FWS-2200

Environment Test Report

Report NO: 12I020001

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**
2012-03-01	**Wayne Chen**	**Clement Chien**

Test item list

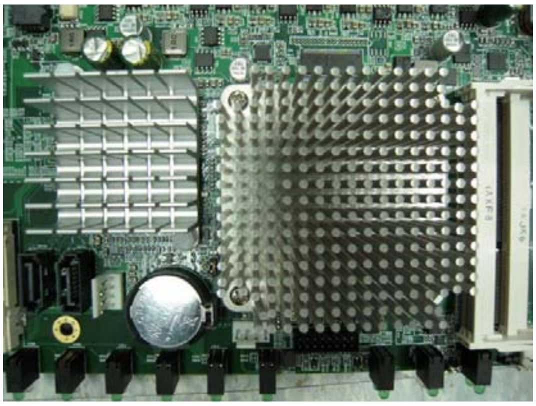
Testing Result

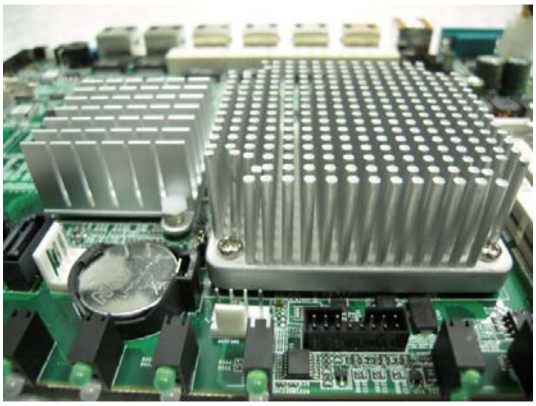
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
1.	**System**:	FWS-2200
	1.Main board	FWS-2200 A1.0 (Bios Ver. R0.3)
	2.CPU Type	Intel Atom D525 / 1.8GHz
	2. Chipset	Intel ICH8M
	3. Memory	DSL DDR3 1066 4GB CL7
	4. HDD	HITACHI 2.5” 160GB Z5K320-160
	5. Test Software	Windows 7 / Run BurnIn test 7.0
2.	Adapter :	FSP060-DBAE1

Heat Sink





Temperature rise test

Test Date: 02-24-2012

Test Product: FWS-2200

Test Site: AAEON QE Internal Lab.

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

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: FWS-2200
Date of Calibration: 10/12/2011
Serial Number: 12A323190

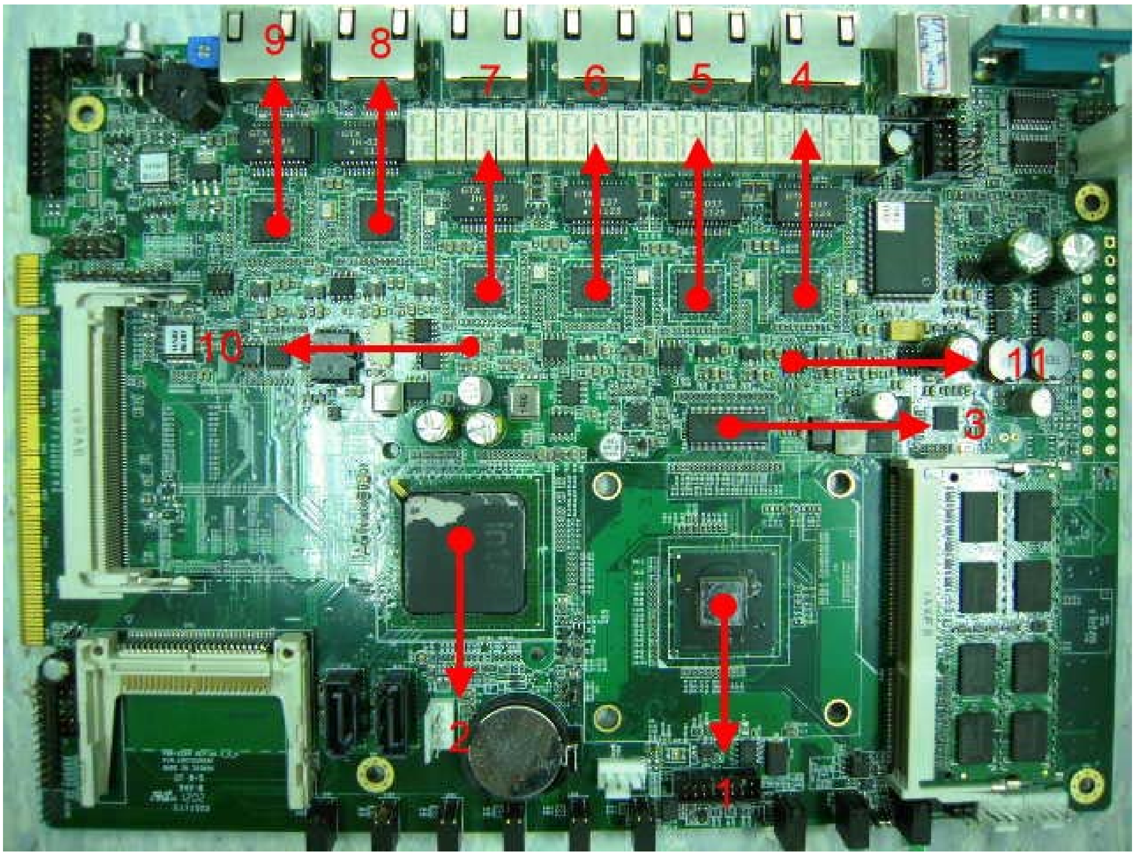
Test Condition:

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

Test Software:

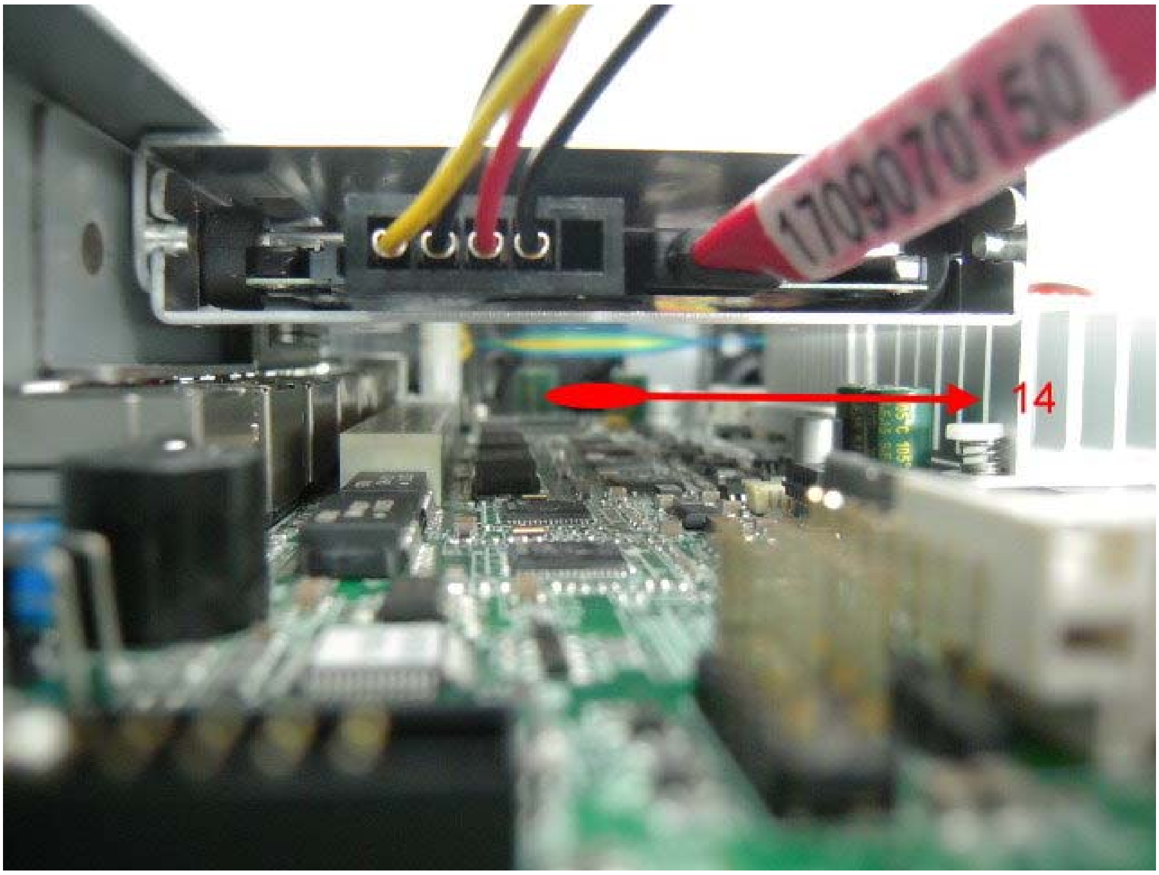
Windows 7 / Run PassMark Burn In Test 7.0

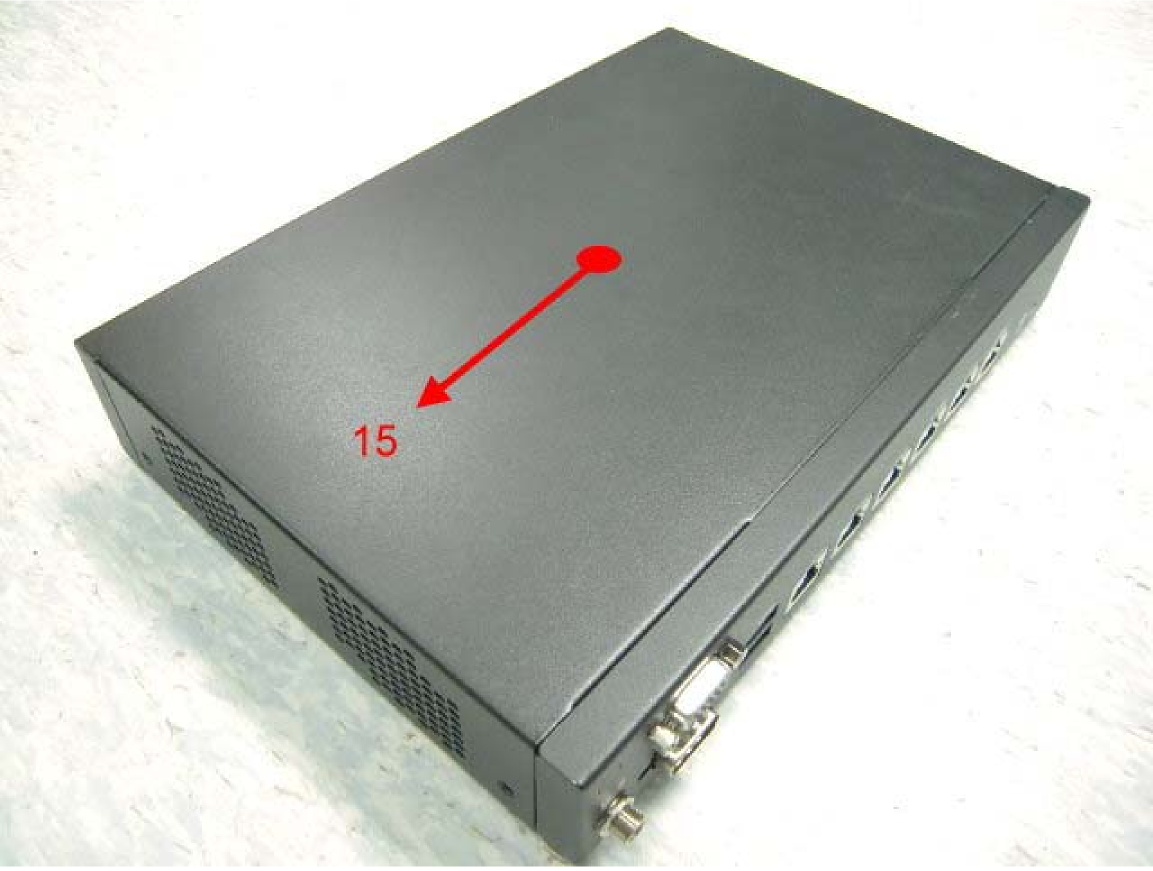
Terminal Recorder:



Temperature rise test

Temperature rise test





Temperature rise test

Thermal profile data:

Point Temp. Stage(℃)	Spec	40	25
01.U33 - (TF)Intel.CPU.D.DUAL.CORE.D525.1.80GHz	100	77.0	62.0
02.U32-(TF)Chipset ICH8M.INTEL.DW82801HBM SLJ4Y	115	52.2	37.2
03.U29-(TF) CLOCK GENERATOR.IDT.9LPRS501PGLF	115	76.4	61.4
04.U21-(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	76.2	61.2
05.U22 -(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	78.2	63.2
06.U23-(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	76.6	61.6
07.U24-(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	75.7	60.7
08.U7-(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	67.5	52.5
09.U8-(TF)PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	64.9	49.9
10.Q26-(TF)PNP.SMD.SC-62 Low Frequency Transistor.ROHM.2SB1386T100R	125	44.8	29.8
11.U19-(TF)8P.8K SPI Bus Serial EEPROM.ATMEL.AT25080B-SSHL-T	125	72.4	57.4
12.Memory-DSL DDR3 1066 4GB CL7 ELPIDA J2108BCSE	95	67.4	52.4
13.HDD-2.5” HITACHI Z5K320 160GB	60	48.5	33.5
14. Control Box Inside Air Temperature	N/A	43.2	28.2
15. Control Box Surface Temperature	N/A	42.9	27.9
11. Chamber Air Temperature	N/A	39.9	24.9
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification. **Note: The measured value is within specification with margin.**			

Sample Configuration & Quantity Under Test:

Quantity: 1 (FWS-2200)

Test Result:

No problem was found during the temperature rise operation test.

Temperature cycle test

Test Date: 02-22 ~ 23-2012

Test Product: FWS-2200

Test Site: AAEON QE Internal Lab.

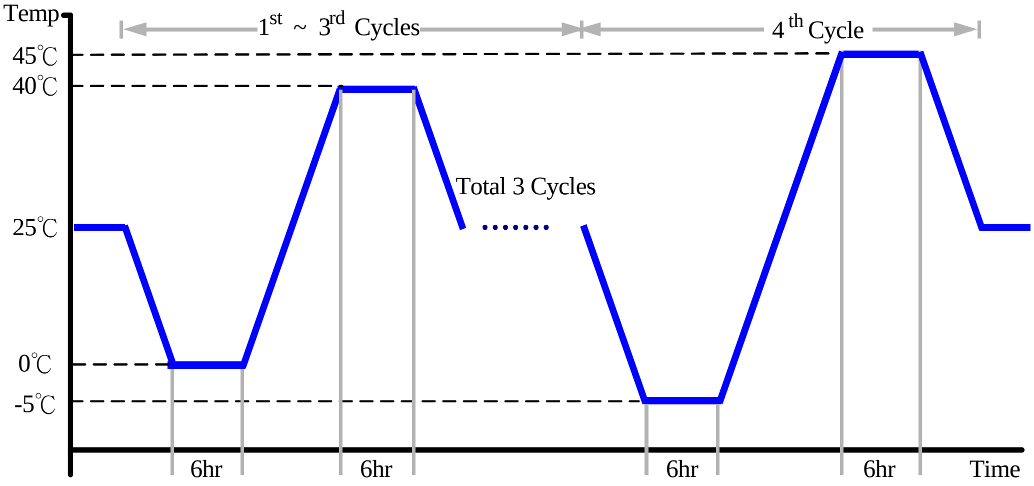
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

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: 0℃ (1~3 cycles)
   -5℃ (4th cycle)
2. Test High Temperature: 40℃ (1~3 cycles)
   45℃ (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 (FWS-2200)

Test Result:

No problem was found during the temperature operation cycle test.

High temperature storage test

Test Date: 02-18 ~ 19-2012

Test Product: FWS-2200

Test Site: AAEON QE Internal Lab.

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

Test Equipment:

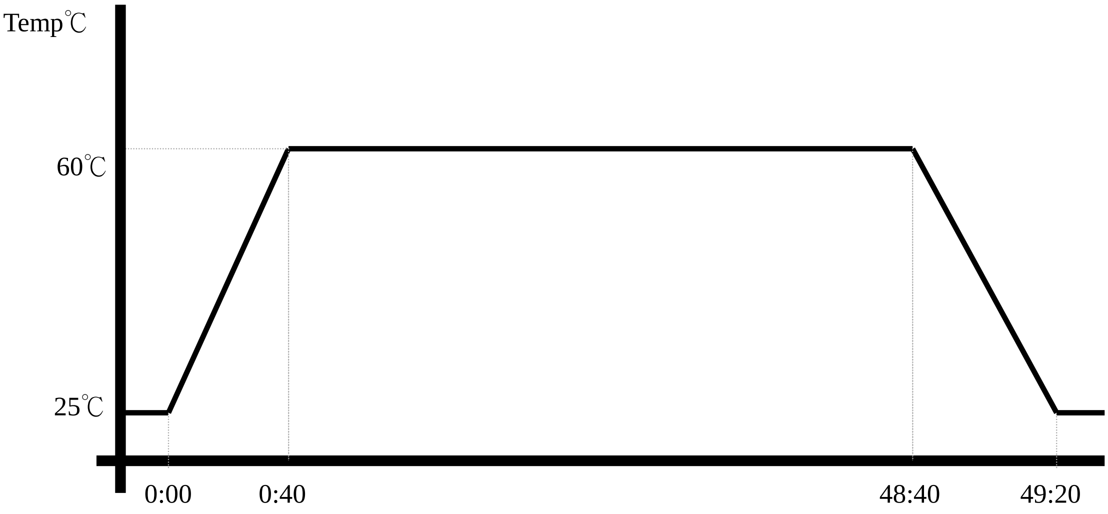
Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.

Model: THS-D75-100+LN2

Date of Calibration: 10/13/11
Serial Number: 6487KT

Testing Item:

1. Test Temperature: 60℃
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 (FWS-2200)

Test Result:

No problem was found after the high temperature storage test.

Low temperature storage test

Test Date: 02-16 ~ 17-2012

Test Product: FWS-2200

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 (FWS-2200)

Test Result:

No problem was found after the low temperature storage test.

Humidity test

Test Date: 02-15 ~ 16-2012

Test Product: FWS-2200

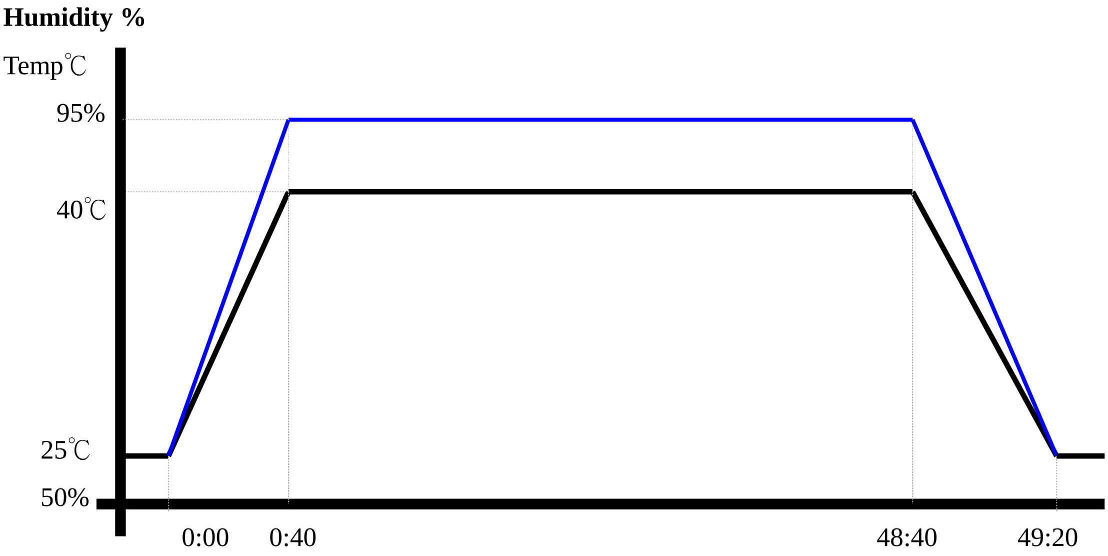
Test Site: AAEON QE Internal Lab.

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:



Sample Configuration & Quantity Under Test:
Quantity: 1 (FWS-2200)

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

Cold start and hot start test

Test Date: 02-20 ~ 21-2012

Test Product: FWS-2200

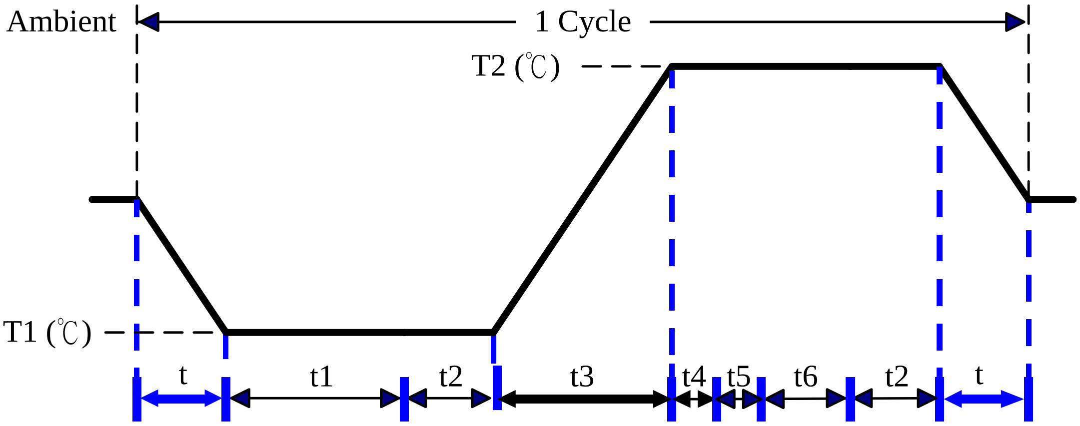
Test Site: AAEON QE Internal Lab.

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	-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 7.0
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.