AFP-6123

Environment Test Report

Report NO: 12P020007

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 : **Temperature at 2 components were estimated to be in marginal temperature points in comparion with component datasheets.**

Issue date	Approval	Test Engineer
2012-06-01	Vincent Chen	Clement Chien

Test item list

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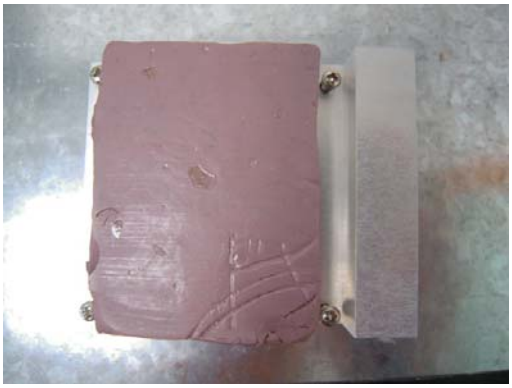
Testing Result

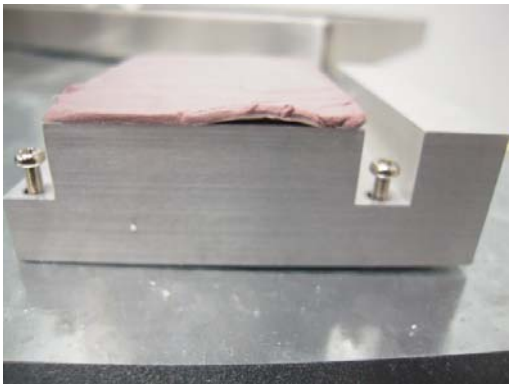
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
1.	**System**:	AFP-6123
	1.Main board	GENE-CV05 A1.0
	2.CPU Type	Onboard Intel Atom D2700 / 2.13GHz
	2. Chipset	NM10 Express Chipset.INTEL.CG82NM10
	3. Memory	DSL DDR3 1066 4GB CL7
	4. SATA HDD	Toshiba MK1060GSC 2.5” 100GB
	5. Test Software	Windows 7 / Run BurnIn test 7.0
2.	Adapter :	MPU100-108

Heat Pipe





Temperature rise test

Test Date: 05-30-2012

Test Product: AFP-6123

Test Site: AAEON QE 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: 10/12/2011
Serial Number: 12A323190

Test Condition:

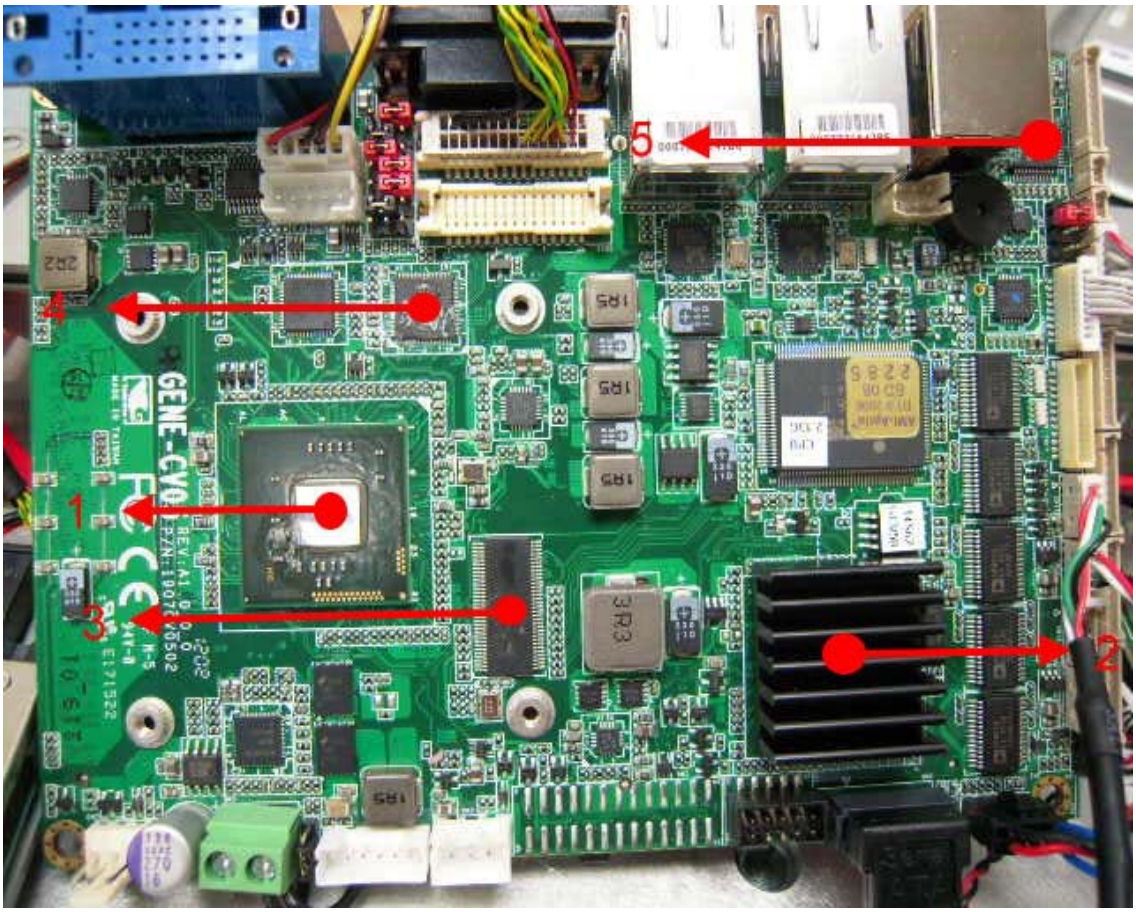
Ambient temperature:50℃
Continuous running till thermal stability (within less than 1℃)

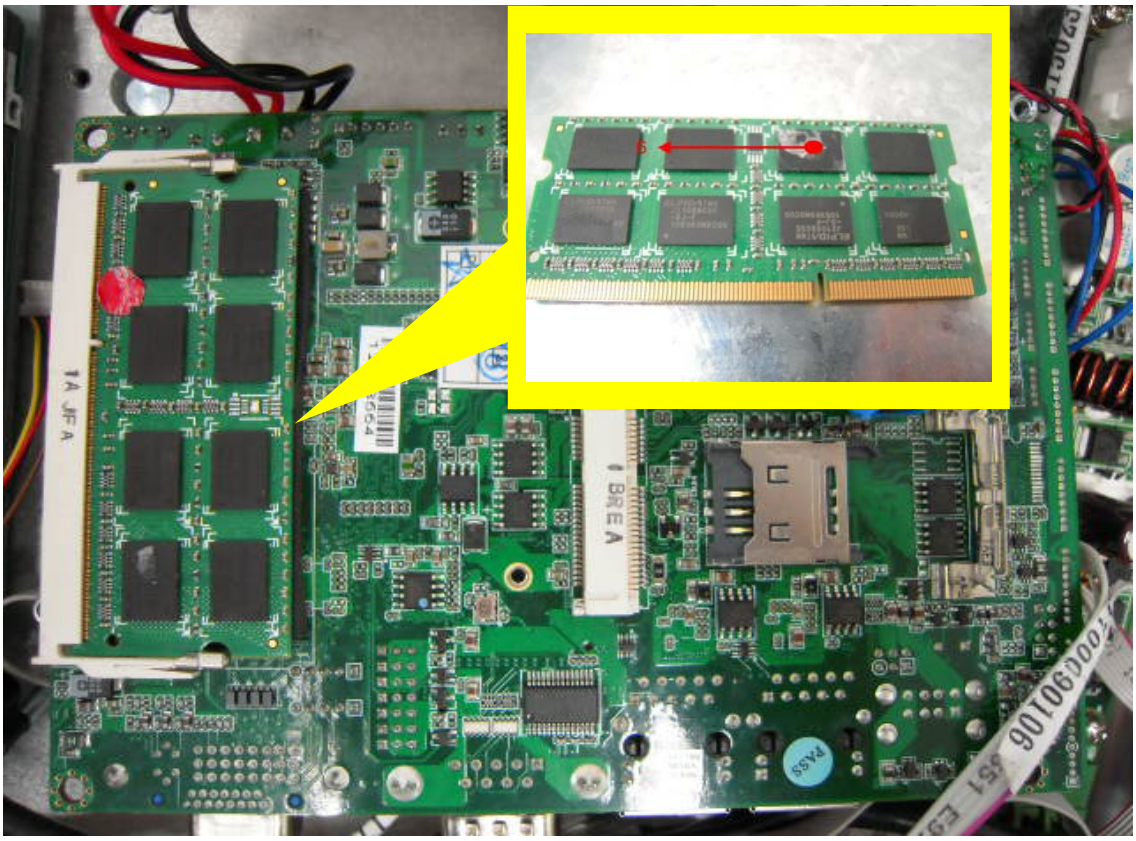
Test Software:

Windows 7 / Run PassMark Burn In Test 7.0

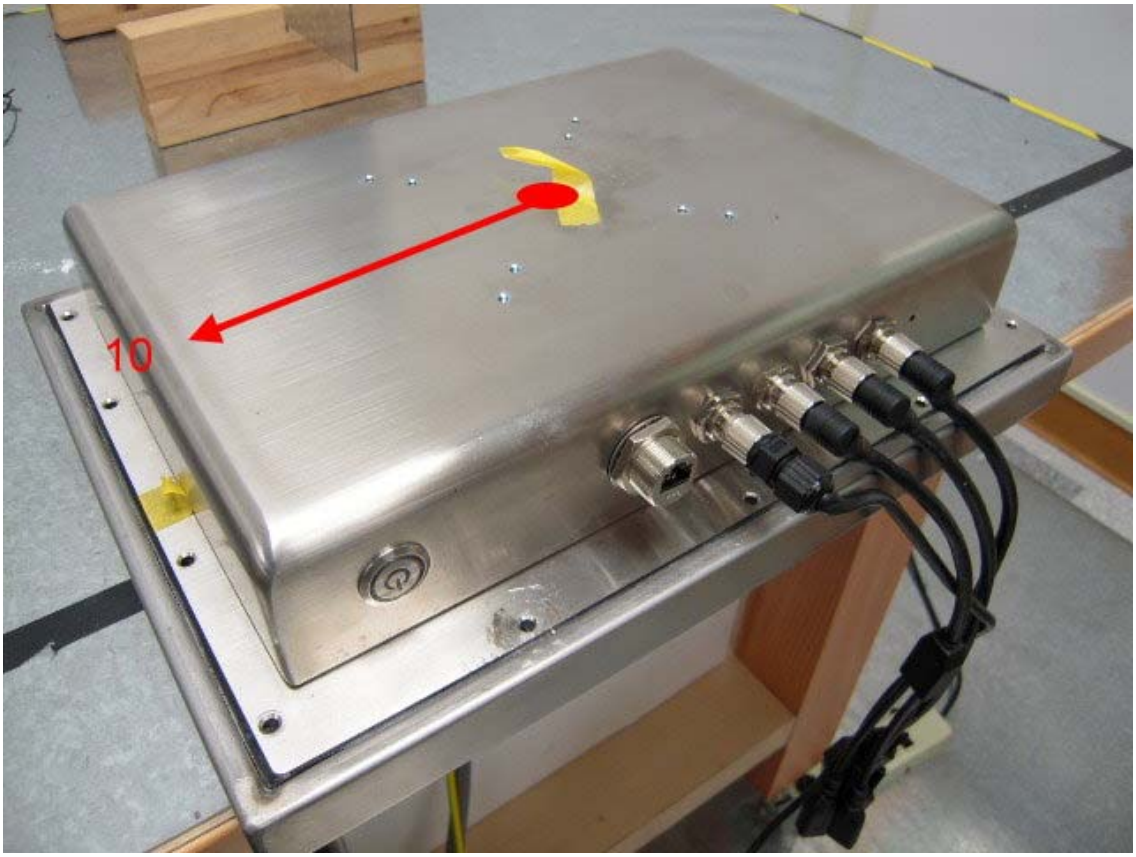
Terminal Recorder:

Temperature rise test





Temperature rise test



Temperature rise test

Thermal profile data:

Point \ Temp. Stage(℃)	Spec	50	Note
01. CPU - (TF)INTEL Cedarview CPU.FCBGA 559 pin.2.13Ghz.D2700	100	91.5	
02. U7 - (TF)NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	91.7	
03. U13 - (TF)CLOCK GENERATOR.IDT.9LPRS501PGLF	115	81.3	
04. U29 - (TF)DisplayPort to LVDS Converter.Chrontel.CH7511B-BF	100	85.4	
05. U42 - (TF)AUDIO CODEC.REALTEK.ALC662-GR	100.5	95.7	**Note 4**
06. Memory	95	92.5	**Note 4**
07. HDD	85	77.2	
09. Control Box Inside Air Temperature	N/A	69.3	
10. Control Box Surface Temperature	N/A	71.5	
11. Chamber Air Temperature	N/A	50.1	

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.

4. Defect NO. P120203QED04

Temperature Measurement Table:

TA=49.9℃ / **Location**	**Temp. Rise (Thermal Couple)**	**SpeedFan 4.46 (Read from BIOS)**	
CPU	91.5	**Core 0**	83℃

Sample Configuration & Quantity Under Test:

Quantity: 1 (AFP-6123)

Test Result:

No problem was found during the temperature rise operation test.

Temperature cycle test

Test Date: 05-27 ~ 29-2012

Test Product: AFP-6123

Test Site: AAEON QE Internal Lab.

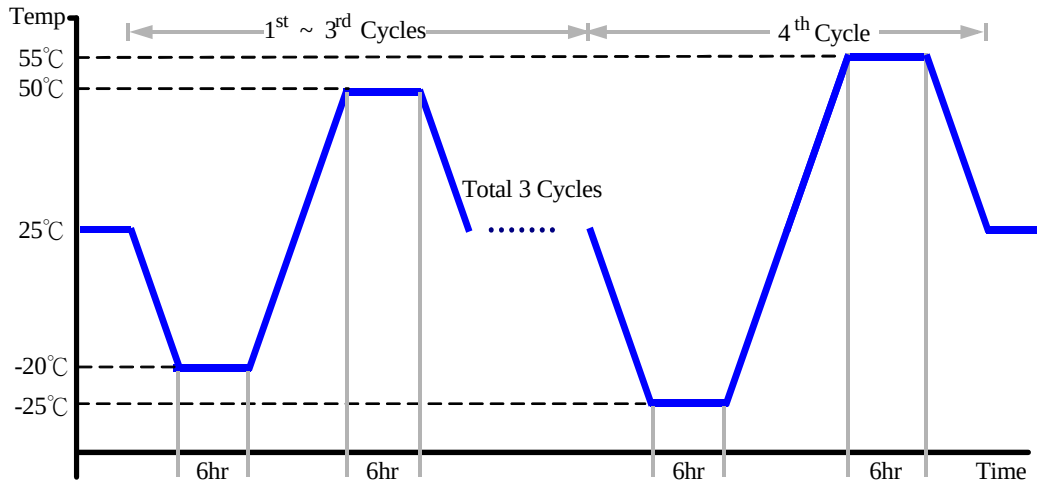
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D75-100+LN2
Date of Calibration: 10/13/11
Serial Number: 6487KT

Test Condition:

1. Test Low Temperature: -20℃ (1~3 cycles)
   -25℃ (4^{th} cycle)
2. Test High Temperature: 50℃ (1~3 cycles)
   55℃ (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 (AFP-6123)

Test Result:

No problem was found during the temperature operation cycle test.

High temperature storage test

Test Date: 05-25 ~ 26-2012

Test Product: AFP-6123

Test Site: AAEON QE Internal Lab.

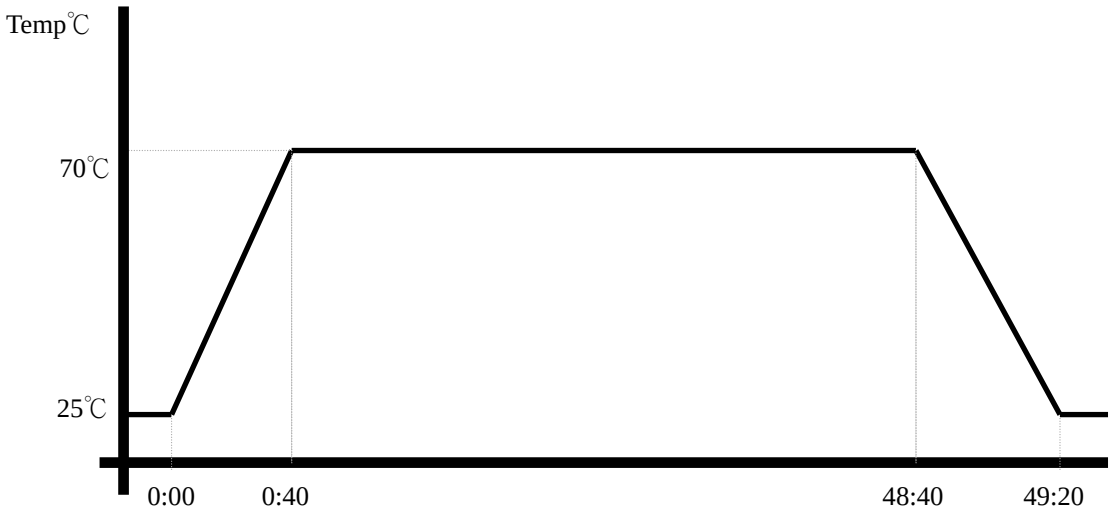
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D75-100+LN2
Date of Calibration: 10/13/11
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
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (AFP-6123)

Test Result:

No problem was found after the high temperature storage test.

Low temperature storage test

Test Date: 05-23 ~ 24-2012

Test Product: AFP-6123

Test Site: AAEON QE 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-D75-100+LN2
Date of Calibration: 10/13/11
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
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (AFP-6123)

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

Humidity test

Test Date: 05-21 ~ 22-2012

Test Product: AFP-6123

Test Site: AAEON QE Internal Lab.

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

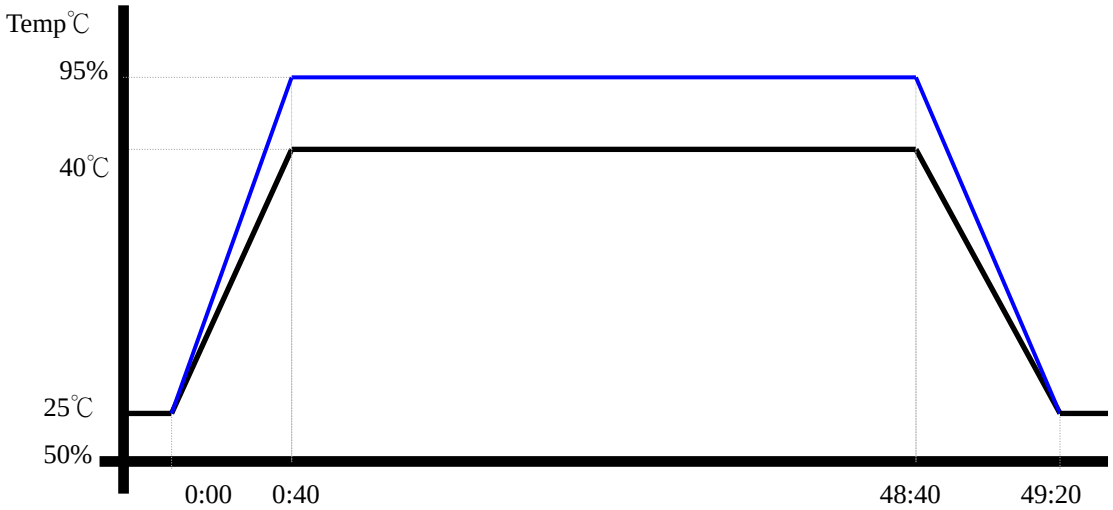
Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D75-100+LN2
Date of Calibration: 10/13/11
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 7.0
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (AFP-6123)

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

Cold start and hot start test

Test Date: 05-19 ~ 20-2012

Test Product: AFP-6123

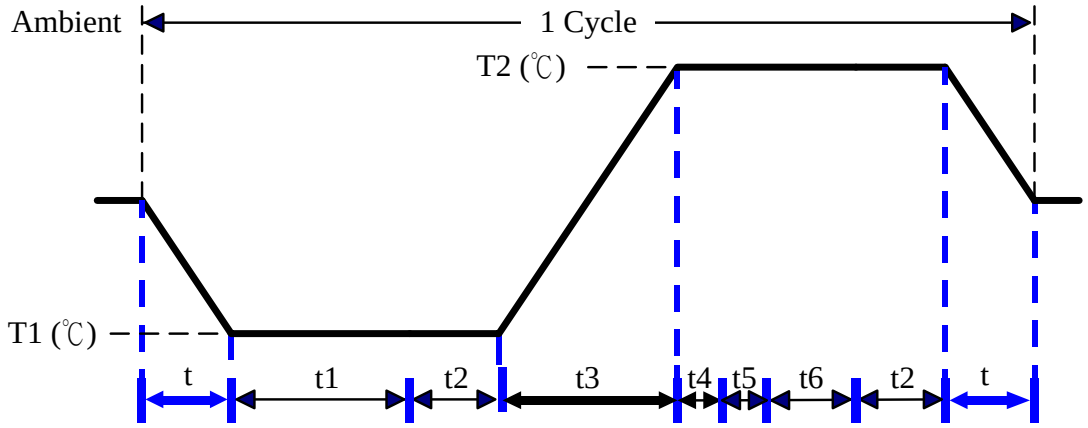
Test Site: AAEON QE Internal Lab.

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-D75-100+LN2
Date of Calibration: 10/13/11
Serial Number: 6487KT

Test Condition:



Parameters	Description
T1	-25℃
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
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.