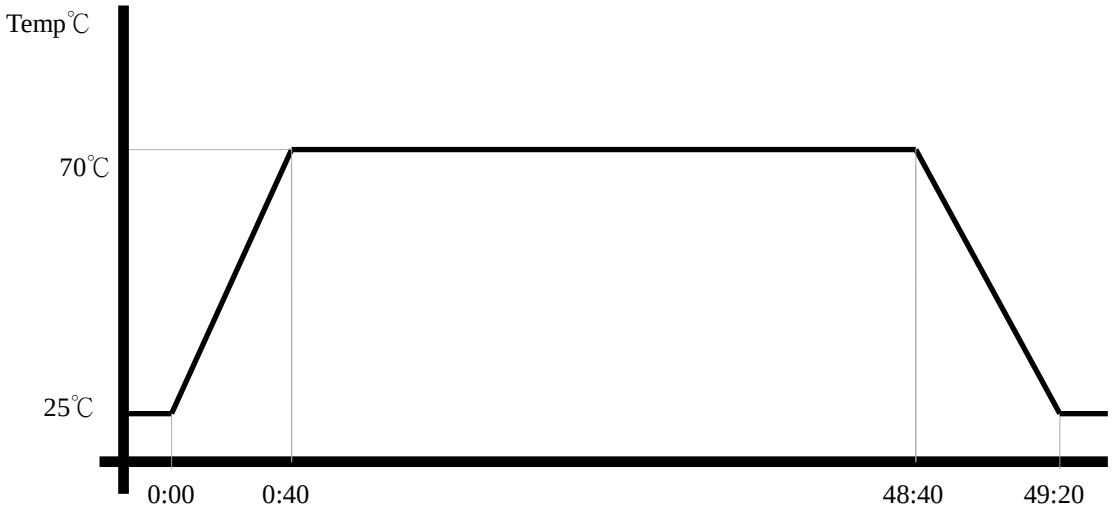
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 2013/06/11
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 70℃
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 (AHP-2173)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 01-17~20-2014

Test Product: AHP-2173

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-B6T-150+LN2
Date of Calibration: 2013/06/11
Serial Number: 9095KT

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 (AHP-2173)

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

Humidity test

Test Date: 01-20~22-2014

Test Product: AHP-2173

Test Site: AAEON QE Dept.

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

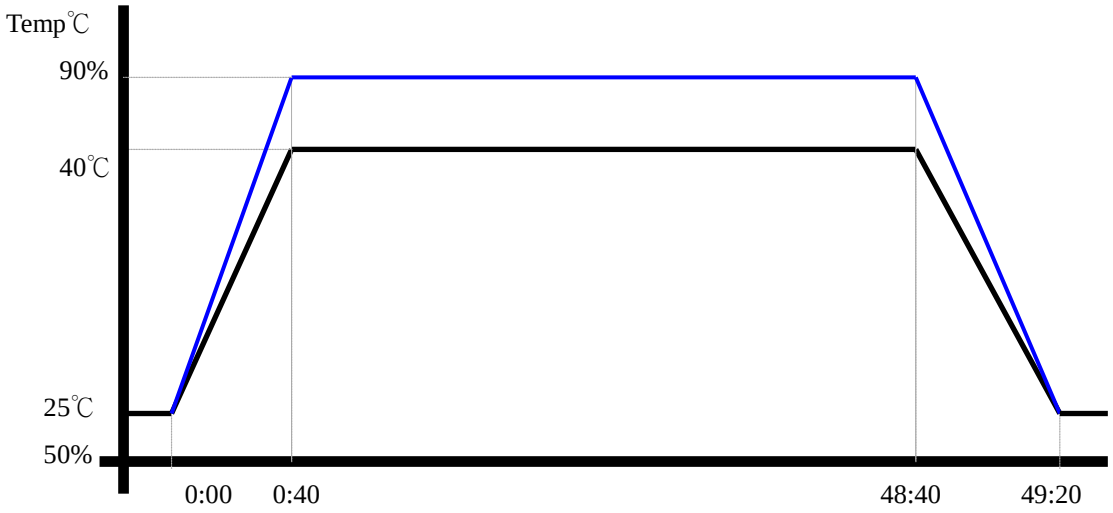
Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 2013/06/11
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 90%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 (AHP-2173)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test

Test Date: 01-22~23-2014

Test Product: AHP-2173

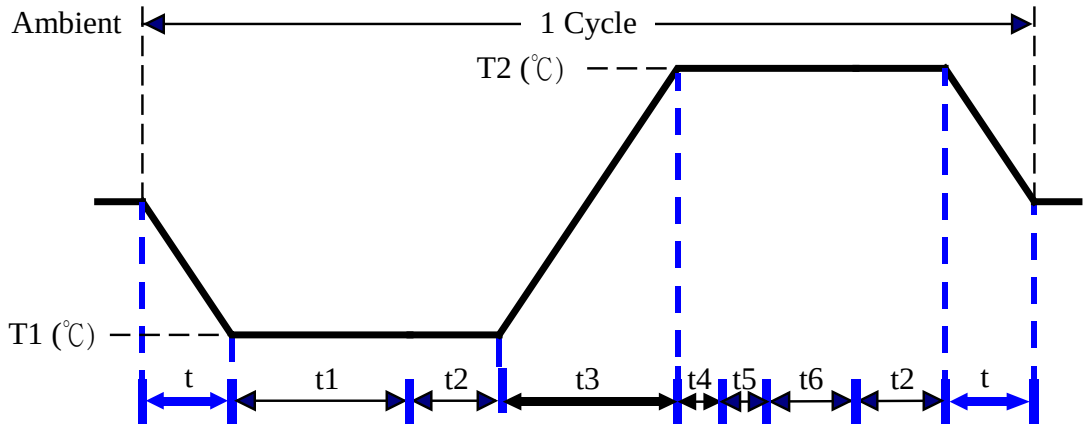
Test Site: AAEON QE Dept.

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-B6T-150+LN2
Date of Calibration: 2013/06/11
Serial Number: 9095KT

Test Condition:



Parameters	Description
T1	-15℃
T2	60℃
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 7.0 Pro
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.