RTC-700T

Environment Test Report

Report NO: 13R020001

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
2013-04-16	**Tom Lin**	**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-700T		
Sample Configuration & Quantity Under Test:		
Num	**Item**	**Spec**
RTC-700T		
01.	**CPU:**	IIntel® Atom™ Z670 Processor / 1.5GHz
02.	**PCBA**	RTC-700T A1.2
03.	**BIOS**	BIOS (V1.2) EC (V1.4)
04.	**Memory**	DDRII 1GB SDRAM/ Hynix.H5PS1G83EFR-S6C
05.	**mSATA**	Intel® SSD 40GB / SSDMAEMC040G2
	3G	HUAWEI EM820W
06.	**WLAN + BT Module**	FangTec. RTL8188CU88
07.	**LCD**	7” TFT LCD / Hydis.HV070WS1-100 (1024x600)
08.	**Touch Panel**	7” CPT Touch/ EMERGING DISPLAY.EP0700MLJ5
09.	**Battery**	JHT.JHT-795RTC70-A(J1067-1), 2S1P 3700mAh
10.	**AC Adapter**	LTE.LTE24E-S2-2C6 (Output: 12V / 2A)
11.	**AC Power Input**	110~240V / 60 Hz
12.	**Test Software**	Windows Embedded 7 / Run PassMark BurnIn Test 7.0 Pro

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Temp./humidity power on/off test

Test Date: 03-19~20-2013

Test Model: RTC-700T Main Board only

Test Site: AAEON QE Dept.

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

Test Equipment:

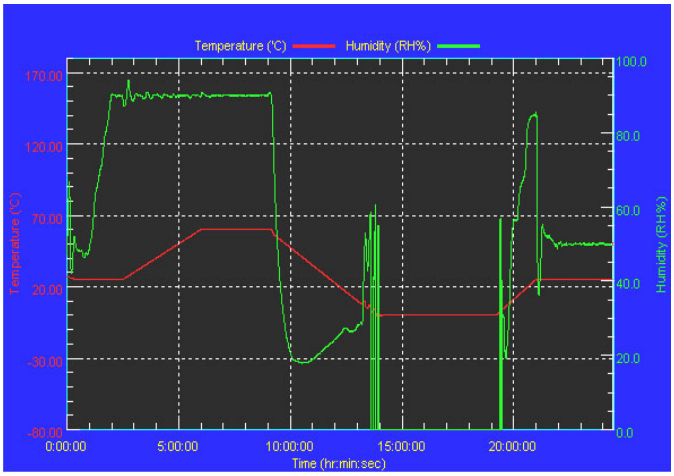
Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

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:

No issues were 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: 04-15-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 10/08/12
Serial Number: 12A323190

Test Condition:

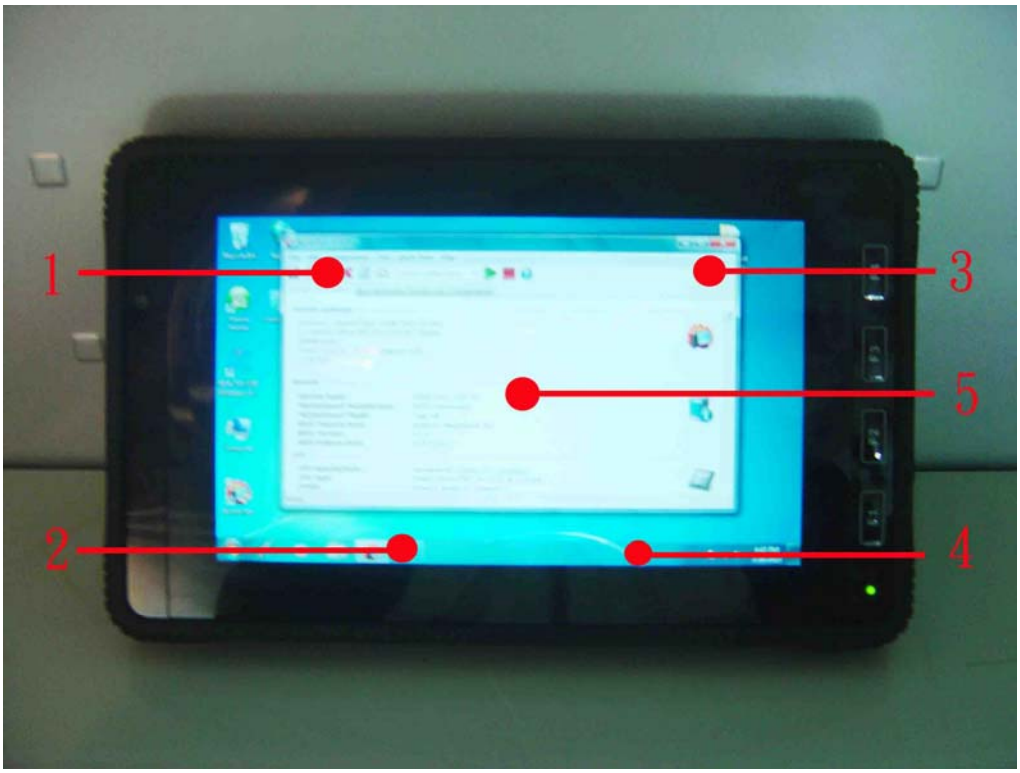
Ambient temperature: 25℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows Embedded 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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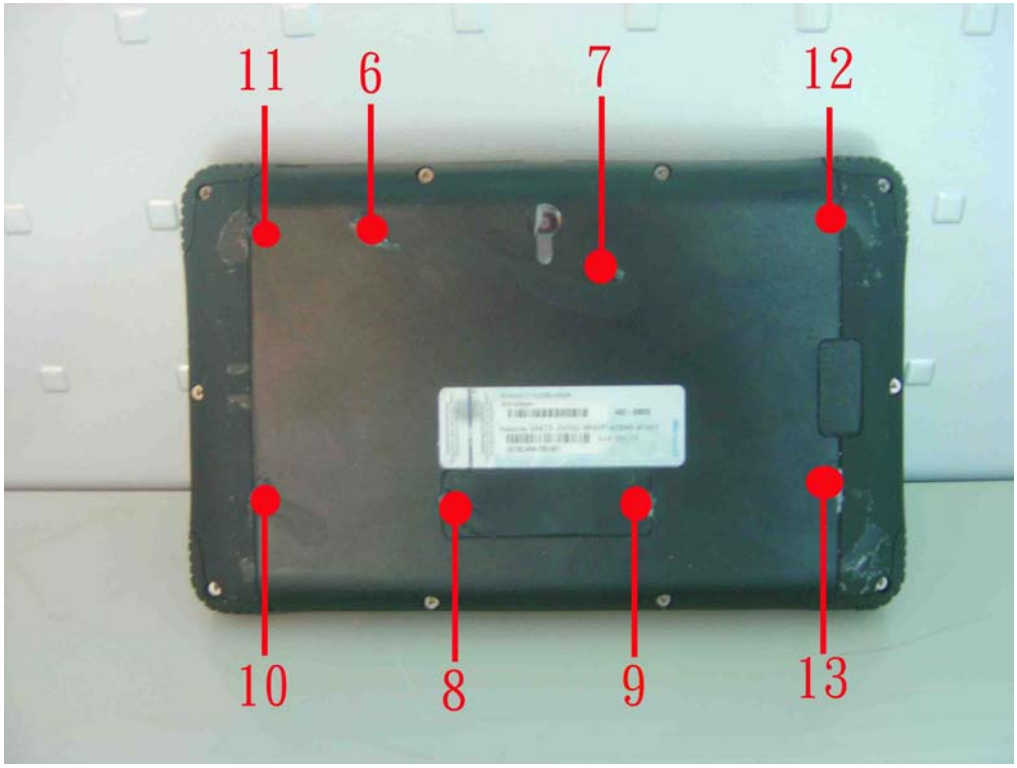
Room Temperature test



Thermal profile data:

RTC-700T

Point / Temp. Stage(℃)	Spec	25
1. Point 1	△T ≦25 ℃	39.1
2. Point 2		46.3
3. Point 3		40.8
4. Point 4		48.8
5. Point 5		42.5
6. Point 6 - Bottom of mSATA HDD Module		37.7
7. Point 7 - Bottom of CPU with Heat Sink		38.4
8. Point 8 - Bottom of Battery		40.8
9. Point 9 - Bottom of Battery		40.9
10. Point 10 - Bottom of GPS Module		37.1
11. Point 11 - Bottom of PCBA		35.2
12. Point 12 - Bottom of PCBA		35.8
13. Point 13 - Bottom of 3G Module		35.8
Room Temperature		25.0
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-700T)

Test Result:

No issues were found during the room temperature operation test.

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Temperature rise test

Test Date: 04-16-2013

Test Product: RTC-700T

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: 10/08/12
Serial Number: 12A323190

Test Condition:

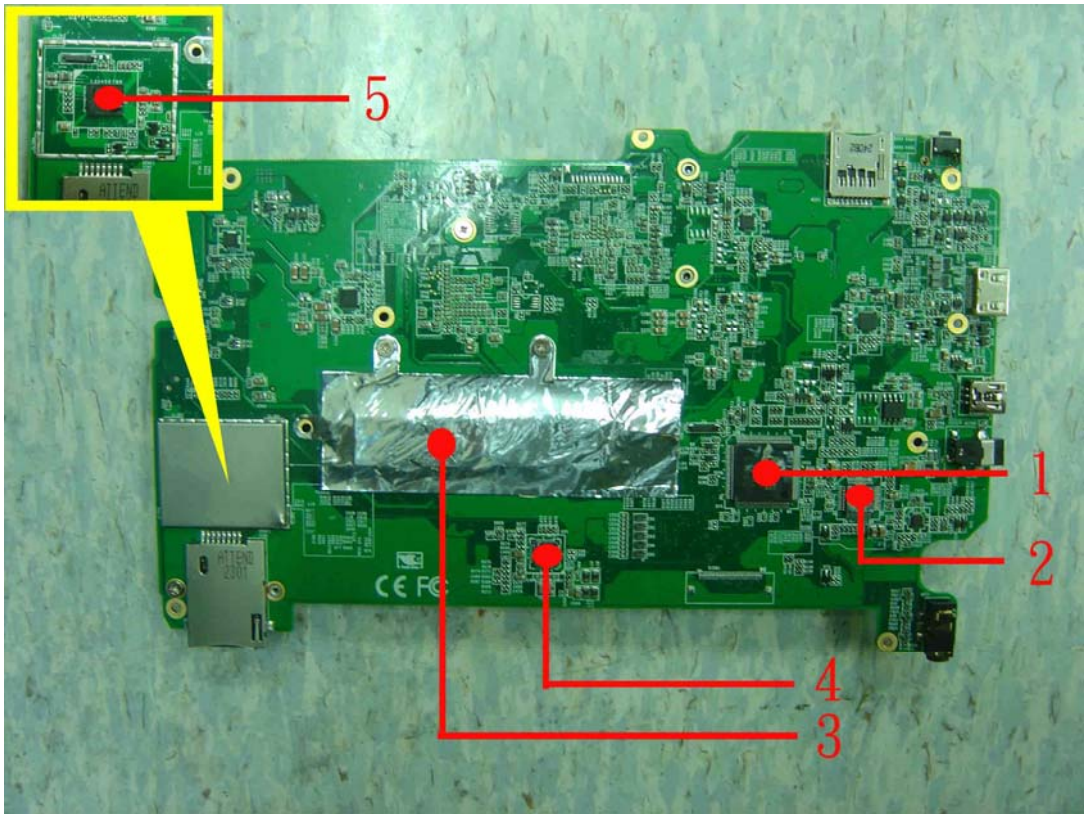
Ambient temperature: 35℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows Embedded 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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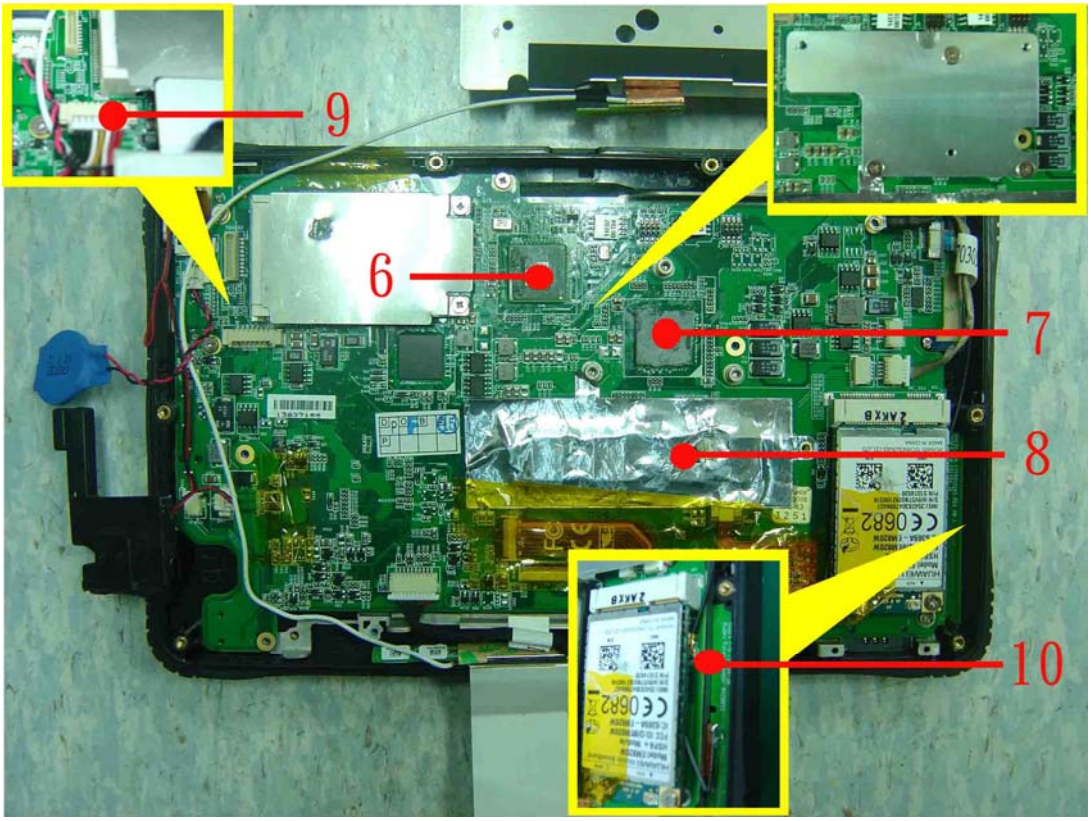
Temperature rise test



Thermal profile data:

RTC-700T

Point / Temp. Stage(℃)	Spec	35	25
01. U16 - (TF)Embedded Controller.ITE.IT8516E-L	100	66.5	56.5
02. U47 - (TF) Audio codec.REALTEK.ALC662-GR	100.5	70.6	60.6
03. U10 - RAM Chip	95	65.6	55.6
04. U35 - (TF)USB Hub controller.SMSC.USB2514BI-AEZG	85	67.2	57.2
05. U37 - (TF) GPS Module.BGA50.SMD.u-blox.AMY-6M-0	85	65.0	55.0
06. U12 - (TF)Chipset Whitney Point PCH.INTEL.AF82SM35 SLJ3Q	90	68.3	58.3
07. U1 - (TF)Intel CPU.FCBGA.Lincroft(Oak Trail).1.5GHz.Z670.	90	68.1	58.1
08. U6 - RAM Chip	95	66.1	56.1
09. Inside Air Temperature -Temperature Ambient for mSATA	70	68.8	58.8
10. Inside Air Temperature - 3G Module	70	52.3	42.3
11. 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-700T)

Test Result:

No issues were found during the temperature rise operation test.

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High temperature storage test

Test Date: 04-02 ~ 09-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

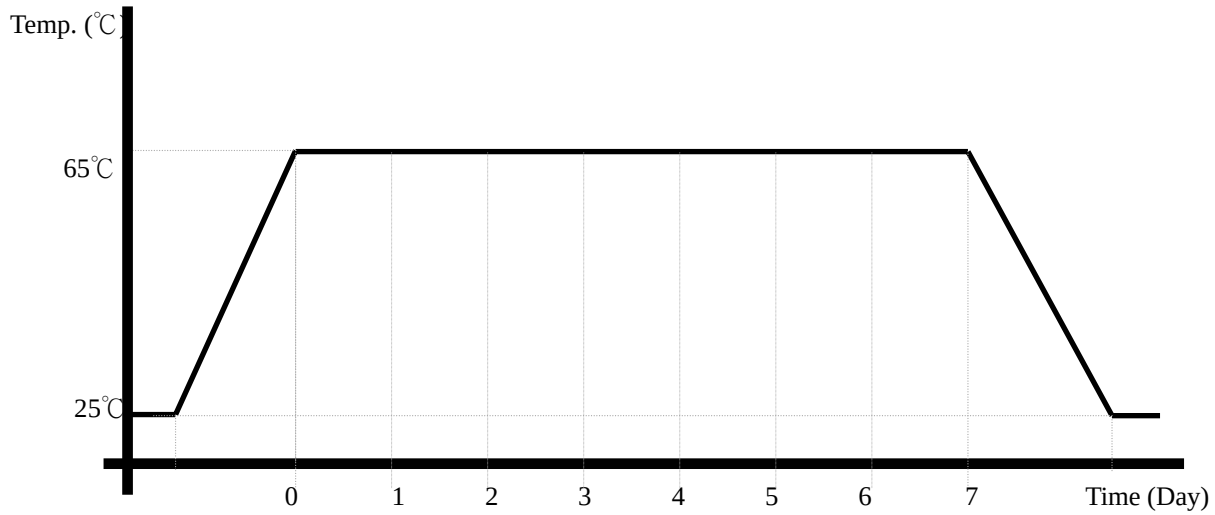
Test Standard: Refer to MIL-STD 810G Method 501.5 High Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 65℃
2. Test Time: 7days
3. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700T)

Test Result:

No issues were found after the high temperature storage test.

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High temperature operation test

Test Date: 03-27-2013 ~ 04-01-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

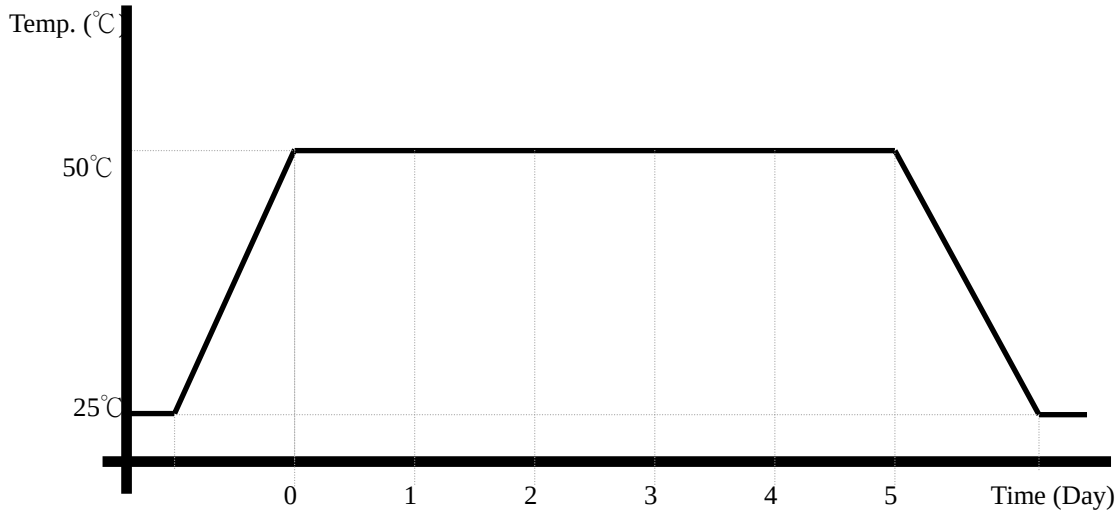
Test Standard: Refer to MIL-STD 810G Method 501.5 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Testing Item:

4. Test Temperature: 50℃
5. Test Time: 5days
6. Test Software: Windows Embedded 7 / Run PassMark Burn In Test 7.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700T)

Test Result:

No issues were found during the high temperature operation test.

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Low temperature storage test

Test Date: 03-26~27-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

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

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 24Hrs
3. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700T)

Test Result:

No issues were found after the low temperature storage test.

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Low temperature operation test

Test Date: 04-01~02-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

Test Standard: Refer to 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: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -23℃
2. Test Times: 24Hrs
3. Test Software: Windows Embedded 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700T)

Test Result:

No issues were found during the low temperature operation test.

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Humidity test

Test Date: 03-20~26-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

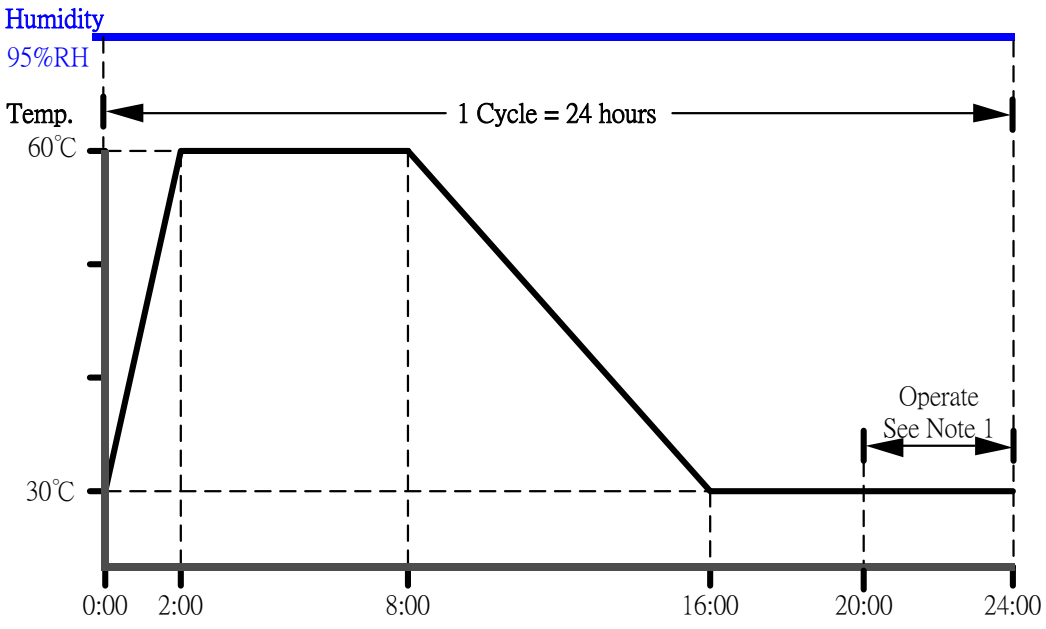
Test Standard: Refer to MIL-STD 810G Method 507.5 Testing
Procedures II – Aggravated Cycle (FIGURE 507.5-7)

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

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-700T)

Test Result:

No issues were found after the humidity storage test.

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Temperature shock operation test

Test Date: 04-11~12-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

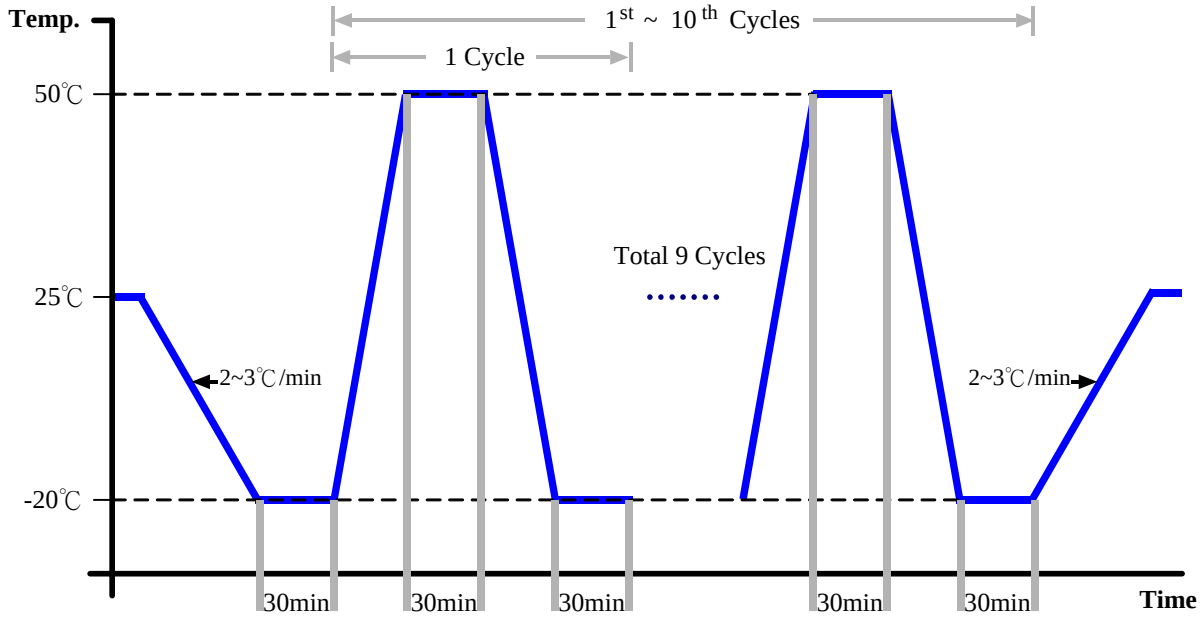
Test Standard: Refer to MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Test Condition:

1. Test Low Temperature: -20℃
2. Test High Temperature: 50℃
3. Test dwell time: 30min
4. Temperature slope: 5 min
5. Test cycle: 10 cycles
6. Test Software: Windows Embedded 7 / Run PassMark Burn In Test 7.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700T)

Test Result:

No issues were found during the variation temperature operation test.

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Temperature shock non-operation test

Test Date: 04-13~15-2013

Test Product: RTC-700T

Test Site: AAEON QE Dept.

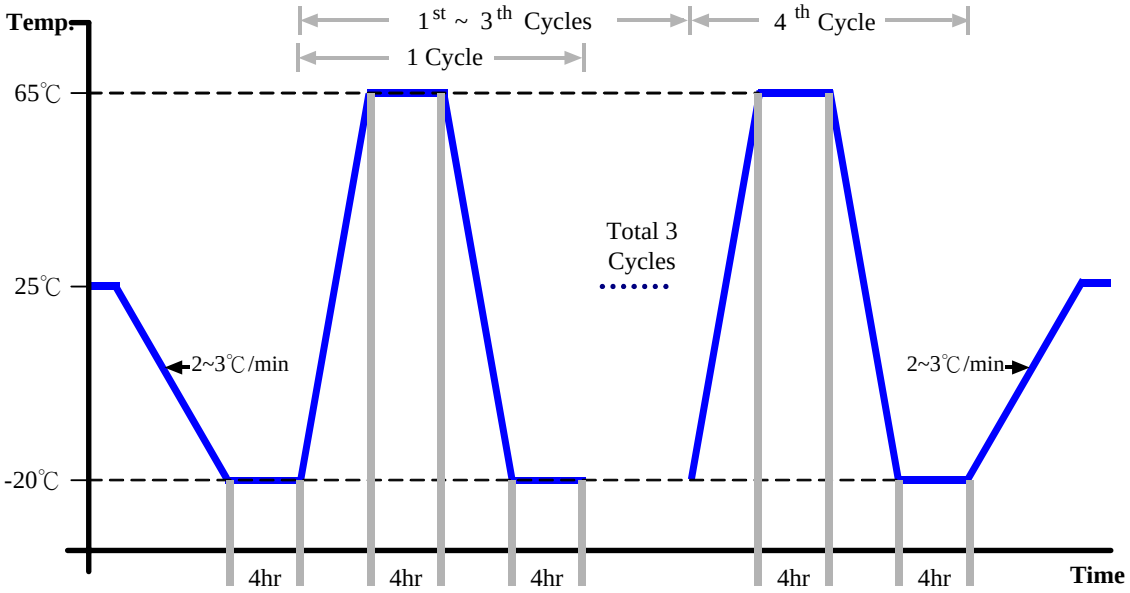
Test Standard: Refer to MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Test Condition:

1. Test Low Temperature: -20℃
2. Test High Temperature: 65℃
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-700T)

Test Result:

No issues were found after the variation temperature non-operation test.

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Cold start and hot start test

Test Date: 04-09~10-2013

Test Product: RTC-700T

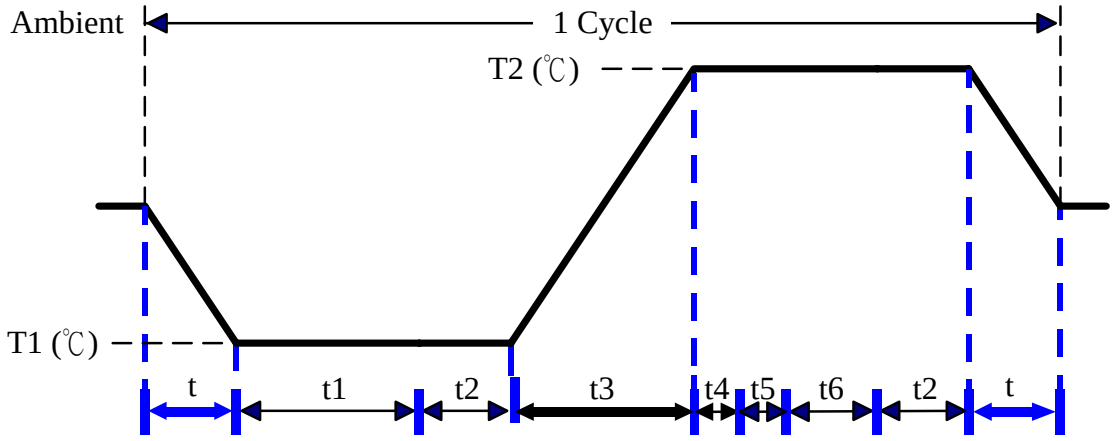
Test Site: AAEON QE Dept.

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-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

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 PassMark Burn In Test
t5: Win XP Software restart test 3 times
Test Software:Windows XP

Test Result:

a. No issues were found during the cold start test.
b. No issues were found during the hot start test.

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