AHP-1083

Environment Test Report

Report NO: 13P020004

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**
2013-04-08	**Tom Lin**	**Andy 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

Item	Device Information	
SYSTEM PC Model / Ver.	GENE-CV05 A1.0	
CPU	Intel Atom D2550 1.86GHz	
BIOS / Version	AHP-1083 R0.1(A183AM01)(03/06/2013)	
South Bridge	Intel NM10	
Memory Type (industry)	DLS DDR3-1066 4GB SEC013HCH9 K4B2G0846C	
HDD (industry)	TOSHIBA 2.5" SATA MK1060GSC 100G	
Operating System	Windows 7 Professional English 64 Bit	
DC Adapter	FSP060-DBAB1	

System picture:
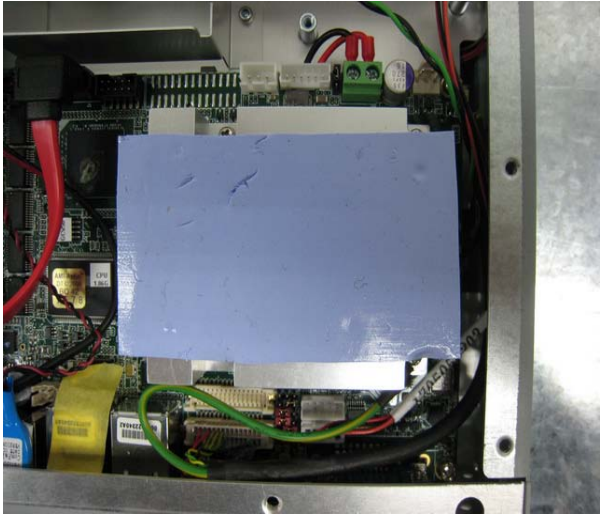
Temperature rise test

Test Date: 04-08-2013

Test Product: AHP-1083

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: 10/08/2012
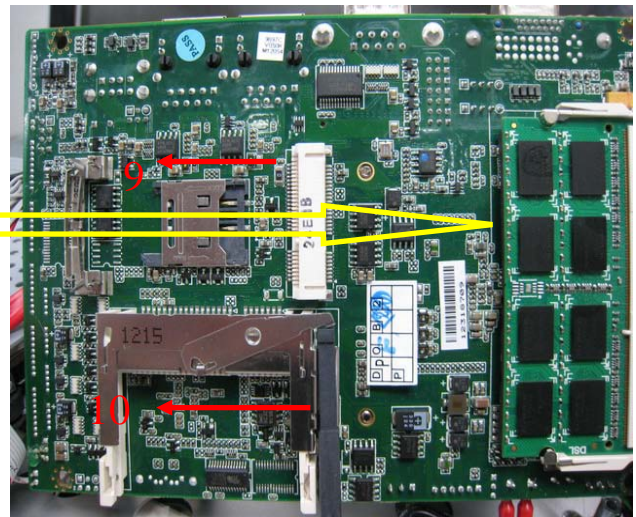> Serial Number: 12A323190
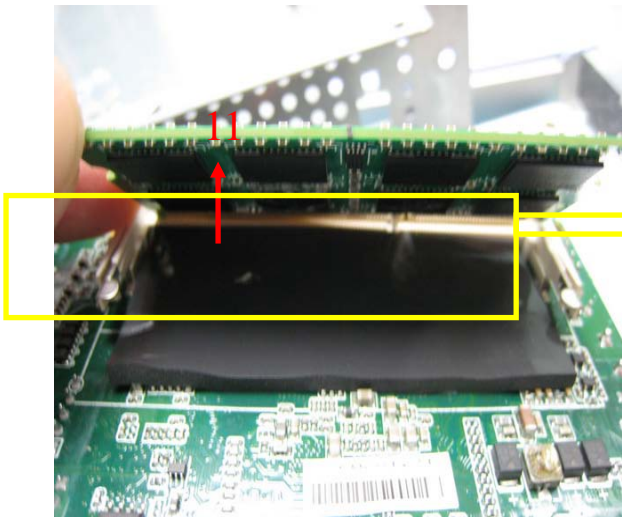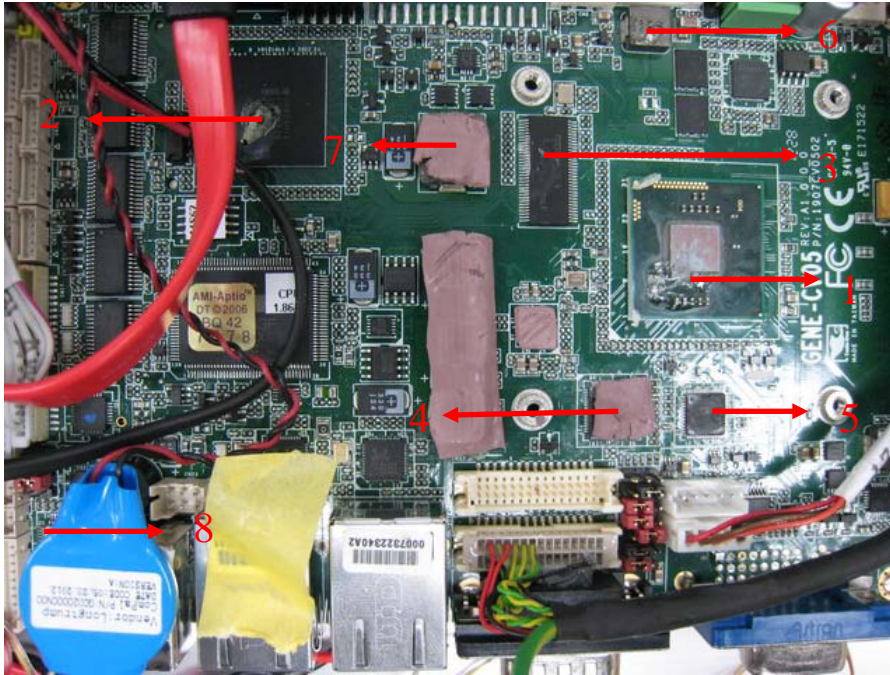
Test Condition:

> Ambient temperature: 50℃
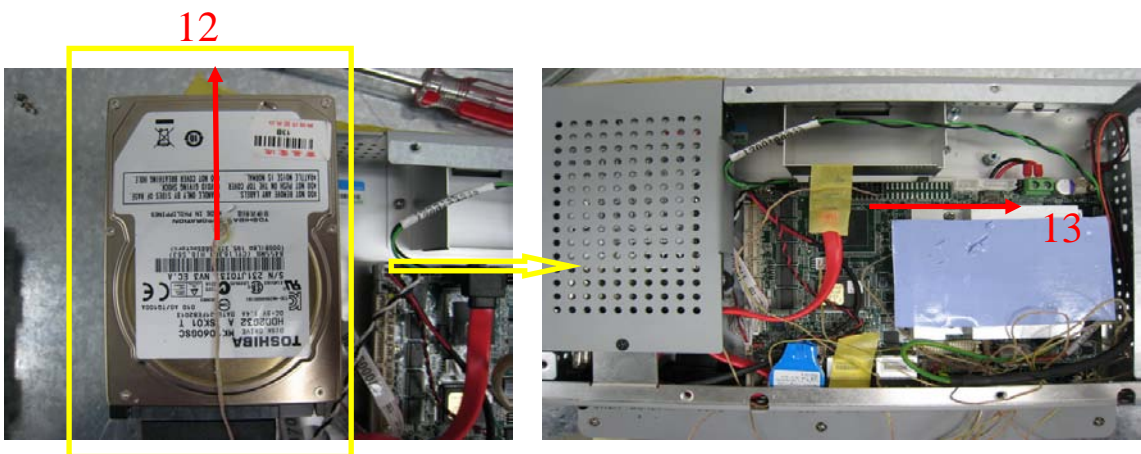> Continuous running till thermal stable (within less than 1℃)

Test Software:

> Windows 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Temperature rise test

Temperature rise test

Temperature rise test

Thermal profile data:

Point	Temp. Stage(℃)	Spec	50	Note
01. CPU - Intel Atom D2550 1.86GHz		100	75.1	
02. U7 - (TF)NM10 Express Chipset.INTEL.CG82NM10.SLGXX		115	98.3	
03. U13 - (TF)CLOCK GENERATOR.IDT.9LPRS501PGLF		95	74.9	
04.U29 - (TF)DisplayPort to LVDS Converter.Chrontel.CH7511B-BF		85	75.6	
05. U31- (TF)Digital Video Level Shifter..PERICOM.PI3VDP411LSZBE		85	76.6	
06. L1 - (TF)COIL.ZenithTek.ZPWM-6030M-1R5M		125	89.4	
07. L2 - (TF)COIL.ZenithTek.ZPWM-1040MB-3R3M		125	74.3	
08. U42 - (TF)AUDIO CODEC.REALTEK.ALC662-GR		100.5	77.4	
09. U57 - (TF)Regulator.ANPEC.APL5912-KAC-TRL		100	79.5	
10. L7- (TF)COIL.ZenithTek.ZPWM-4020MP-1R0		125	85.6	
11. Memory - DLS DDR3-1066 4GB SEC013HCH9 K4B2G0846C		95	81.4	
12. HDD- TOSHIBA 2.5" SATA MK1060GSC 100G		85	74.1	
13. Internal air		N/A	74.2	
14. External Heatsink		N/A	67.8	
15. Chamber Temperature		N/A	50	

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.

Sample Configuration & Quantity Under Test:

      Quantity: 1 (AHP-1083)

Test Result:

      No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 03-29~ 30-2013

Test Product: AHP-1083
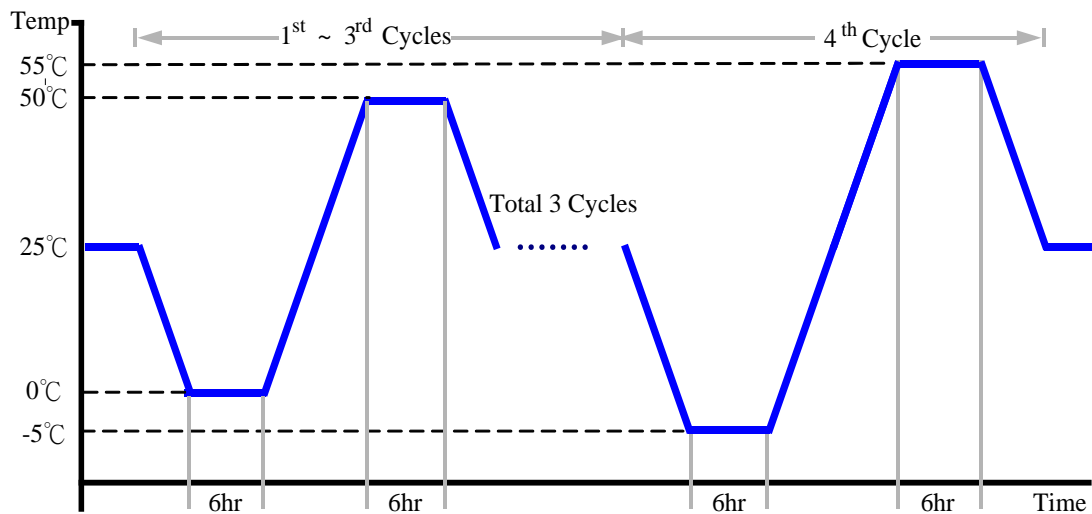
Test Site: AAEON QE Dept.

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-D75-100+LN2

Date of Calibration: 06/20/2012
Serial Number: 6487KT

Test Condition:

1. Test Low Temperature: $0°C$ (1~3 cycles)

$-5°C$ (4th cycle)

2. Test High Temperature: $50°C$ (1~3 cycles)

$55°C$ (4th cycle)

3. Test dwell time: 6Hrs

4. Temperature slope: $2°C$/min

5. Test cycle: 4 cycles

6. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-1083)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 04-5 ~ 7-2013

Test Product: AHP-1083
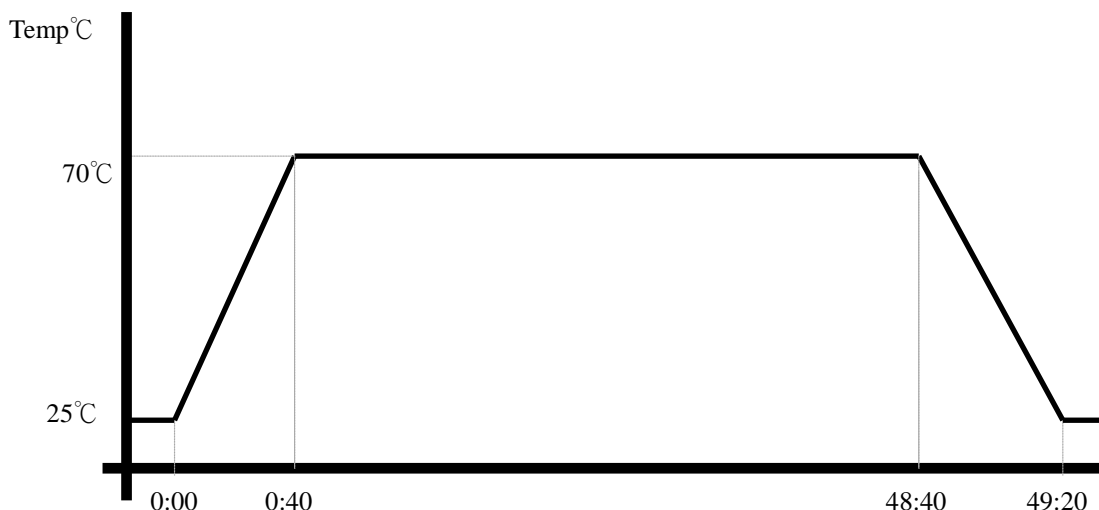
Test Site: AAEON QE Dept.

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-D75-100+LN2
Date of Calibration: 06/20/2012
Serial Number: 6487KT

Testing Item:

1.   Test Temperature: 70℃

2.   Test Times: 48Hrs

3.   Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro

4.   Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (AHP-1083)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 04- 3~ 5-2012

Test Product: AHP-1083

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-D75-100+LN2

Date of Calibration: 06/20/2012
Serial Number: 6487KT

Testing Item:

1. Test Temperature: -20℃

2. Test Times: 48Hrs

3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro

4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
     Quantity: 1 (AHP-1083)

Test Result:

No issues were found after the low temperature storage test.

Humidity test

Test Date: 04-1 ~ 3-2013
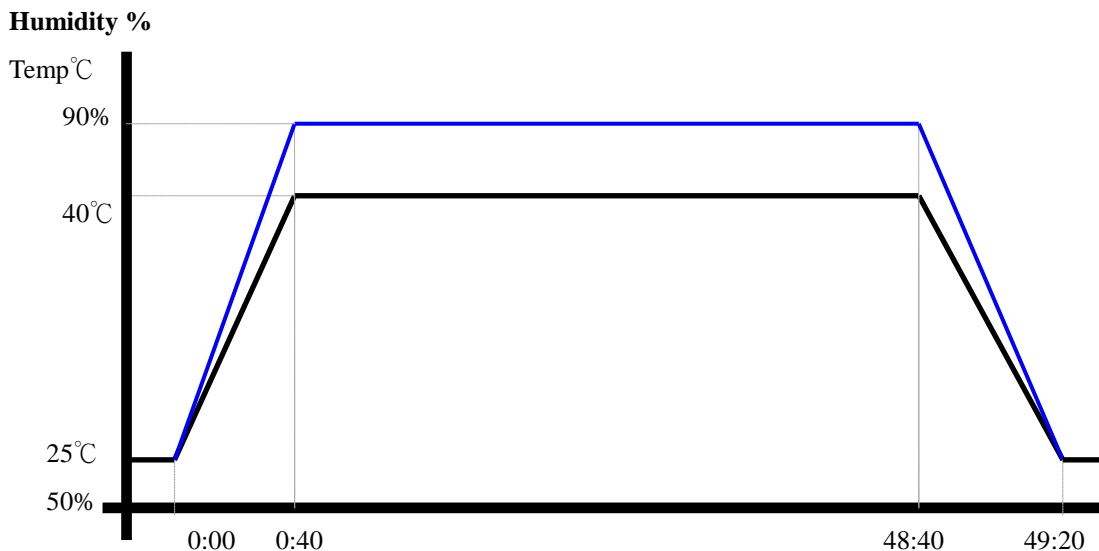
Test Product: AHP-1083

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-D75-100+LN2

Date of Calibration: 06/20/2012
Serial Number: 6487KT

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 7.0 Pro
5. Test Environment Curve:

Humidity %

Sample Configuration & Quantity Under Test:
Quantity: 1 (AHP-1083)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test
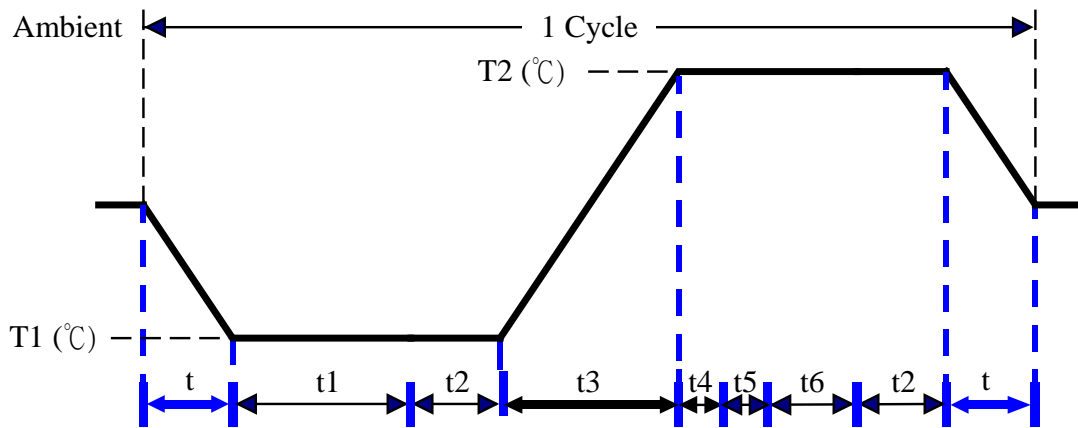
Test Date: 04-01-2013

Test Product: AHP-1083

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-D75-100+LN2

    Date of Calibration: 06/20/2012
    Serial Number: 6487KT

Test Condition:

Parameters	Description
T1	-5℃
T2	55℃
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.