RTC-700C

Environment Test Report

Report NO: 14R020001

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
2014-10-22	**Tom Lin**	**Ben Sun**

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-700C		
Sample Configuration & Quantity Under Test:		
Num	**Item**	**Spec**
RTC-700C		
01.	**CPU:**	Intel® Atom™ Z2760 Processor / 1.8GHz
02.	**PCBA**	RTC-700C A0.3
03.	**BIOS**	BIOS (V0.4.7)
04.	**Memory**	DDRII 2GB Mobile RAM
05.	**mSATA**	eMMC 64GB/ SanDisk.SDIN7DP4-64G
	3G	Anydata DTL718-W-P
06.	**WLAN + BT Module**	AW-AH691
07.	**Battery**	JHT.JHT-795RTC70-A(J1067-1), 2S1P 3700mAh
08.	**AC Adapter**	LTE24E-S2-2C6 (Output: 12V / 2A)
09.	**Test Software**	Windows Embedded 8.1 / Run PassMark BurnIn Test 7.0 Pro

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Temp./humidity power on/off test

Test Date: 10-08~09 - 2014

Test Model: RTC-700C 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:

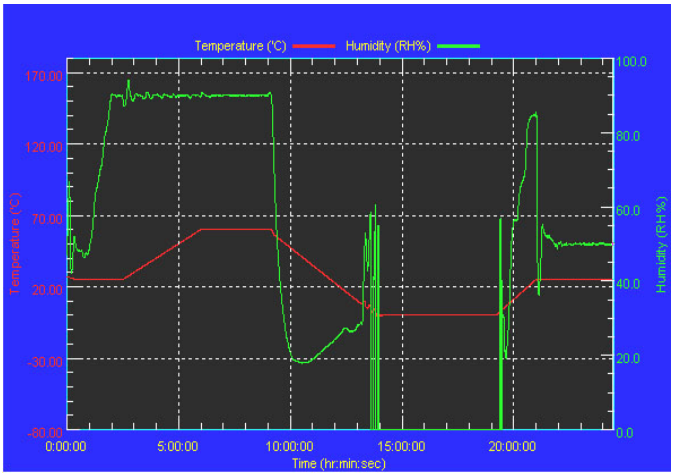
Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-B6T-150+LN2
Date of Calibration: 09/1/14
Serial Number: 9095KT

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	1835/times	1835/times	0 %
Note: Failure rate need to be 0%.			

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Room Temperature test

Test Date: 10-13-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 09/11/14
Serial Number: 12A323190

Test Condition:

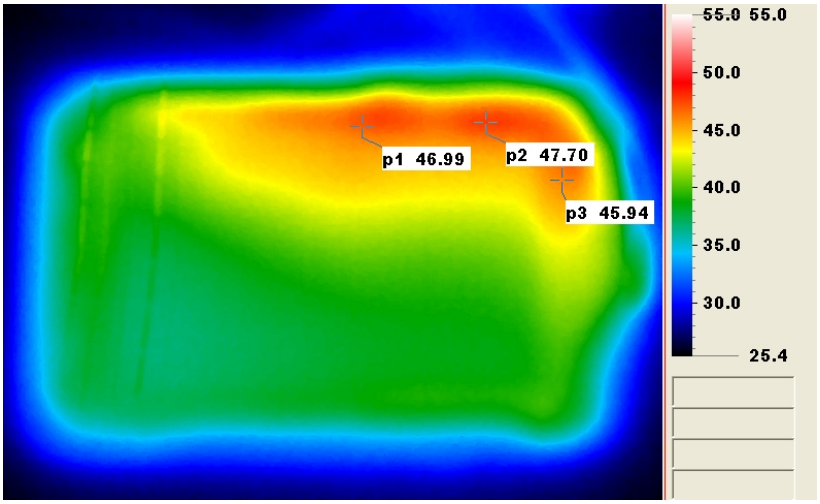
Ambient temperature: 25℃
Continuous running till thermal stability (within less than 1℃)

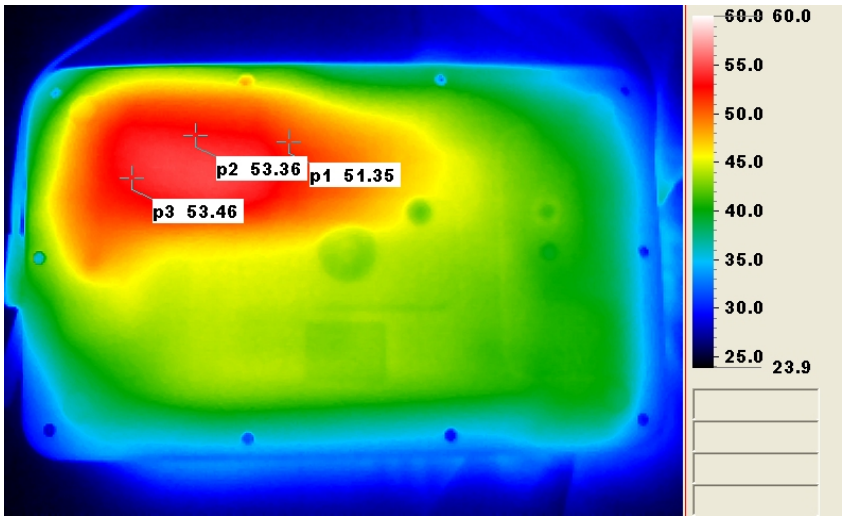
Test Software:

Windows Embedded 8.1 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：





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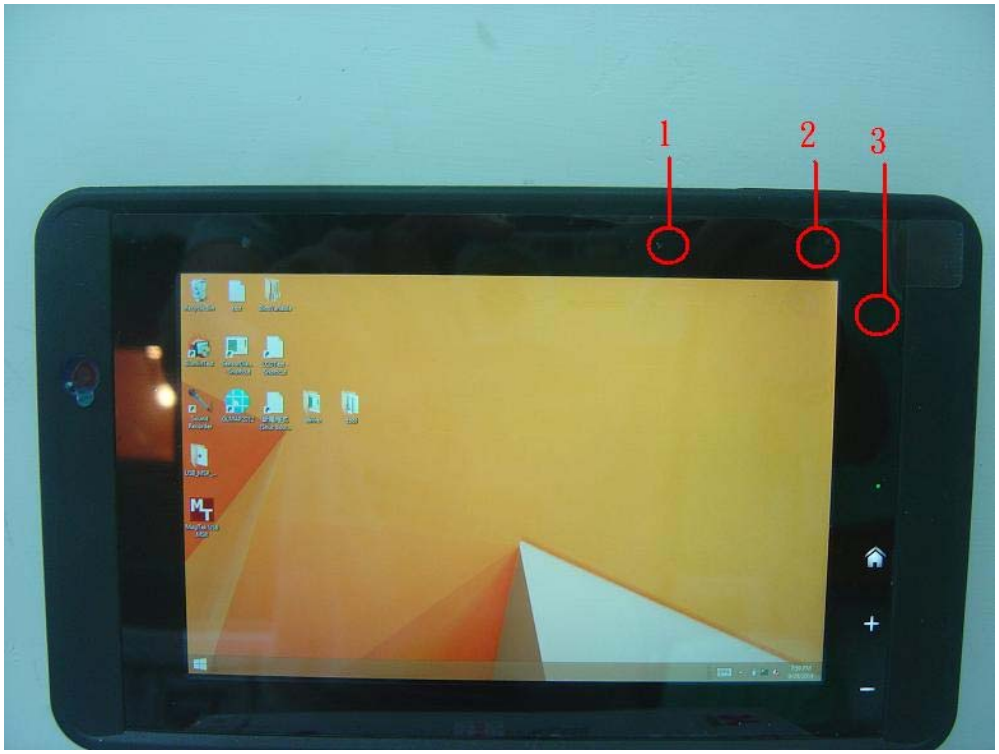
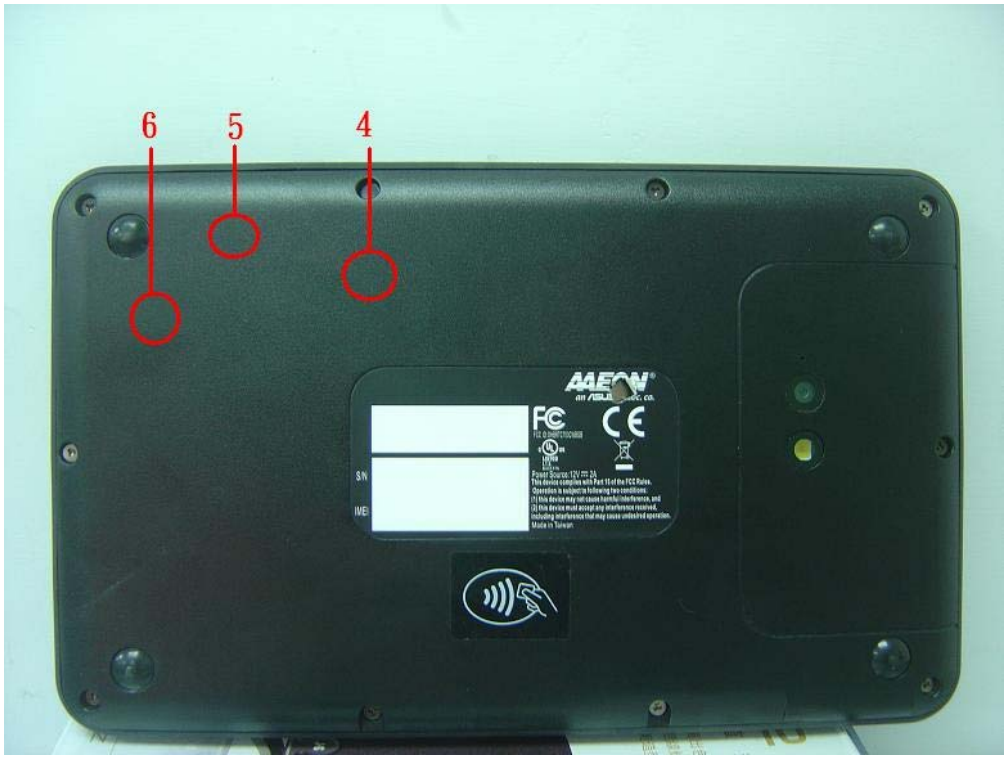
Room Temperature test





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Thermal profile data:

RTC-700C

Point / Temp. Stage(℃)	Spec	25
1. Point 1		40.2
2. Point 2		44.2
3. Point 3	△T	40.7
4. Point 4	≦25	44.7
5. Point 5	℃	41.6
6. Point 6 -		39.9
Room Temperature		25.1
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-700C)

Test Result:

No issues were found during the room temperature operation test.

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Temperature rise test

Test Date: 10-14~15-2014

Test Product: RTC-700C

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: 09/11/14
Serial Number: 12A323190

Test Condition:

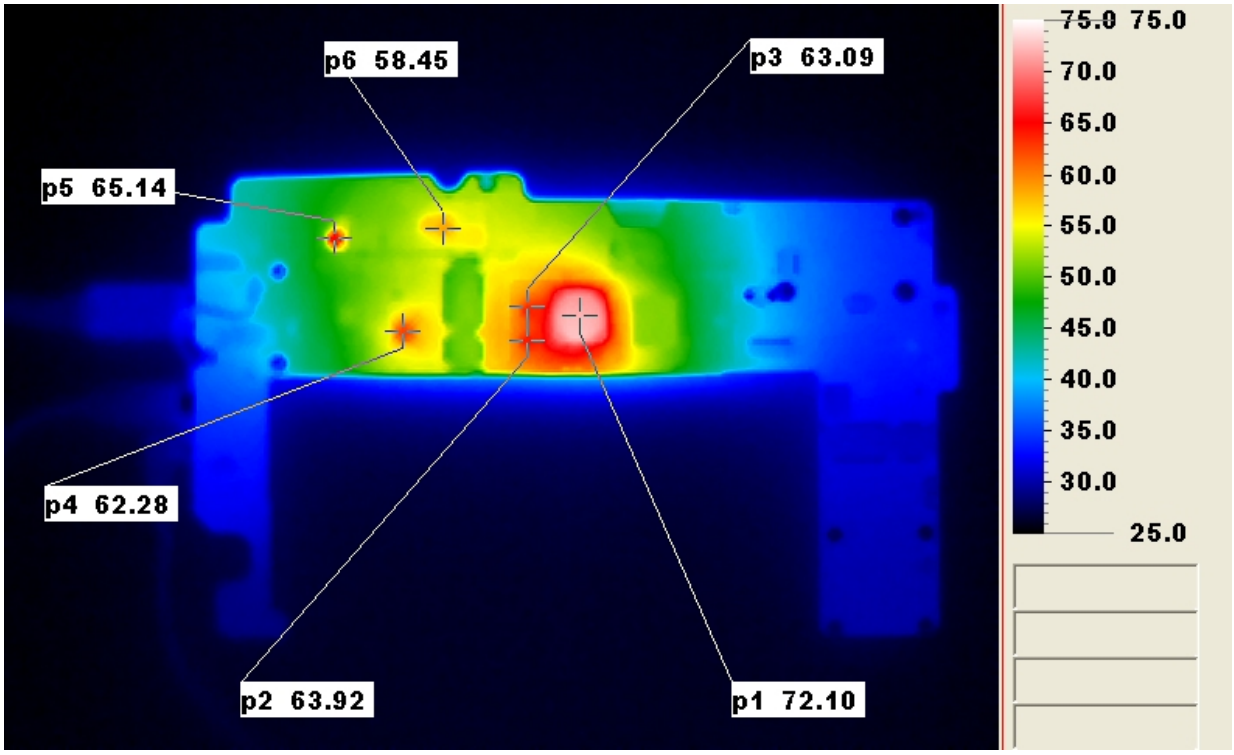
Ambient temperature: 27℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows Embedded 8.1 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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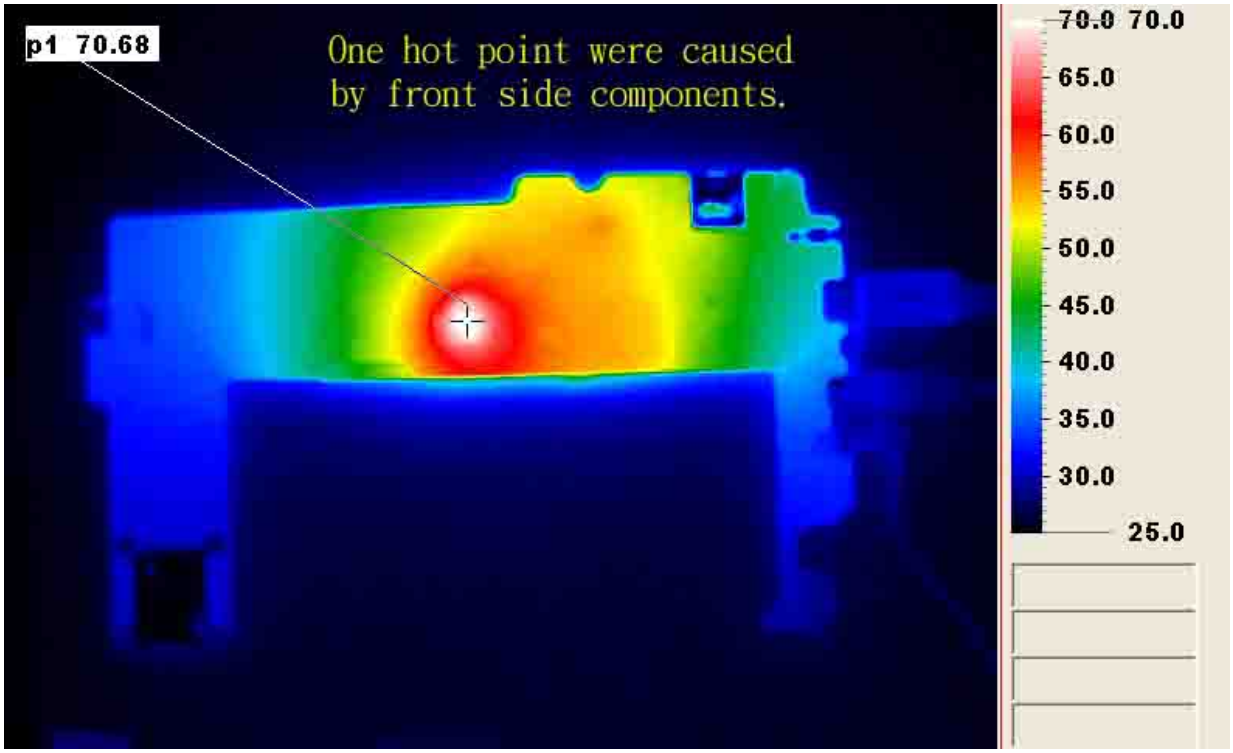

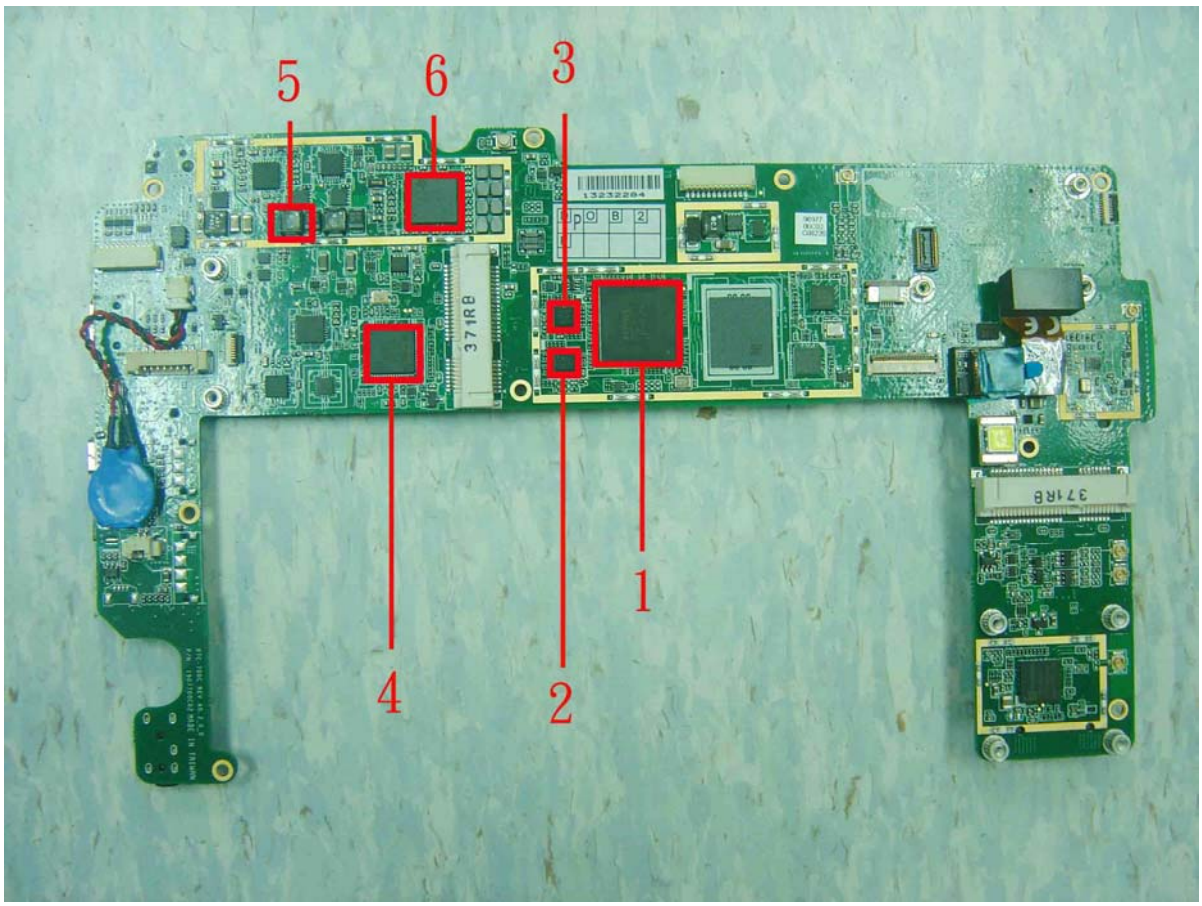

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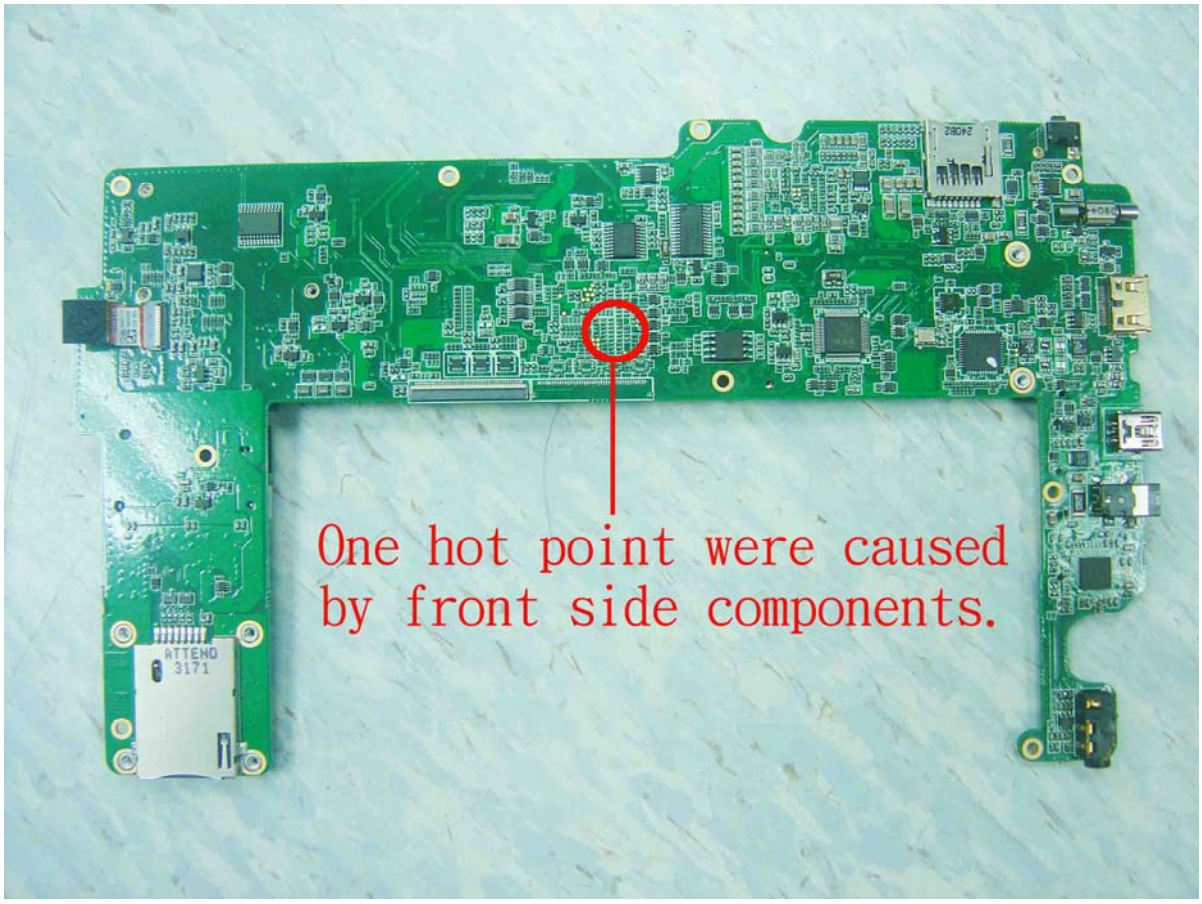

Thermal profile data:

RTC-700C

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under 27.0℃	Note
1	Bottom - U1	(TF)INTEL SOC.Cloverview.1.8GHz. Atom Z2760	90℃	69.8	
	Top - U4	(TF)DDR2 Mobile RAM PoP. ELPIDA.EDBA164B1PF-1D-F	85℃		
2	U5	(TF)ULPI Hi-Speed.USB Transceiver. TI.TUSB1211A1ZRQR	100℃	61.5	
3	U6	(TF)ULPI Hi-Speed.USB Transceiver. TI.TUSB1211A1ZRQR	100℃	64.5	
4	U75	(TF)USB2.0 7-PORT HUB CONTROLLER..SMSC.USB2517i-JZX	85℃	70.7	
5	U72	(TF) Integrated Power Management. TI.SNB5072A1ZNBR	85℃	67.4	
6	L15	(TF)COIL. COOPER.MPI4040R3-3R3-R	125℃	65.6	

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.

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700C)

Test Result:

No issues were found during the temperature rise operation test.

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High temperature storage test

Test Date: 09-15 ~ 22-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

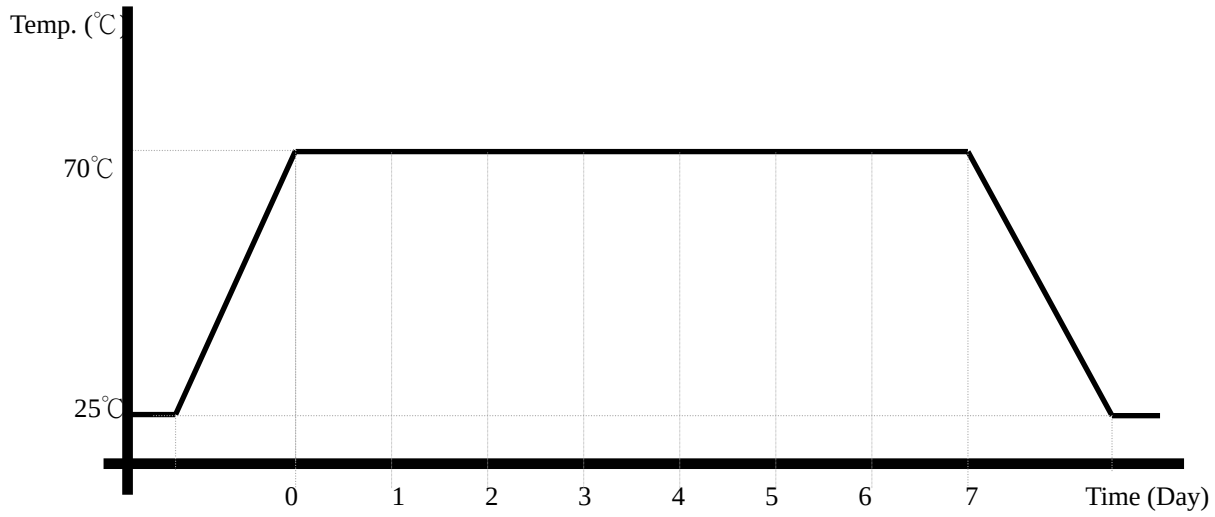
Test Standard: Refer to MIL-STD 810G Method 501.5 High Temperature
Procedure I - Storage

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 09/01/14
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 70℃
2. Test Time: 7days
3. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700C)

Test Result:

No issues were found after the high temperature storage test.

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High temperature operation test

Test Date: 09-09 ~ 13-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

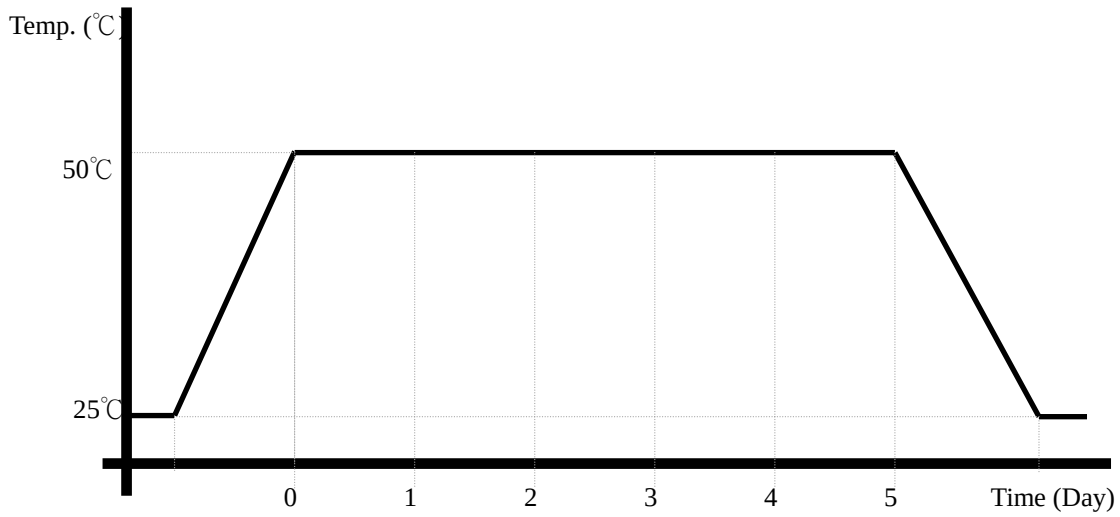
Test Standard: Refer to MIL-STD 810G Method 501.5 High Temperature
Procedure II - Operation

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 09/01/14
Serial Number: 9095KT

Testing Item:

4. Test Temperature: 55℃
5. Test Time: 5days
6. Test Software: Windows Embedded 8.1 / Run PassMark Burn In Test 7.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (RTC-700C)

Test Result:
No issues were found during the high temperature operation test.

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Low temperature storage test

Test Date: 09-05~06-2014

Test Product: RTC-700C

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: 09/01/14
Serial Number: 9095KT

Testing Item:

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

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700C)

Test Result:

No issues were found after the low temperature storage test.

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Low temperature operation test

Test Date: 09-01~02-2014

Test Product: RTC-700C

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: 09/01/14
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -23℃
2. Test Times: 24Hrs
3. Test Software: Windows Embedded 8.1 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700C)

Test Result:

No issues were found during the low temperature operation test.

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Humidity test

Test Date: 09-23~27-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

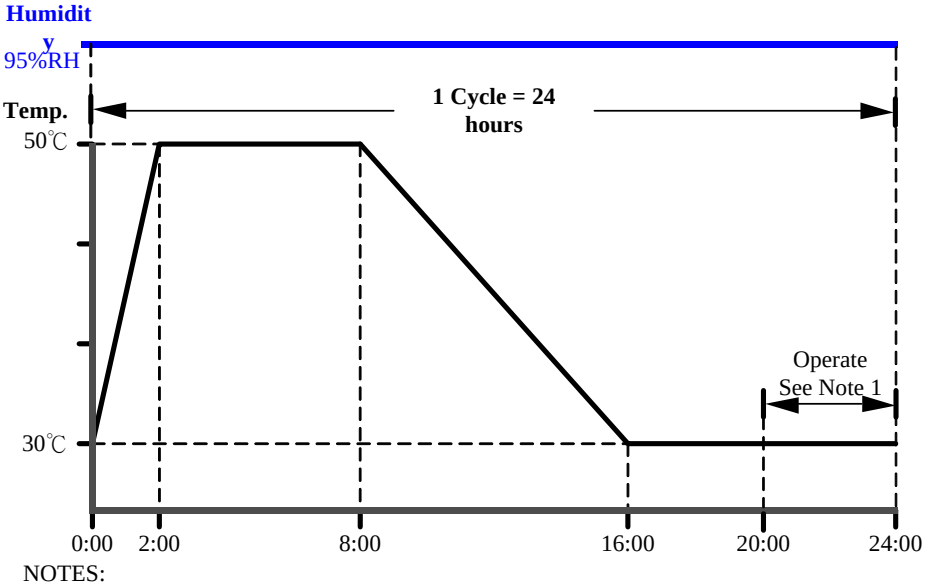
Test Standard: Refer to MIL-STD 810G Method 507.5 Testing
Procedures II – Aggravated Cycle (FIGURE 507.5-7)

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 09/01/14
Serial Number: 9095KT

Test Condition:

1. Test Humidity: 95%RH
2. Test Temperature: 50℃ / 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-700C)

Test Result:

No issues were found after the humidity storage test.

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Temperature shock operation test

Test Date: 09-29~30-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

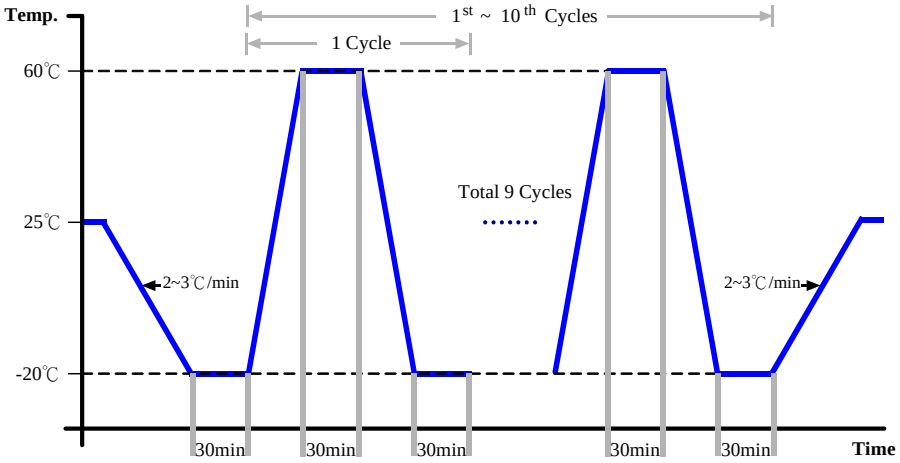
Test Standard: Refer to MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 09/01/14
Serial Number: 9095KT

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 Embedded 8.1 / Run PassMark Burn In Test 7.0 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (RTC-700C)

Test Result:

No issues were found during the variation temperature operation test.

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Temperature shock non-operation test

Test Date: 10-01~03-2014

Test Product: RTC-700C

Test Site: AAEON QE Dept.

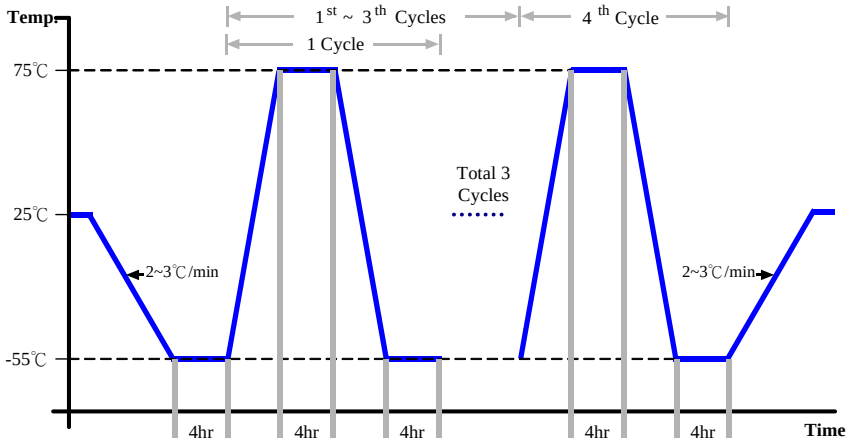
Test Standard: Refer to MIL-STD 810G Method 503.5 Temperature Shock
Procedure I - Shock from constant extreme temperatures

Test Equipment:

Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 09/01/14
Serial Number: 9095KT

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-700C)

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: 10-06~07-2014

Test Product: RTC-700C

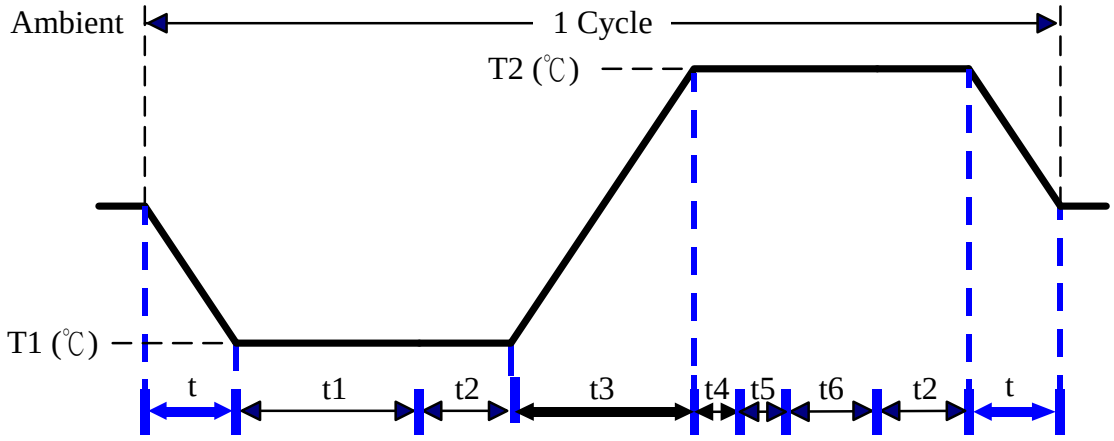
Test Site: AAEON QE Dept.

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: 09/01/14
Serial Number: 9095KT

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 PassMark Burn In Test
t5: Win XP Software restart test 3 times
Test Software:Windows 8.1

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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