AHP-1154

Environment Test Report

Report NO: 15P090018

Test Cause
For ATRF No: QE150212 Request

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
2015-03-27	**KJ Wang**	**Rex Chang**

Test item list

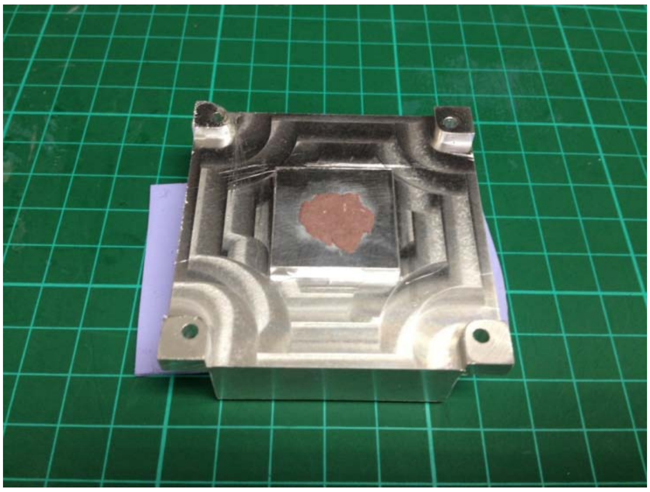
Testing Result

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-1154 Ver. 1.0
	1.LCD	15”, XGA 1024*768, LED backlight / MITSUBISHI.AC150XA02.
	2.Main Board	GENE-BT05 Ver. 1.0
	3.CPU	Intel Celeron® J1900 2GHz
	4.BIOS / Version	AHP-1154 R0.1(H1F4BM01) (01/19/2015)
	6.Memory Type	DSL DDR3L 1600 8GB / 1444ZVH V73CBG04808RAJJ111 (Wide Temp.)
	7.SATA HDD	Toshiba MK1060GSC 100GB
	8.Test Software	Windows 7 / Run PassMark Burn In Test 7.1
2.	**Adapter**	FSP084-DMAA1 12V 7A MAX

Heat Sink



System & HDD

Temperature rise test

Test Date: 03-26~27-2015

Test Product: AHP-1154

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: 09/11/14
Serial Number: 12A323190

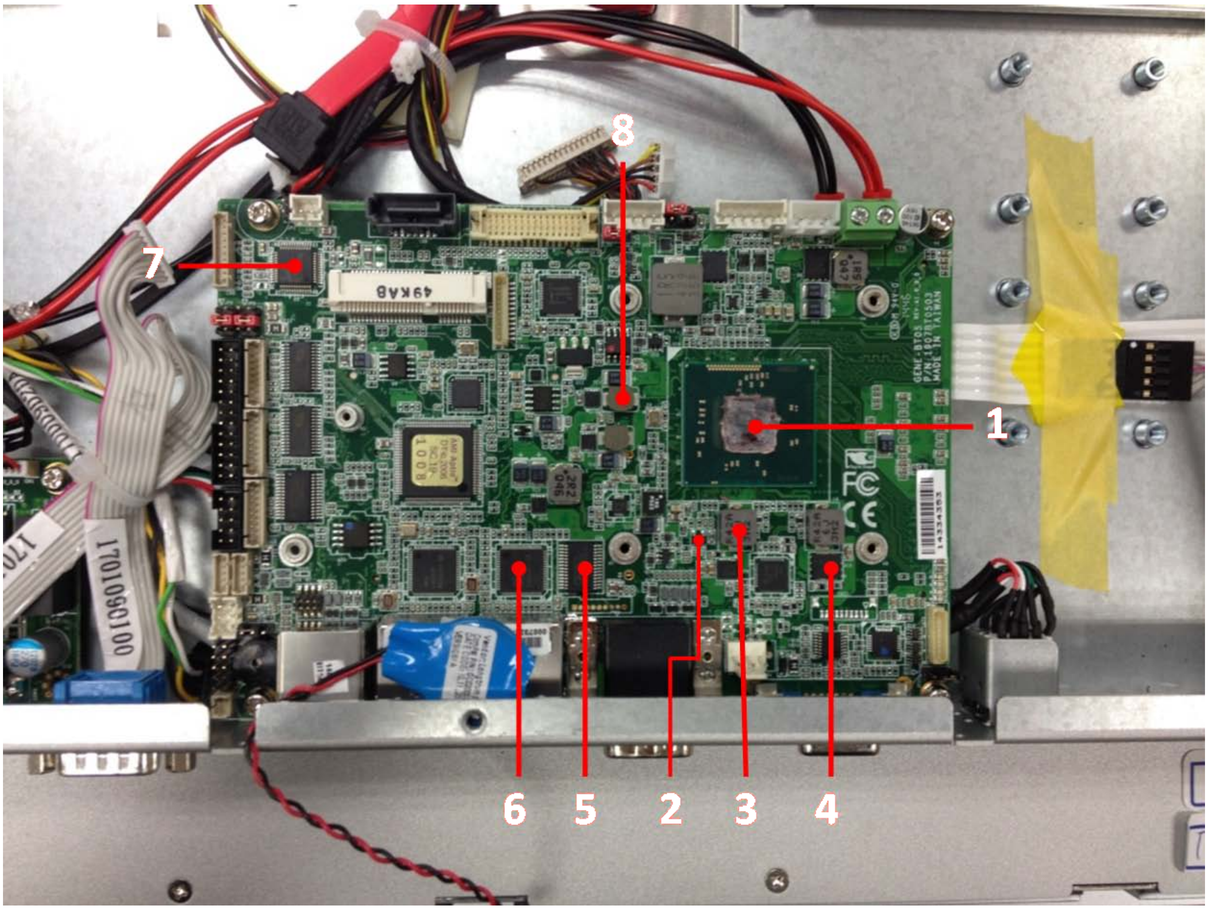
Test Condition:

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

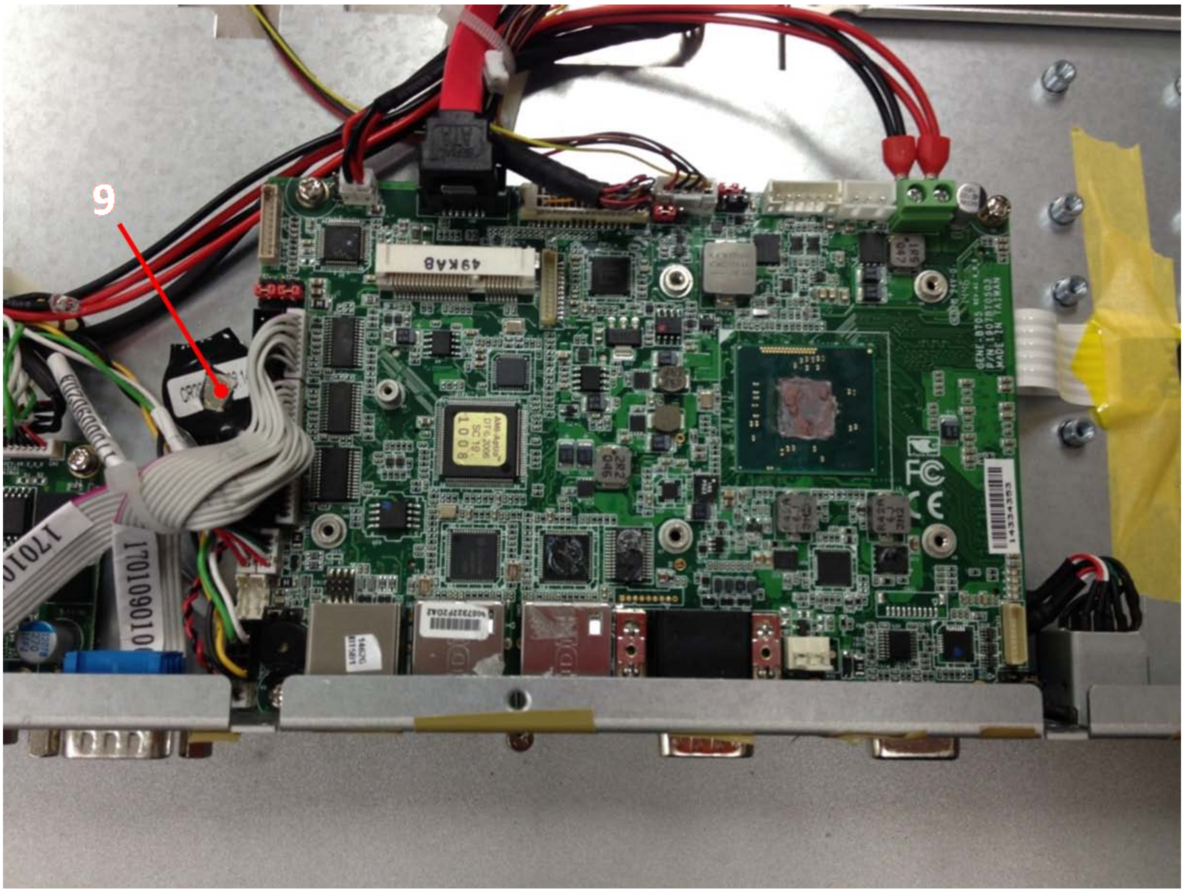
Test Software:

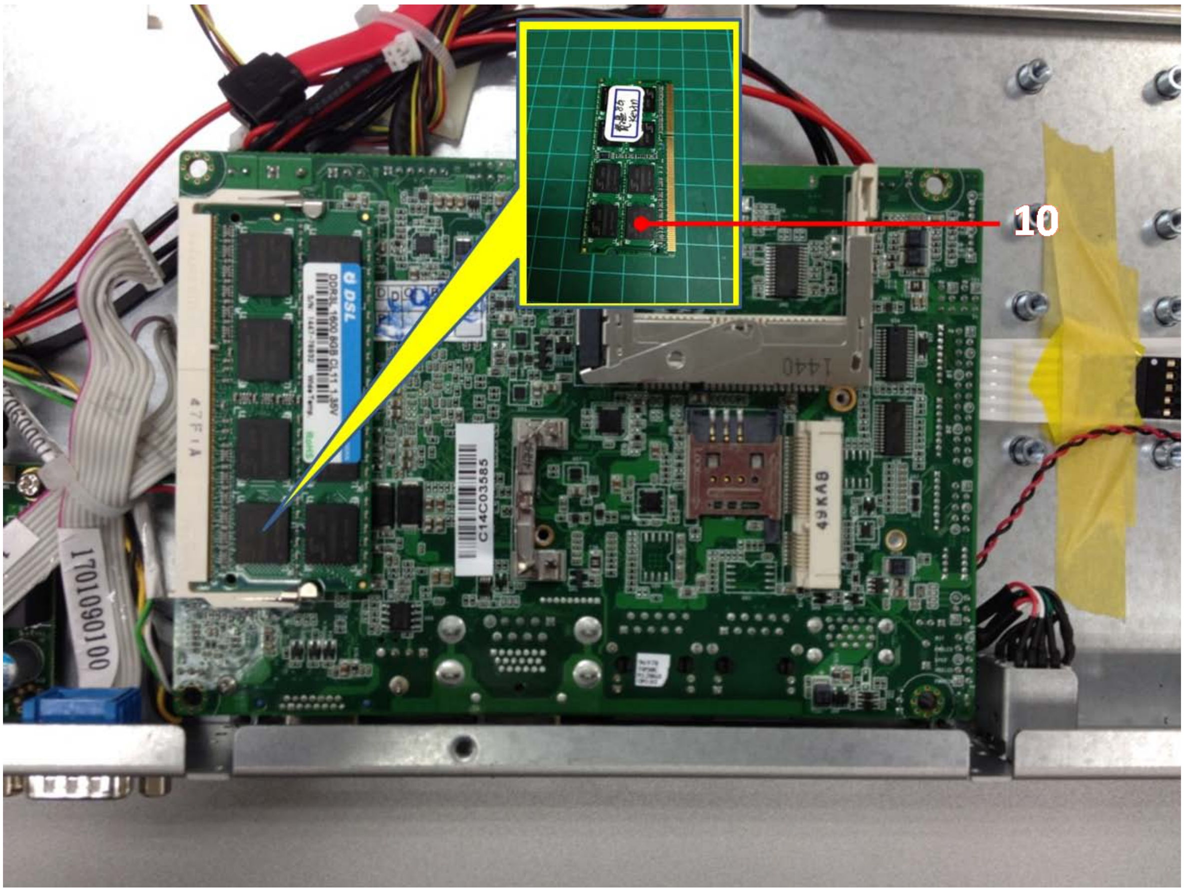
Windows 7 / Run PassMark Burn In Test 7.1 Pro

Terminal Recorder:

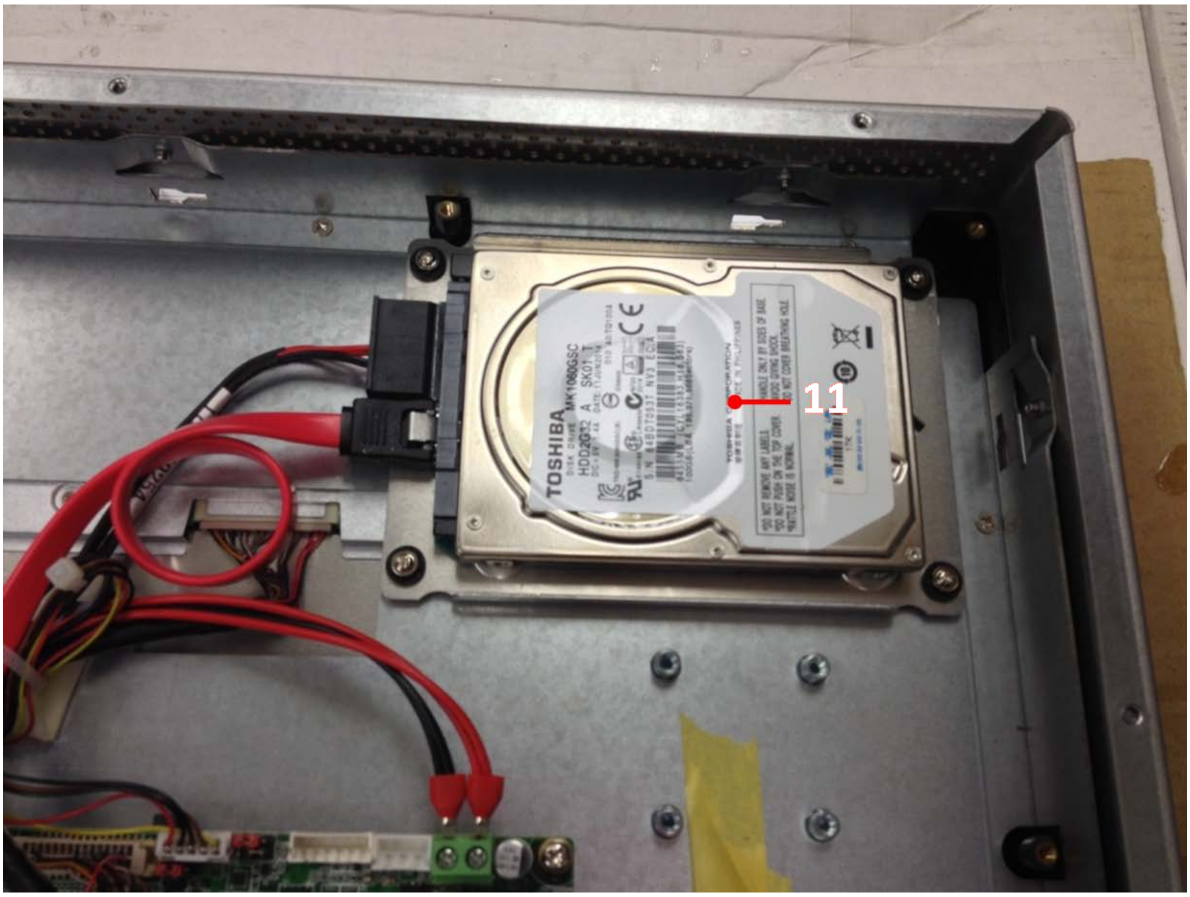


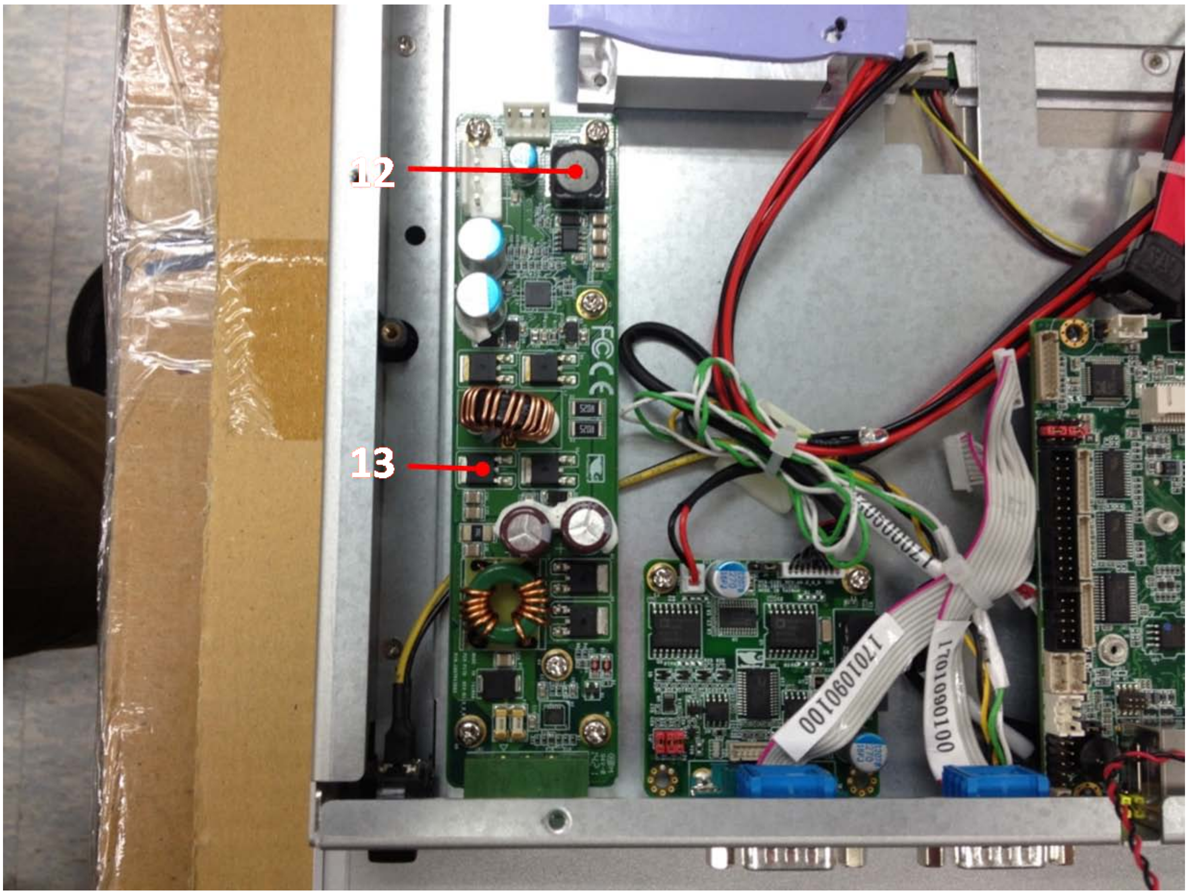
Temperature rise test



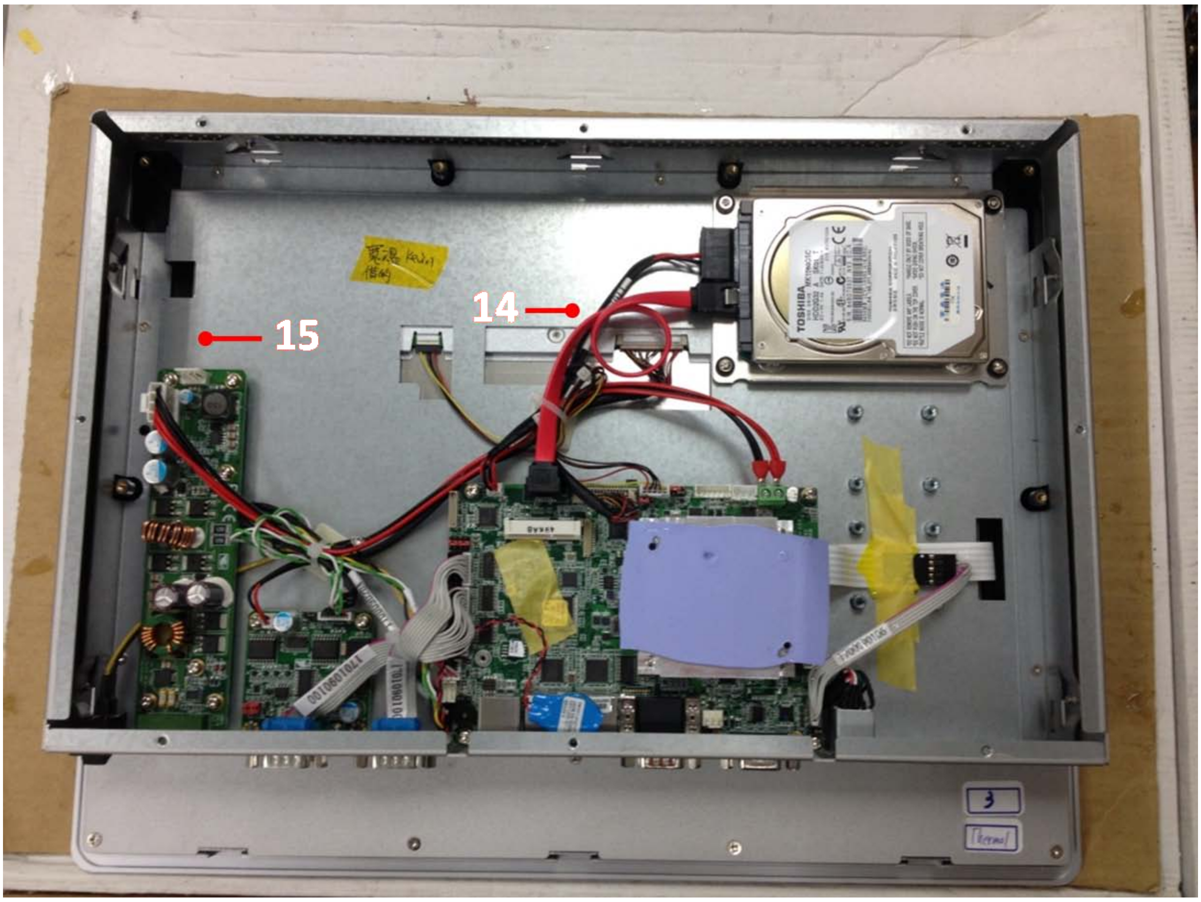


Temperature rise test





Temperature rise test



Temperature rise test

Thermal profile data:

Point Temp. Stage(℃)	Spec	25	50	Note
GENE-BT05 Rev. A1.0				
01. CPU - Intel Celeron® J1900 2GHz	105	44.2	69.2	
02. U26 - UP0107BMA5-00	100	53.4	78.4	
03. L7 - Panasonic.ETQP4LR42AFM	130	45.7	70.7	
04. Q15 - NTMFD4901NFT1G	100	47.1	72.1	
05. U24 - ADM213EARSZ	100	47.8	72.8	
06. U21 - Intel i211AT	85	47.9	72.9	
07. U5 - ALC892-CG	100.5	53.3	78.3	
08. L3 - MPLCG0530L3R3	135	46.7	71.7	
09. CN31 - BATTERY.3V.MAXELL.CR2032M1S8-LF	85	38.2	63.2	
10. RAM - DSL DDR3L 1600 8GB / 1444ZVH V73CBG04808RAJJ111	85	50.8	75.8	
11. HDD - Toshiba MK1060GSC 100GB	85	42.4	67.4	
PER-P17D B1.0				
12. L1 - COIL.15uH.DCR=27mOhm.Idc=4.5A.GOTREND.GSDRH-127-P-T-150M	100	37.5	62.5	
13. Q5 - PWR.SMD.TO-252AA.N-Channel MOSFET.FAIRCHILD.FDD5670	125	39.7	64.7	
14. Control Box Inside Air Temperature-1	N/A	37.9	62.9	
15. Control Box Inside Air Temperature-2	N/A	35.6	60.6	
16. Control Box External Surface Temperature	N/A	38.2	63.2	
17. Chamber Air Temperature	N/A	25	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.

4. Defect NO. N/A

Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-1154)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 03-23~25-2015

Test Product: AHP-1154

Test Site: AAEON QE Dept.

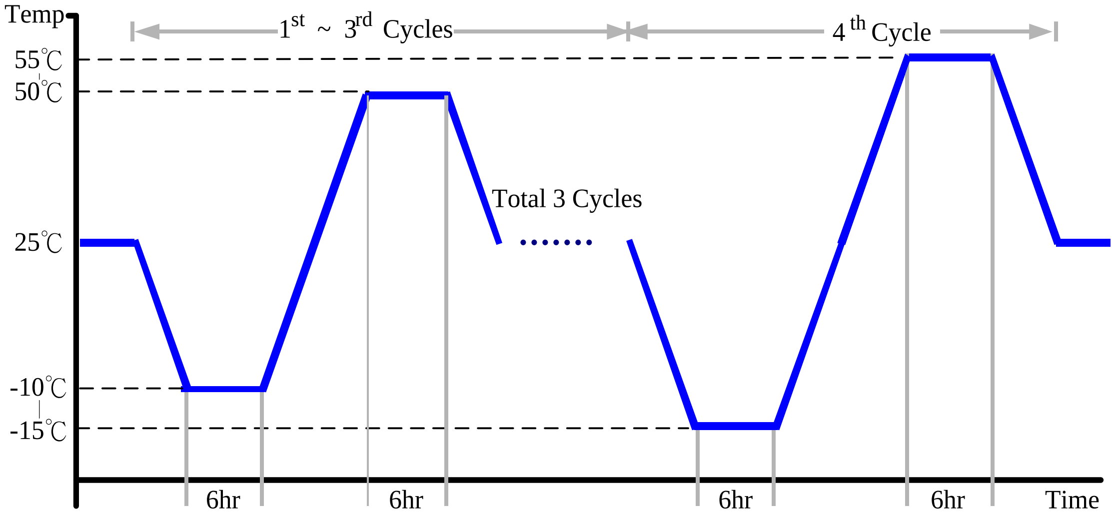
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/11/’14
Serial Number: A0004

Test Condition:

1. Test Low Temperature: -10℃ (1~3 cycles)
   -15℃ (4th cycle)
2. Test High Temperature: 50℃ (1~3 cycles)
   55℃ (4th 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-1154)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 03-20~23-2015

Test Product: AHP-1154

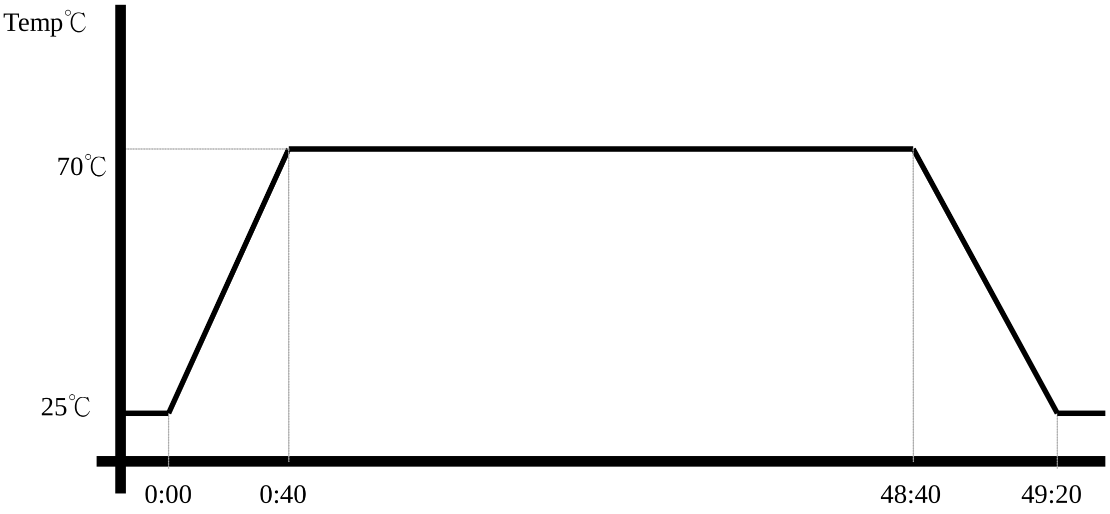
Test Site: AAEON QE Dept.

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-D7TS-100+LN2
Date of Calibration: 09/11/’14
Serial Number: A0004

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-1154)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 03-18~20-2015

Test Product: AHP-1154

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-D7TS-100+LN2
Date of Calibration: 09/11/’14
Serial Number: A0004

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-1154)

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

Humidity test

Test Date: 03-16 ~ 18-2015

Test Product: AHP-1154

Test Site: AAEON QE Dept.

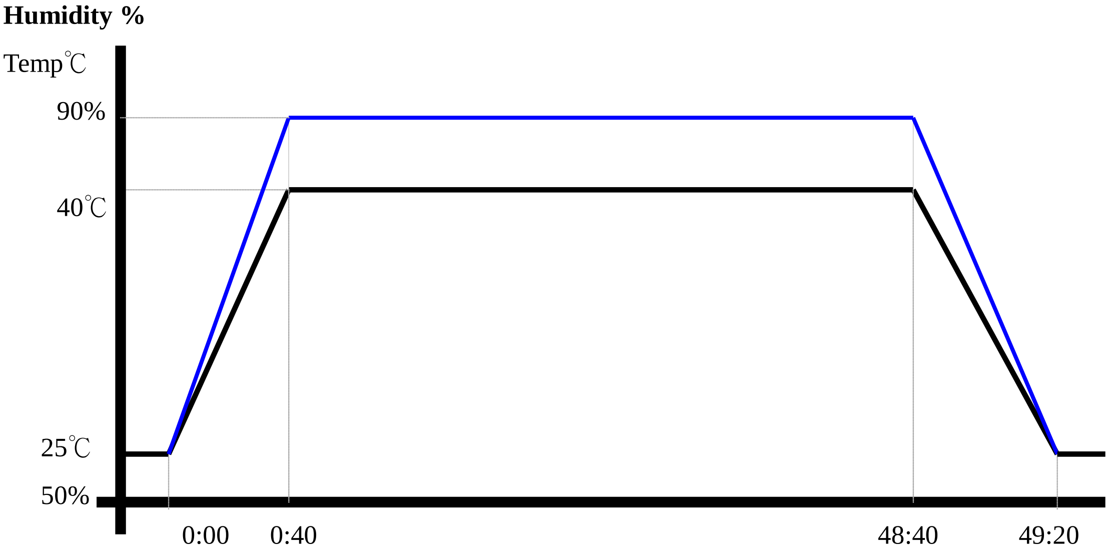
Test Standard: Refer to IEC 68-2-3 Testing procedures
Test Ca: Damp heat, steady state (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/11/’14
Serial Number: A0004

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:



Sample Configuration & Quantity Under Test:
Quantity: 1 (AHP-1154)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test

Test Date: 03-12~13-2015

Test Product: AHP-1154

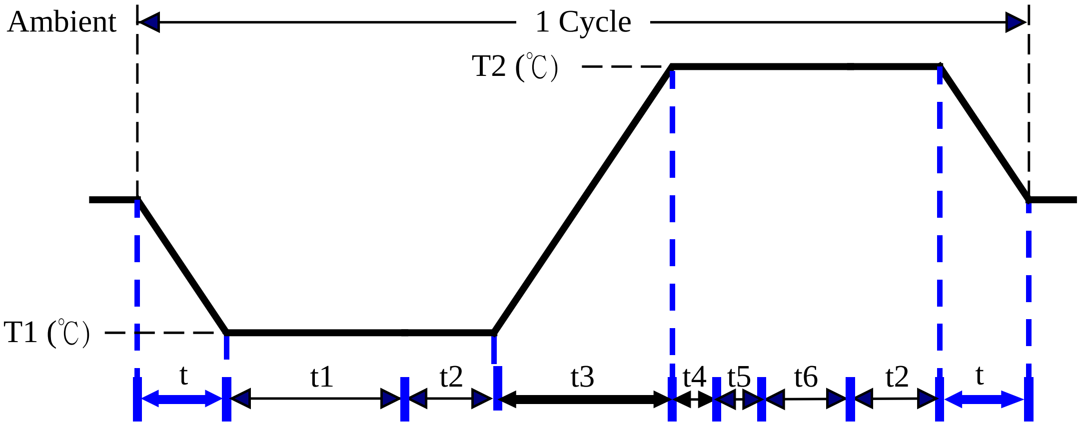
Test Site: AAEON QE Dept.

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-D7TS-100+LN2
Date of Calibration: 09/11/'14
Serial Number: A0004

Test Condition:



Parameters	Description
T1	-15℃
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 7.1 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.