RTC-1000D

Temp./Humidity Test Report

Report NO: 09E020037

Issued by:	Rex Chang	/	*09/01/2009*
	Engineer		**Date**
Reviewed by:	Wenyuan Yang	/	*09/01/2009*
	Manager		**Date**

Test Item List

AAEON Technology Inc.
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Test Configuration

Sample Configuration:

Num	Item	Spec
01.	**CPU:**	Intel Celeron M Processor Yonah U2500 / 1.2GHz /1.175V / FSB:533
02.	**PCBA**	T8NY1_PCB_ME_YNA
03.	**BIOS**	T8NY3.02D KBC BIOS Version:0.00.02
04.	**Memory**	Transcend 1GB / TS128M8Q64V6J / DDR2 667
05.	**SATA II HDD**	Fujitsu 80GB / MHZ2080BHG2 / 5400RPM
06.	**WLAN + BT Module**	AECO-AWM-S0021M
07.	**LCD**	CPT 10.2'' LCD / CLAA102NA0ACW
08.	**LED Driving Board**	LITEMAX LID10B02
09.	**Touch Panel**	Liyitec PIC16F819 4-wire, Analog Resistive
10.	**Modem**	QCOM-ML3054 / Moto Chipset
11.	**Battery**	LI-ION Rechargeable Battery / DR202 DC11.1V / 7800mAh
12.	**AC Adapter**	LI SHIN 0335A2065 (Output: 20V / 3.25A)
13.	**AC Power Input**	110V / 60 Hz
14.	**Test Software**	Windows XP Embedded / Run Pass Mark Burn In Test 4.0 Pro

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Room Temperature test

Test Date: 08-11-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 12/13/08
Serial Number: 12A323190

Test Condition:

Ambient temperature: 25dC
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows XP Embedded / Run PassMark Burn In Test 4.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：

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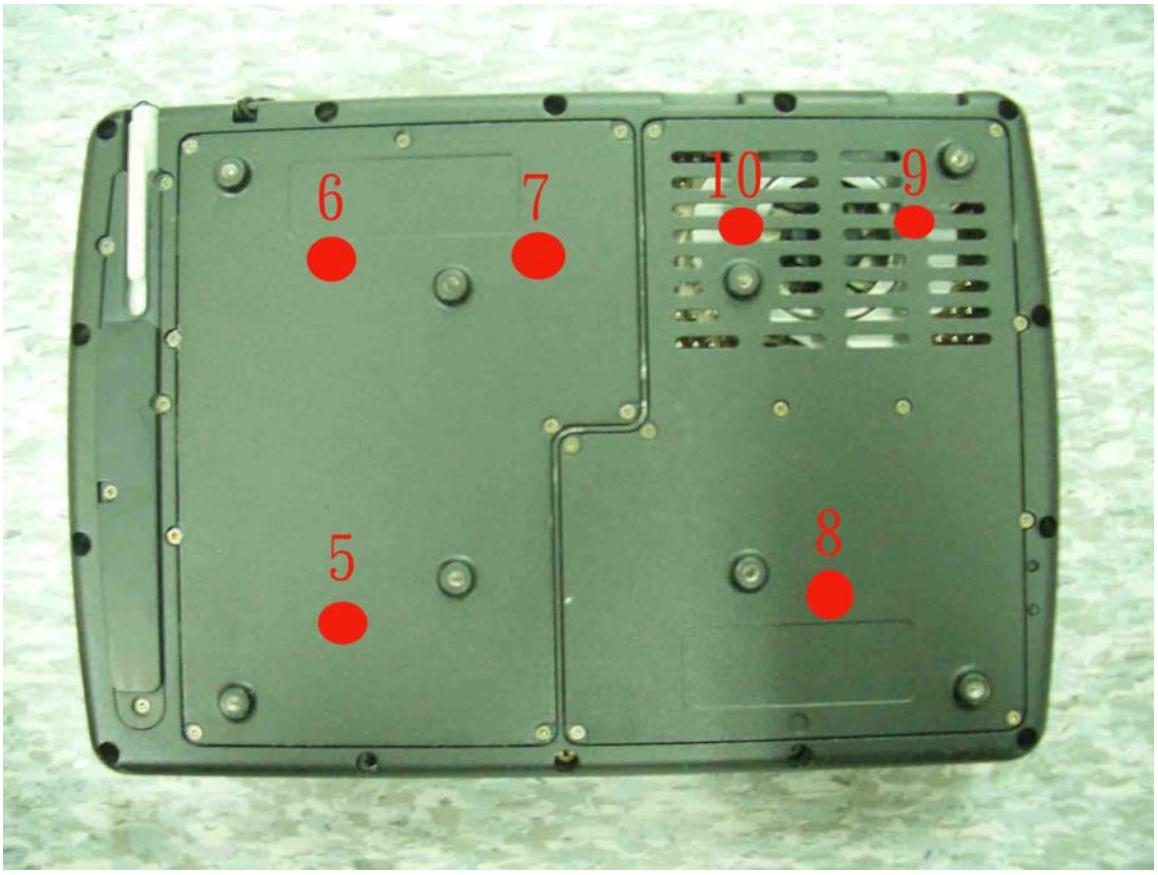
Room Temperature test



Thermal profile data:

RTC-1000

Point \ Temp. Stage(℃)	Spec	25
1. Point 1	△T ≦20 ℃	38.1
2. Point 2		35.8
3. Point 3		36.3
4. Point 4		35.2
5. Point 5 - Bottom of Battery		36.1
6. Point 6 - Bottom of Battery		35.7
7. Point 7 - Bottom of RAM		37.0
8. Point 8 - Bottom of HDD		38.1
9. Point 9 - Bottom of FAN (CPU)		34.2
10. Point 10 - Bottom of FAN (NB)		36.4
Room Temperature		24.8
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification.		

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found during the room temperature operation test.

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Temperature rise test

Test Date: 08-17-2009

Test Product: RTC-1000

Test Site: AAEON QA 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: 12/13/08
Serial Number: 12A323190

Test Condition:

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

Test Software:

Windows XP Embedded / Run PassMark Burn In Test 4.0 Pro

Thermal profile data:

RTC-1000

Point \ Temp. Stage(℃)	Spec	35	25
1. CPU	125	61.7	51.7
2. North Bridge	105	59.9	49.9
3. South Bridge	108	76.0	66.0
4. RAM ambient 1 - Between on board RAM & External RAM	85	69.3	59.3
5. RAM ambient 2 - Between External RAM & Bluetooth	85	68.8	58.8
6. WLAN	80	71.6	61.6
7. HDD - Between main board& HDD	60	63.4	53.4
8. U68	120	77.5	67.5
9. U44	--	62.4	52.4
10. U37	70	65.6	55.6
11. U74	--	68.2	58.2
12. Chamber Air Temperature	N/A	35.1	25.1
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification.			

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found during the temperature rise operation test. But operation temperature of HDD was over the specification.

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High temperature storage test

Test Date: 07-20~27-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

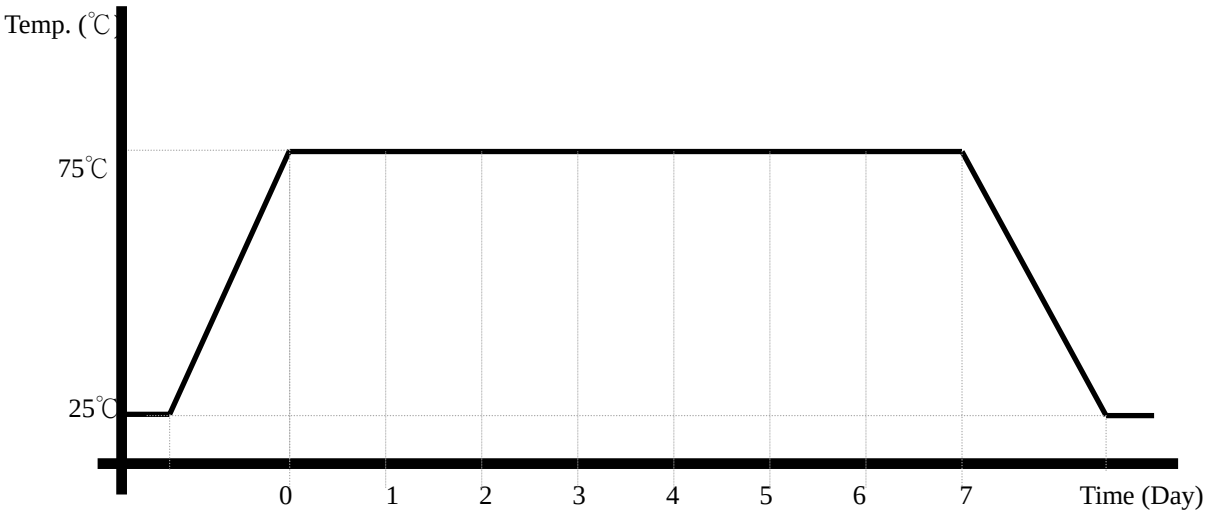
Test Standard: Reference MIL-STD 810F Method 501.4 High Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Testing Item:

1. Test Temperature: 75℃
2. Test Time: 7days
3. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found after the high temperature storage test.

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High temperature operation test

Test Date: 07-30-2009 ~ 08-04-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

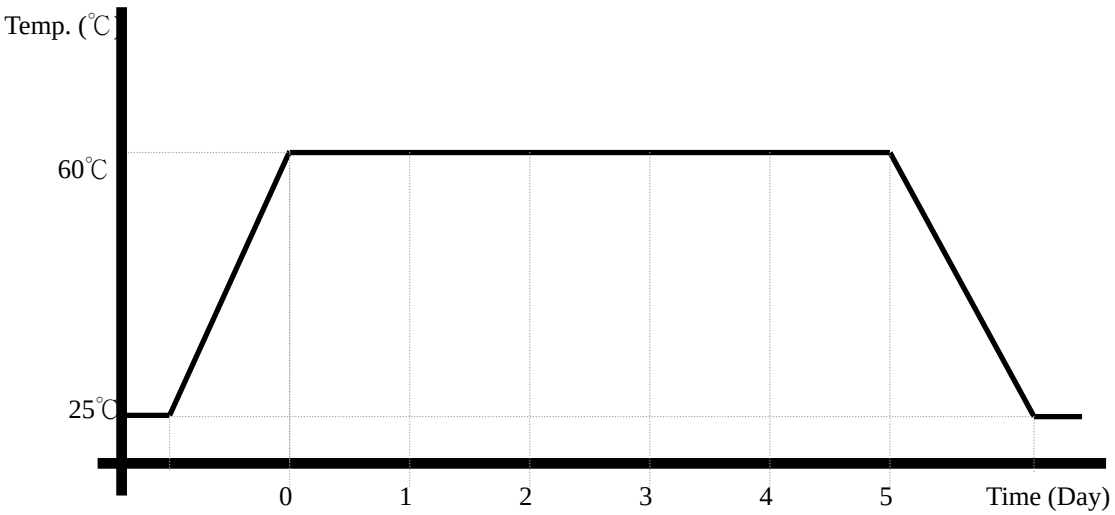
Test Standard: Reference MIL-STD 810F Method 501.4 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Testing Item:

4. Test Temperature: 60℃
5. Test Time: 5days
6. Test Software: Windows XP Embedded / Run PassMark Burn In Test 4.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found during the high temperature operation test.

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Low temperature storage test

Test Date: 07-28~29-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

Test Standard: Reference MIL-STD 810F Method 502.4 Low Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Testing Item:

1. Test Temperature: -55℃
2. Test Times: 24Hrs
3. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found after the low temperature storage test.

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Low temperature operation test

Test Date: 07-27~28-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

Test Standard: Reference MIL-STD 810F Method 501.4 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Testing Item:

1. Test Temperature: -23℃
2. Test Times: 24Hrs
3. Test Software: Windows XP Embedded / Run PassMark Burn In Test 4.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (RTC-1000)

Test Result:
No problem was found during the low temperature operation test.

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Humidity test

Test Date: 08-19~31-2009

Test Product: RTC-1000

Test Site: AAEON QA Internal Lab.

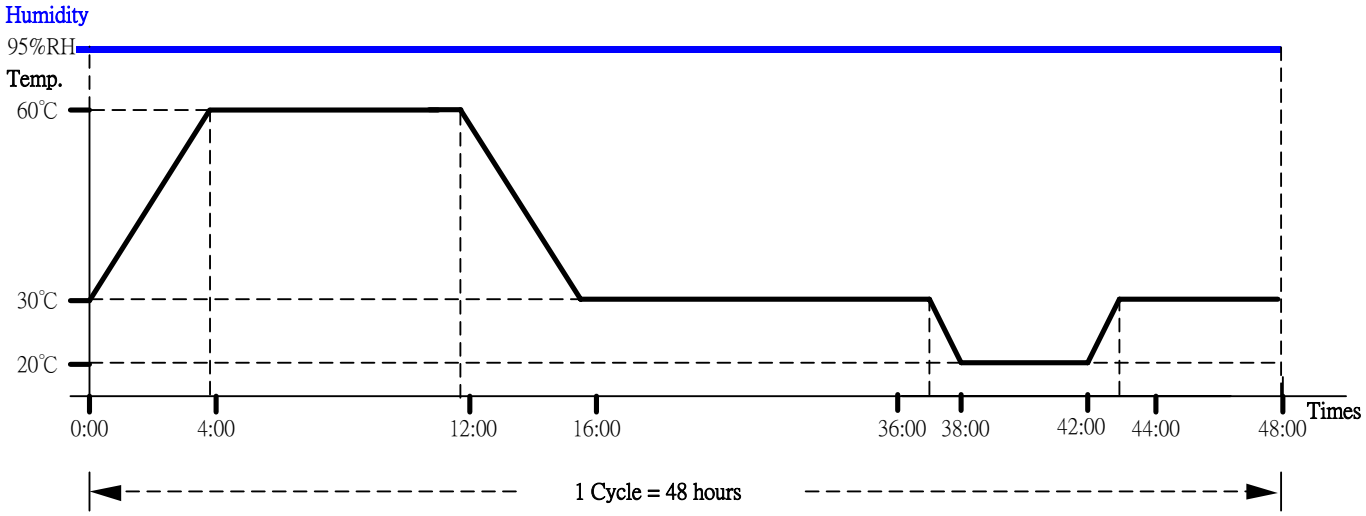
Test Standard: Reference MIL-STD 810F Method 507.4 Testing procedures
FIGURE 507.4-1. Aggravated temperature-humidity cycle

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Test Condition:

1. Test Humidity: 95%RH
2. Test Temperature: 60℃ / 30℃ / 20℃
3. Test Times: 48Hrs / Cycle
4. Test Cycle: 5 Cycles
5. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found after the humidity storage test.

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Temperature Shock Operation test

Test Date: 08-06~07-2009

Test Site: AAEON QA Internal Lab.

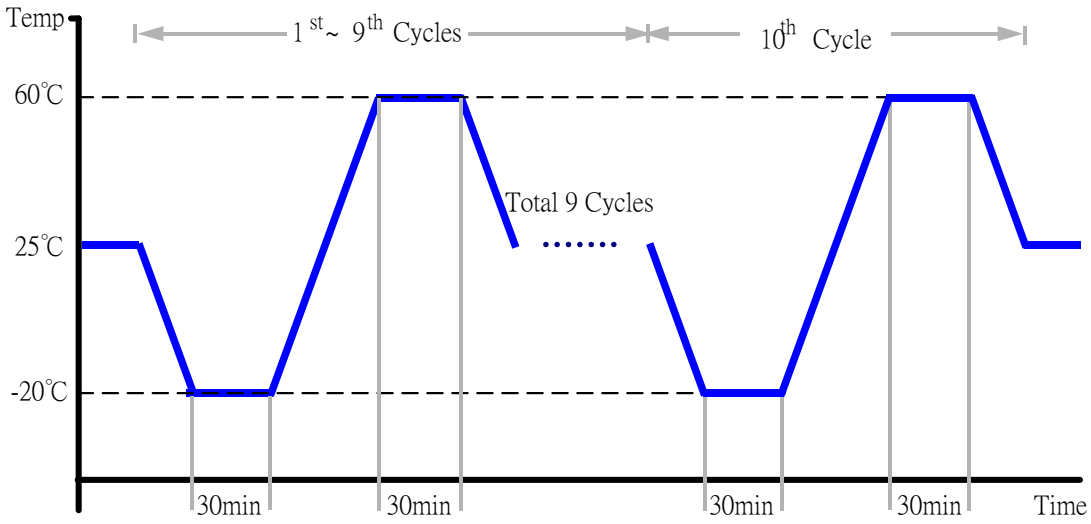
Test Standard: Reference MIL-STD 810F Method 503.4 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Test Condition:

1. Test Low Temperature: -30℃
2. Test High Temperature: 60℃
3. Test dwell time: 15min
4. Temperature slope: 5 min
5. Test cycle: 10 cycles
6. Test Software: Windows XP Embedded / Run PassMark Burn In Test 4.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found during the variation temperature operation test.

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Temperature Shock Non-operation test

Test Date: 08-07~08-2009

Test Site: AAEON QA Internal Lab.

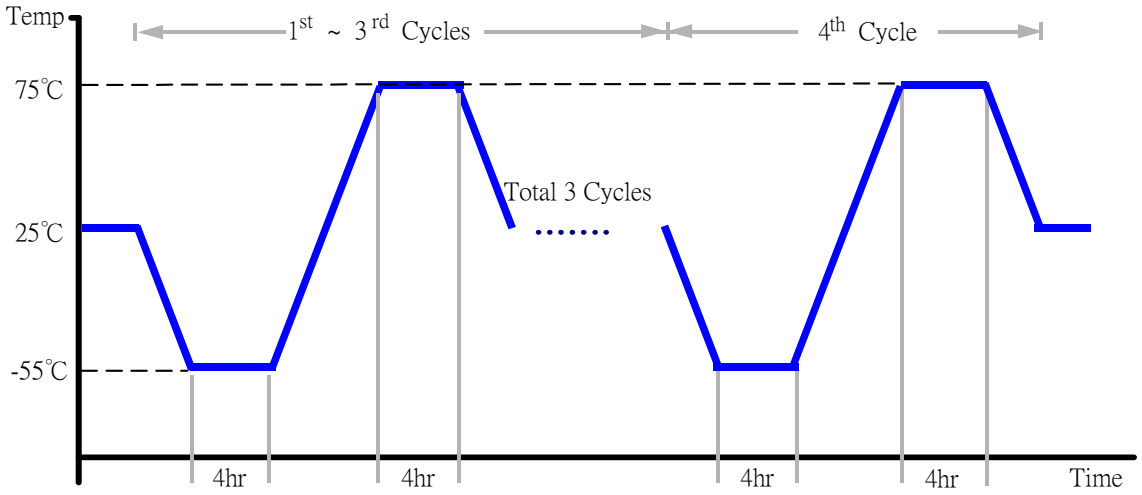
Test Standard: Reference MIL-STD 810F Method 503.4 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Test Condition:

1. Test Low Temperature: -55℃
2. Test High Temperature: 75℃
3. Test dwell time: 4Hrs
4. Temperature slope: 10 min
5. Test cycle: 4 cycles
6. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000)

Test Result:

No problem was found after the variation temperature non-operation test.

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Cold start and hot start test

Test Date: 8-04~05-2009

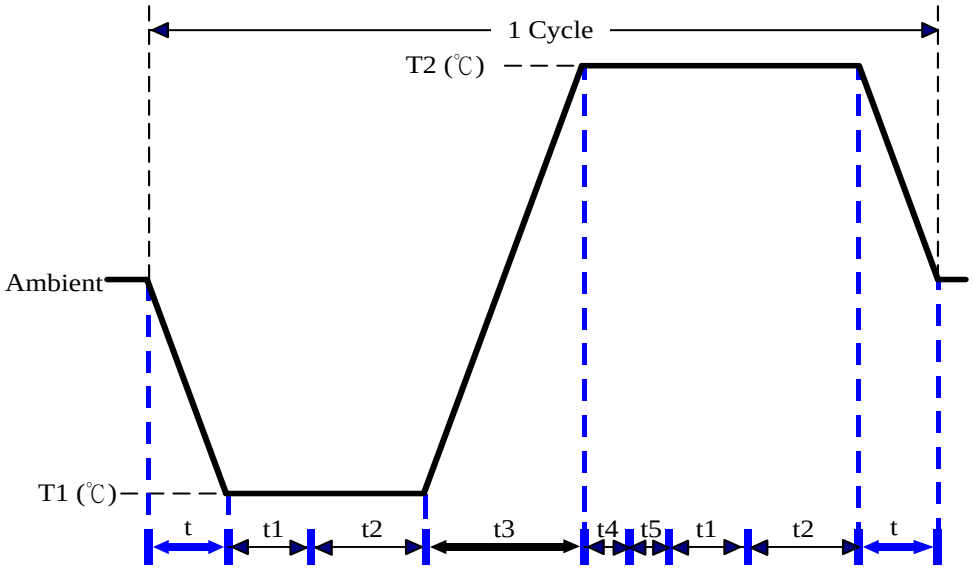
Test Site: AAEON QA Internal Lab.

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-B6T-150+LN2
Date of Calibration: 04/10/09
Serial Number: 6488KT

Test Condition:



Parameters	Description
T1	-5℃
T2	45℃
t1	1 hrs
t2	2 hrs
t4, t5	30 min
t, t3	2℃/min
n (Cycle)	1

t,t3 = temprature slope
t, t1: Power Off
t2: Power on/off test 5 times (on 2 min / off 5min)
t3,t4: Run PassMark Burn In Test
t5: Win XP Embedded Software restart test 2 times
Test Software:Windows XP

Test Result:

a. No problem was found during the cold start test.
b. No problem was found during the hot start test.

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