RTC-1000i

Environment Test Report

Report NO: 11R020001

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: Power on/off test function set 82 sec/time, but random shown on 79~84 sec/time.**

Issue date	Approval	Test Engineer
2011-06-24	**Jansin Lee**	**Rex Chang**

Test Item List

Testing Result

Num	Test item list	Result	Remark
1	Temp./humidity power on/off test	Pass	
2	Room temperature test	Pass	
3	Temperature rise test	Pass	
4	High temperature storage test	Pass	
5	High temperature operation test	Pass	
6	Low temperature storage test	Pass	
7	Low temperature operation test	Pass	
8	Humidity test	Pass	
9	Temperature shock operation test	Pass	
10	Temperature shock non-operation test	Pass	
11	Cold start and hot start test	Pass	

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Configuration of EUT

Test Product: RTC-1000i		
Sample Configuration & Quantity Under Test:		
Num	**Item**	**Spec**
RTC-1000i		
01.	**CPU**	Intel Core i7 620UE / 1.06GHz
02.	**PCBA**	RTC-1000i.Rev.A0.3
03.	**BIOS**	RTC-1000I BIOS Version: 0.8
04.	**Memory**	Onboard 2GB / Hynix H5TQ2G83BFR H9C
05.	**SATA II HDD**	Western Digital 80GB / WD800BEVT / 5400RPM
06.	**WLAN + BT Module**	AECO-AWM-S0021M
07.	**LCD**	CPT 10.2'' LCD / CLAA102NA0ACW
08.	**LED Driving Board**	LITEMAX LID10B02
09.	**Touch Panel**	AMT 10454 4-wire, Analog Resistive
10.	**Modem**	QCOM-MA560-7 / Agere SV92A3 Chipset
11.	**Battery**	LI-ION Rechargeable Battery / DR202 DC11.1V / 7800mAh
12.	**AC Adapter**	FSP FSP (Output: 19V / 3.42A)
13.	**AC Power Input**	110V / 60 Hz
14.	**Test Software**	Windows XP / Run Pass Mark Burn In Test 6.0 Pro

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Temp./humidity power on/off test

Test Date: 05-19~20-2011

Test Model: RTC-1000i Main Board only

Test Site: AAEON QE Internal Lab.

Test Standard: Reference IEC 68-2-30 Testing procedures
Test Db: Damp Heat Test
Reference IEC 68-2-1 Testing procedures
Test Ab: Cold Test

Test Equipment:

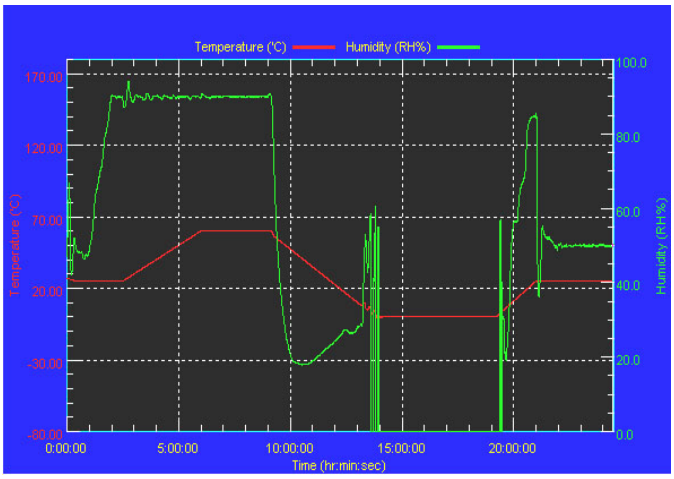
Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/28/11
Serial Number: 6488KT

Temperature & Humidity Power On/Off Test:

Testing Specification:

Step	Temperature (℃)	Humidity (%RH)	Duration (HH:MM)
1	25	50	00:30
2	25	50	00:30
3	25	90	01:00
4	25	90	00:30
5	60	90	03:30
6	60	90	03:00
7	0	0	04:50
8	0	0	05:23
9	25	50	01:47
10	25	50	03:00

Test Curve:



Test Result:

Onboard 2GB / Hynix H5TQ2G83BFR H9C / DDR3 1333 Memory

No problem was found during the temperature & humidity power on/off test.

Test Method	Actual	Successful	Failure rate
Power On/Off	1075/times	1075/times	0 %
Note: Failure rate need to under 0.2%.			

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Room Temperature test

Test Date: 06-09-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 11/08/10
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 6.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：

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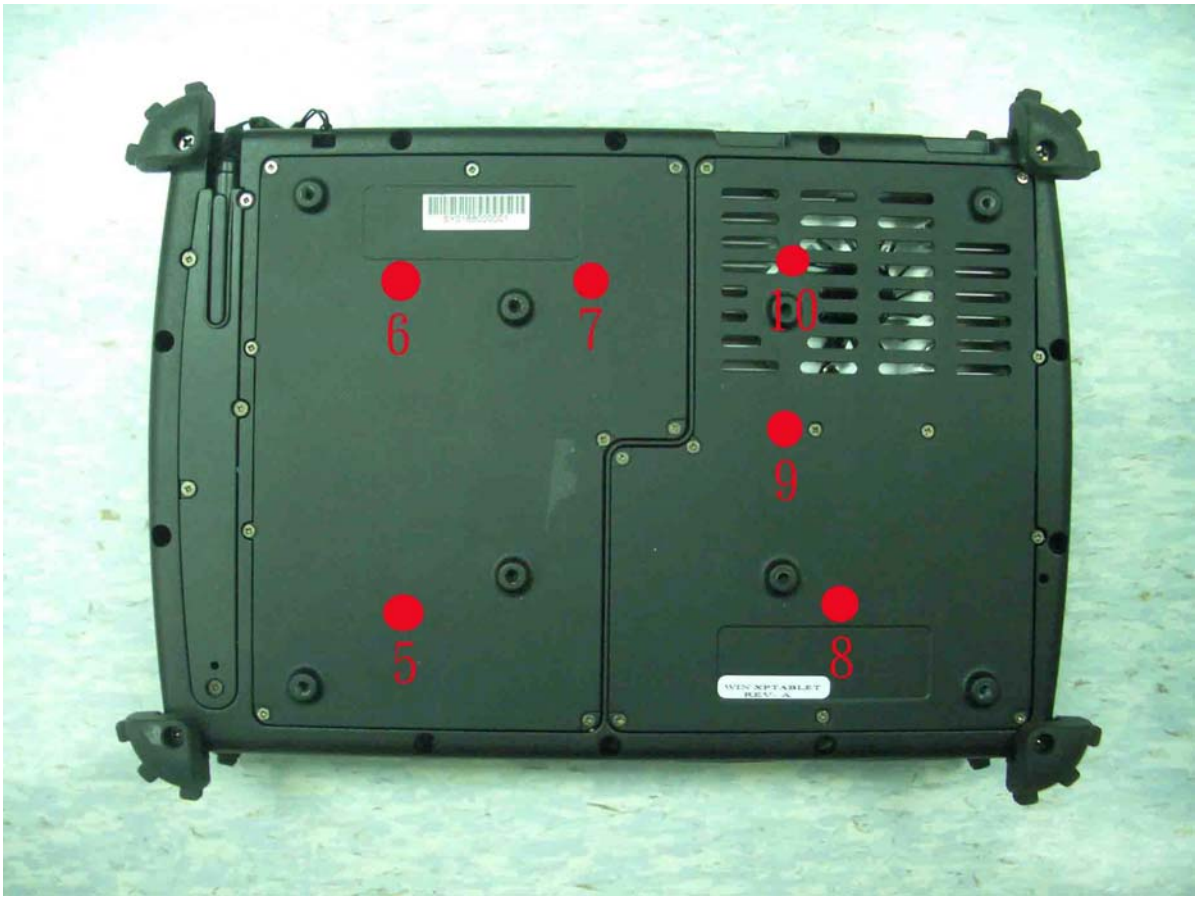
Room Temperature test



Thermal profile data:

RTC-1000i

Point / Temp. Stage(℃)	Spec	25
1. Point 1		39.3
2. Point 2		38.7
3. Point 3		35.2
4. Point 4		37.2
5. Point 5 - Bottom of Battery	△T	36.5
6. Point 6 - Bottom of Battery	≦20	35.8
7. Point 7 - Bottom of RAM	℃	36.2
8. Point 8 - Bottom of HDD		39.6
9. Point 9 - Bottom of FAN (CPU)		39.4
10. Point 10 - Bottom of FAN (SB)		40.0
Room Temperature		24.9
Any Tm value showed in red words which meaning the value over the Tc degree Cof this device specification.		

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000i)

Test Result:

No problem was found during the room temperature operation test.

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Temperature rise test

Test Date: 06-22-2011

Test Product: RTC-1000i

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: 11/08/10
Serial Number: 12A323190

Test Condition:

Ambient temperature: 35℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows XP Embedded / Run PassMark Burn In Test 6.0 Pro

Thermal profile data:

RTC-1000i

Point / Temp. Stage(℃)	Spec	35	25
01. CPU - Core i7-620UE.1.06GHz	105	63.4	53.4
02. CPU - Int. GFX and Memory Controller	100	63.1	53.1
03. South Bridge	108	68.9	58.9
04. L3	125	66.0	56.0
05. Q19	125	66.0	56.0
06. Q21	125	66.1	56.1
07. Q33	125	79.4	69.4
08. U36	100	59.3	49.3
09. U65 - RAM Chip	95	57.3	47.3
10. U64 - RAM Chip	95	56.7	46.7
11. U70	85	62.1	52.1
12. WLAN	--	58.9	48.9
13. HDD - Between main board& HDD	85	65.1	55.1
14. Chamber Air Temperature	N/A	35.0	25.0
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-1000i)

Test Result:

No problem was found during the temperature rise operation test.

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High temperature storage test

Test Date: 05-27-2011 ~ 06-03-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

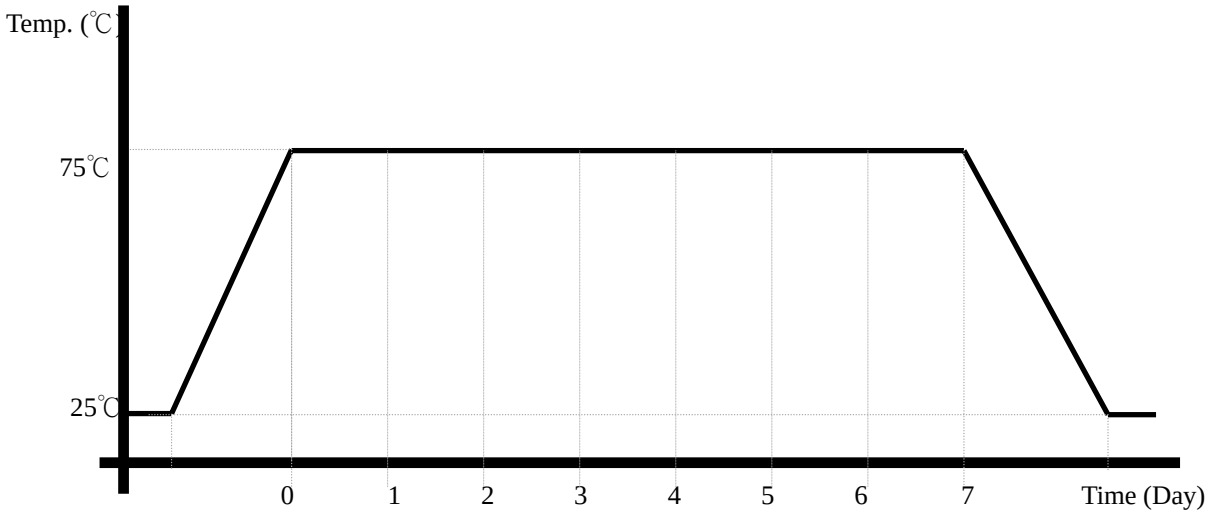
Test Standard: Reference MIL-STD 810G Method 501.5 High Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/28/11
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-1000i)

Test Result:

No problem was found after the high temperature storage test.

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High temperature operation test

Test Date: 05-20 ~ 25-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

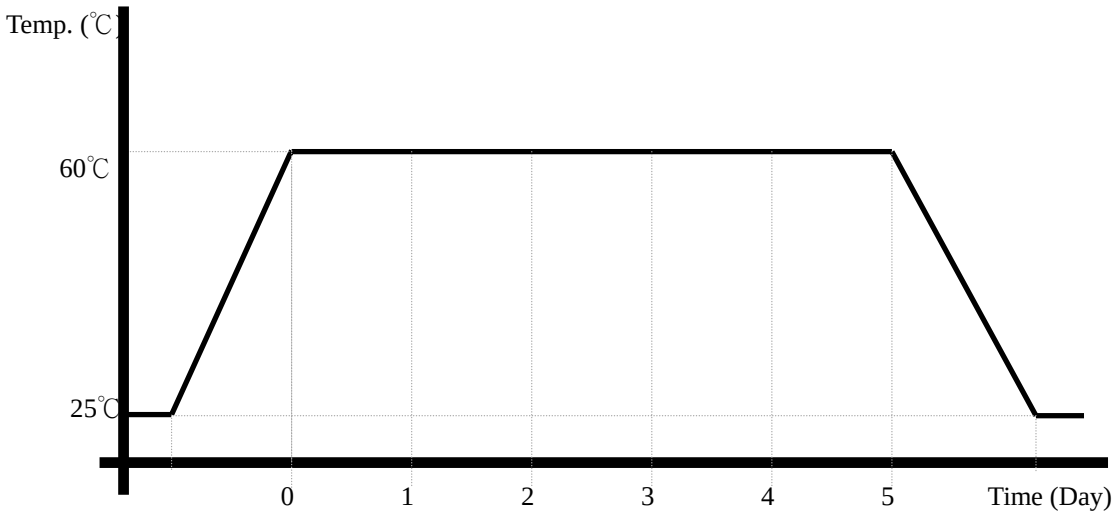
Test Standard: Reference MIL-STD 810G Method 501.5 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/28/11
Serial Number: 6488KT

Testing Item:

4. Test Temperature: 60℃
5. Test Time: 5days
6. Test Software: Windows XP Embedded / Run PassMark Burn In Test 6.0 Pro
7. Test Environment Curve:



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

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

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Low temperature storage test

Test Date: 06-09~10-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

Test Standard: Reference MIL-STD 810G Method 502.5 Low Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D7S-100+1 N2
Date of Calibration: 12/01/10
Serial Number: 3898

Testing Item:

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

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000i)

Test Result:

No problem was found after the low temperature storage test.

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Low temperature operation test

Test Date: 05-25~26-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

Test Standard: Reference MIL-STD 810G Method 502.5 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/28/11
Serial Number: 6488KT

Testing Item:

1. Test Temperature: -23℃
2. Test Times: 24Hrs
3. Test Software: Windows XP Embedded / Run PassMark Burn In Test 6.0 Pro
4. Test Environment Curve:

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

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

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Humidity test

Test Date: 06-03~08-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

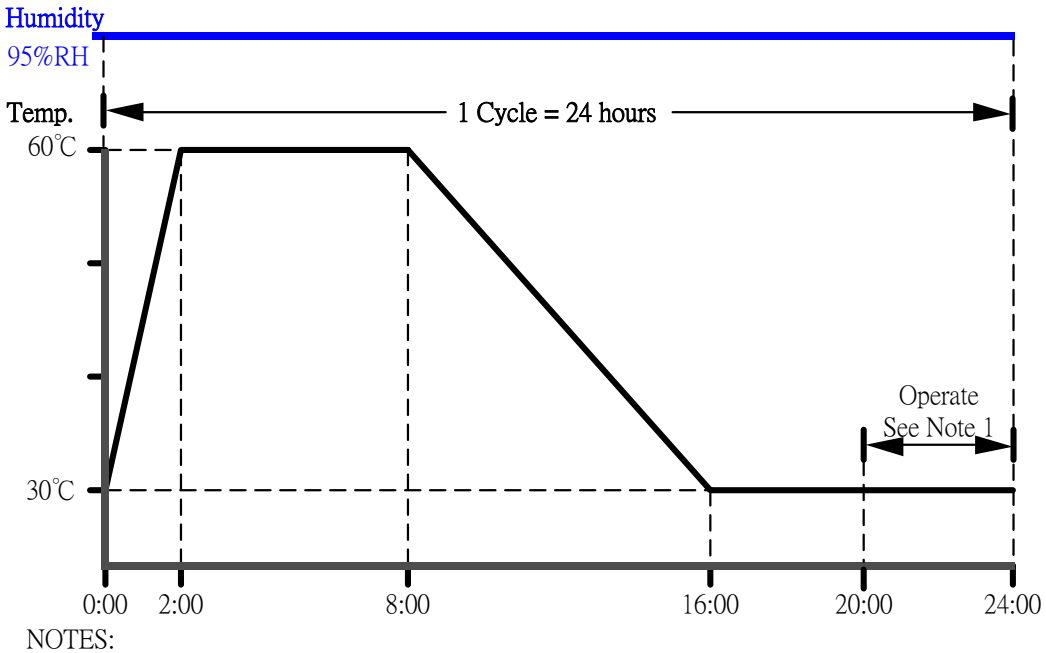
Test Standard: Reference MIL-STD 810G Method 507.5 Testing
Procedures II – Aggravated Cycle (FIGURE 507.5-7)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/28/11
Serial Number: 6488KT

Test Condition:

1. Test Humidity: 95%RH
2. Test Temperature: 60℃ / 30℃
3. Test Times: 24Hrs / Cycle
4. Test Cycle: 5 Cycles
5. Test Environment Curve:



NOTES:
1. Perform operational checks near the end of the fifth cycles.

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000i)

Test Result:

No problem was found after the humidity storage test.

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Temperature shock operation test

Test Date: 06-13~14-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

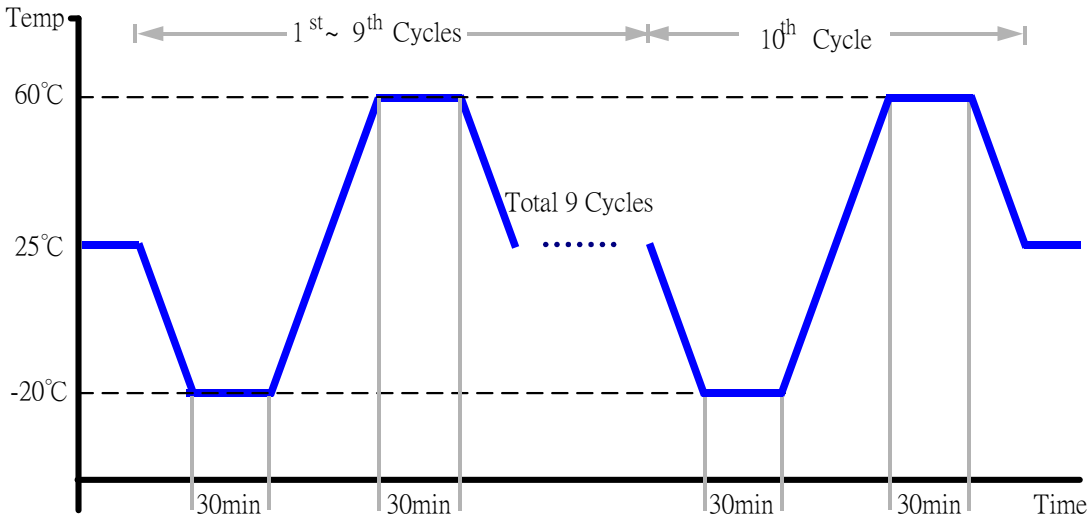
Test Standard: Reference MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 04/01/10
Serial Number: 6488KT

Test Condition:

1. Test Low Temperature: -20℃
2. Test High Temperature: 60℃
3. Test dwell time: 30min
4. Temperature slope: 5 min
5. Test cycle: 10 cycles
6. Test Software: Windows XP Embedded / Run PassMark Burn In Test 6.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-1000i)

Test Result:

No problem was found during the variation temperature operation test.

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Temperature shock non-operation test

Test Date: 06-14~16-2011

Test Product: RTC-1000i

Test Site: AAEON QE Internal Lab.

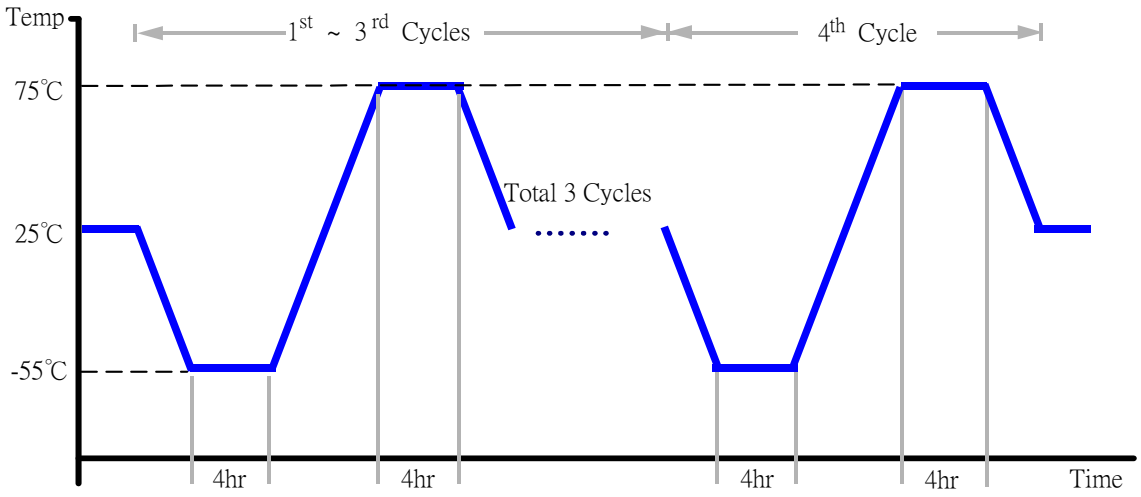
Test Standard: Reference MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D7S-100+1 N2
Date of Calibration: 12/01/10
Serial Number: 3898

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-1000i)

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: 05-26~27-2011

Test Product: RTC-1000i

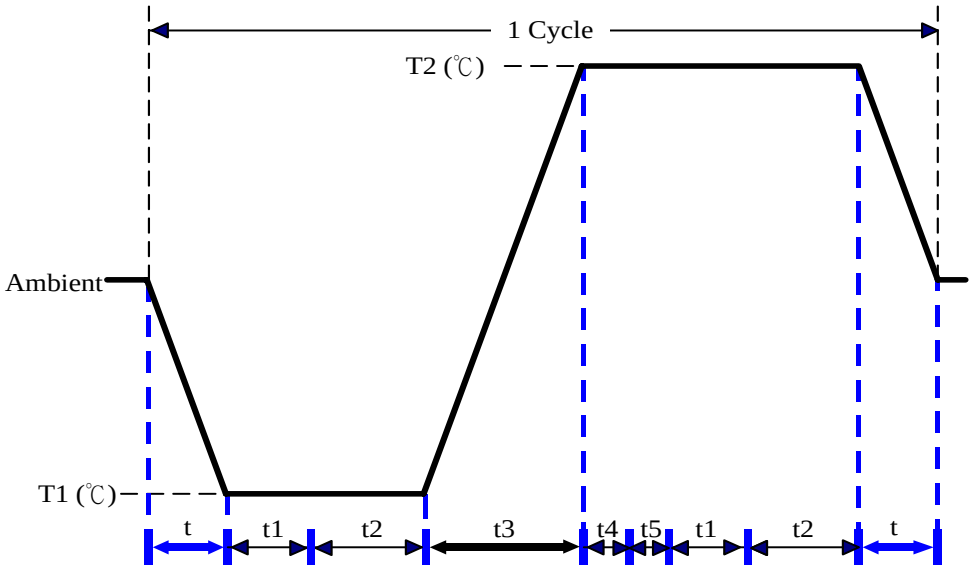
Test Site: AAEON QE Internal Lab.

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-B6T-150+LN2
Date of Calibration: 04/28/11
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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