

# BOXER-6638U

With 2.5" SATA HDD

## Environment Test Report

Report NO: 16P020001

Summary	<p><input type="checkbox"/> Pass</p> <p><input type="checkbox"/> Fail</p> <p><input checked="" type="checkbox"/> Pass with Deviation</p> <p>Comment: <u>1.Under PassMark Burn In Test 8.0 Pro, test Network set loading to 100% test failed (Error message shows "Timeout waiting for packet") , but change to 99% test pass. Please refer to for PASSMARK SOFTWARE (DTS NO. E140502QED10</u></p> <p><a href="http://www.passmark.com/forum/showthread.php?2931-How-to-test-burnin-test-with-Network">http://www.passmark.com/forum/showthread.php?2931-How-to-test-burnin-test-with-Network</a></p>
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Issue date

QE Manager

Test Engineer

2016-01-06

KJ Wang

Rex Chang

# Test item list

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## Testing Result

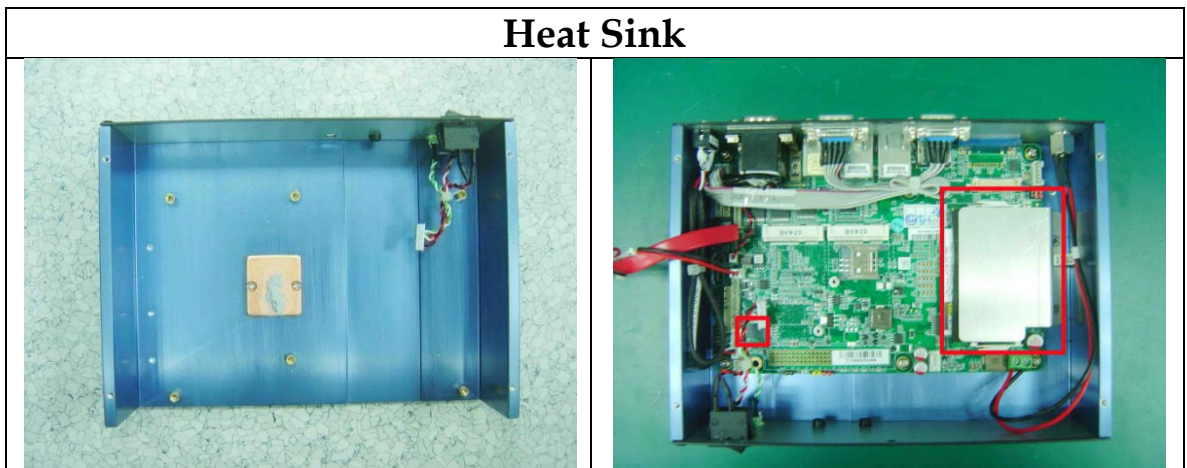
Num	Test item list	Result	Remark
1	High temperature operation test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

# Configuration of EUT

Num	Item	Spec
<b>1.</b>	<b>Fanless System</b>	BOXER-6638U
	1. Main Board	EPIC-BD07 A1.1_0
	2. BIOS Ver.	BOXER-6638U T0.1
	3. CPU Type	Intel Core i3-5010U / 2.10GHz
	4. Chipset	Intel Broadwell M/D SOC processor
	5. Wide Temp. Memory	MAMPHIS 2GB * 1 / DDR3L 1600 / IM 1M4G16D3F
	6. Wide Temp. HDD	TOSHIBA 100G / MQ01AAD010C
	7. Test Software	Windows 7 / Run PassMark BurnIn test 8.1 Pro
<b>2.</b>	<b>Adapter:</b>	FSP / FSP060-DBAE1 / Output: 12V;5A MAX

## Photos

### Heat Sink



### HDD Kit



# High Temperature Operation test

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**Test Date:** 01-06-2016

**Test Product:** BOXER-6638U

**Test Site:** AAEON QE Dept.

**Test Standard:** Refer to IEC 68-2-2 Testing procedures  
Test Bd: Dry Heat Test (Operation)

**Test Equipment:**

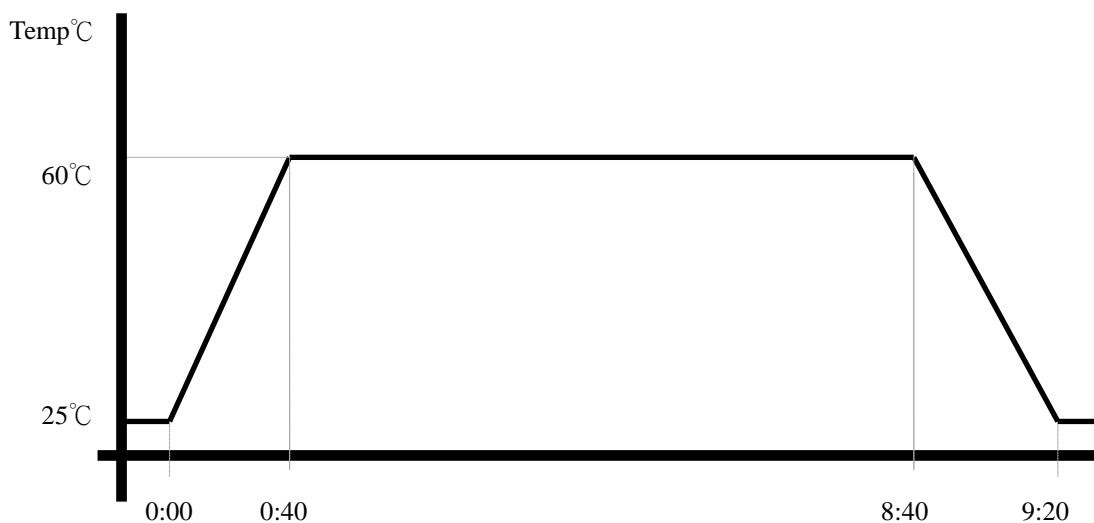
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)  
Model: THS-B6T-150+LN2  
Date of Calibration: 04/27/15  
Serial Number: 6488KT

**Temperature Measurement:**

40 Channel Thermal Recorder:  
YOKOGAWA Inc,  
Model: DA100-13-1D  
Date of Calibration: 09/10/15  
Serial Number: 12A323190

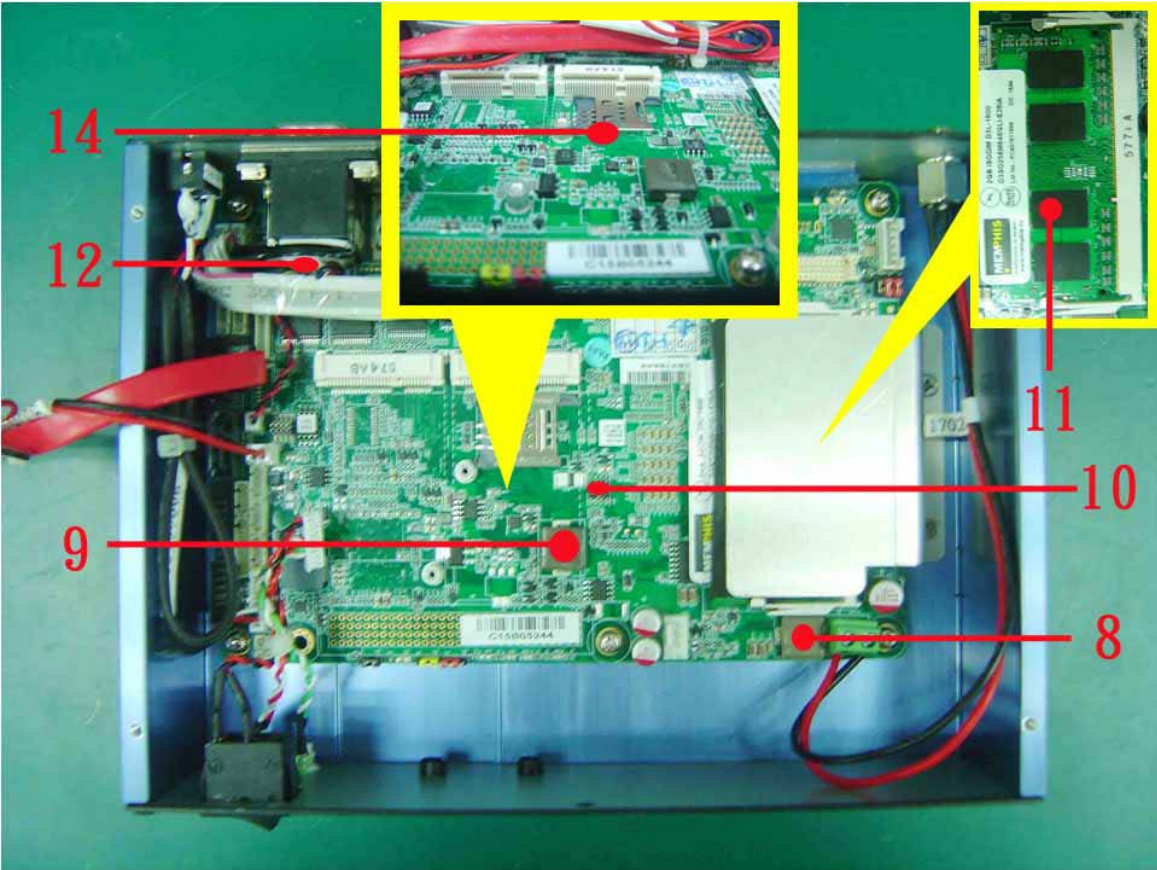
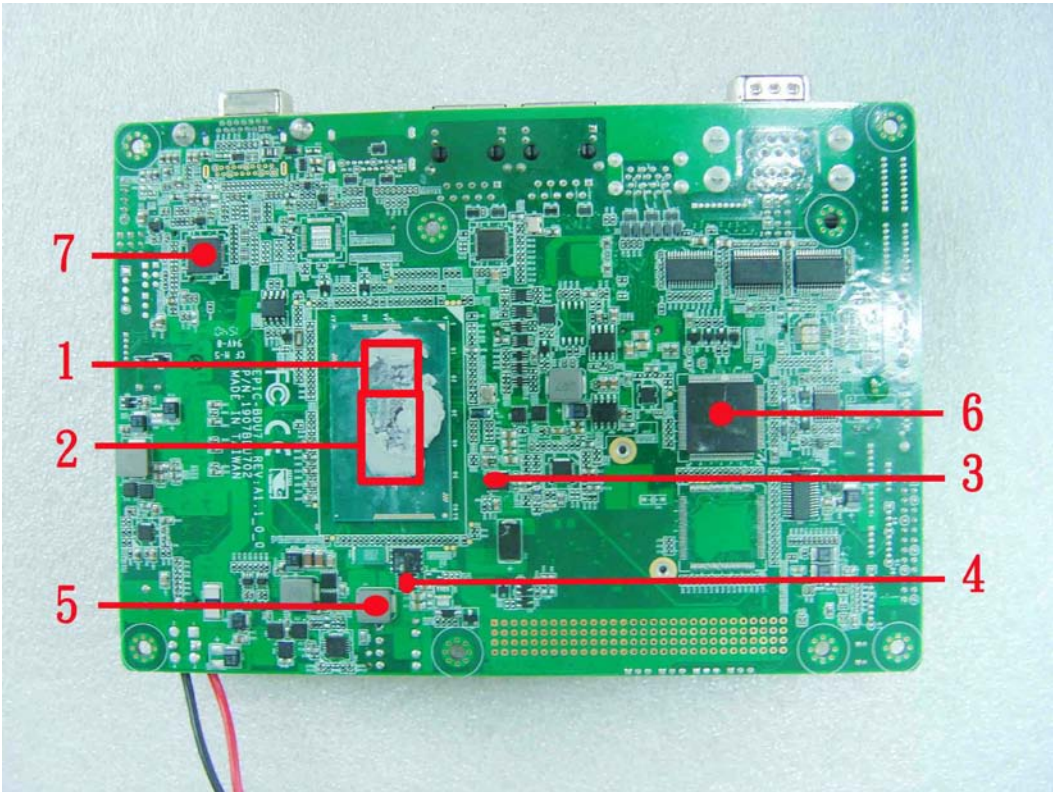
**Testing Item:**

1. Test Temperature: 60°C
2. Test Times: 8Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 8.1 Pro
4. Test Environment Curve:

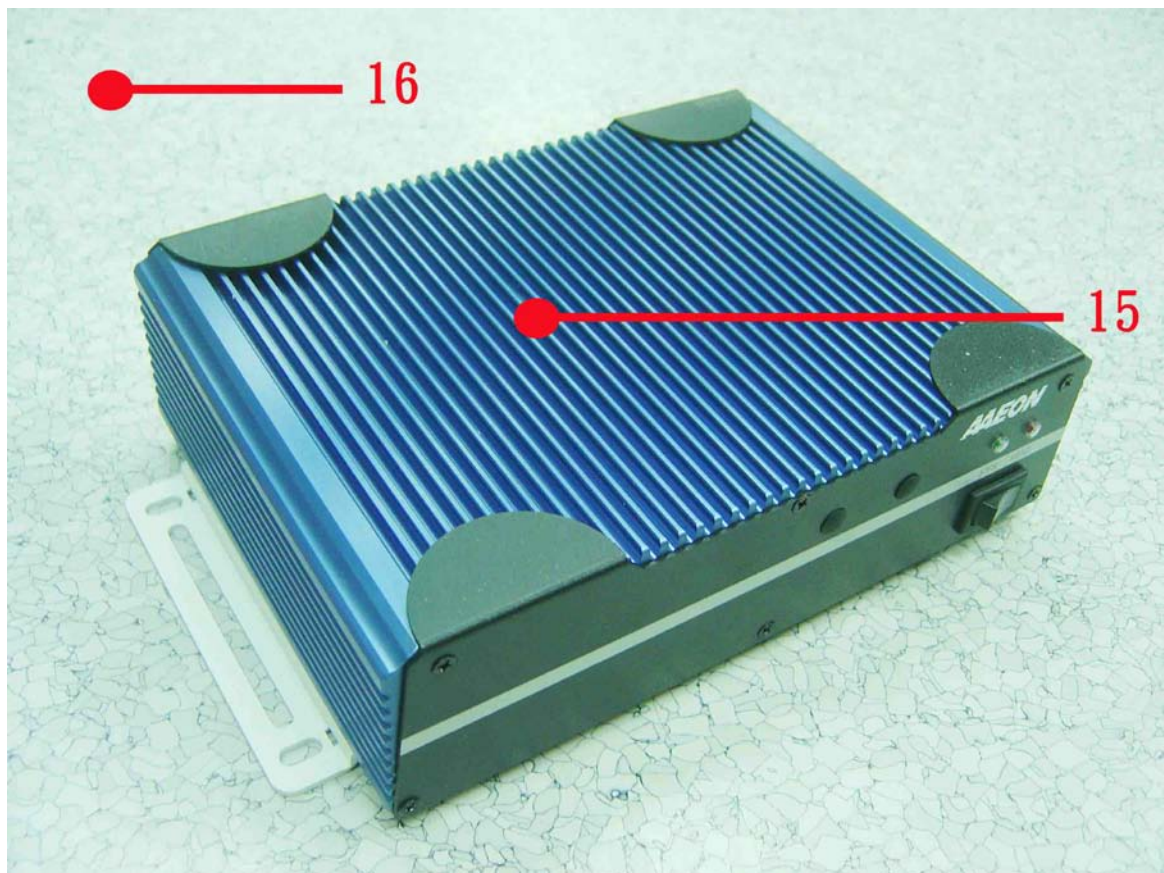
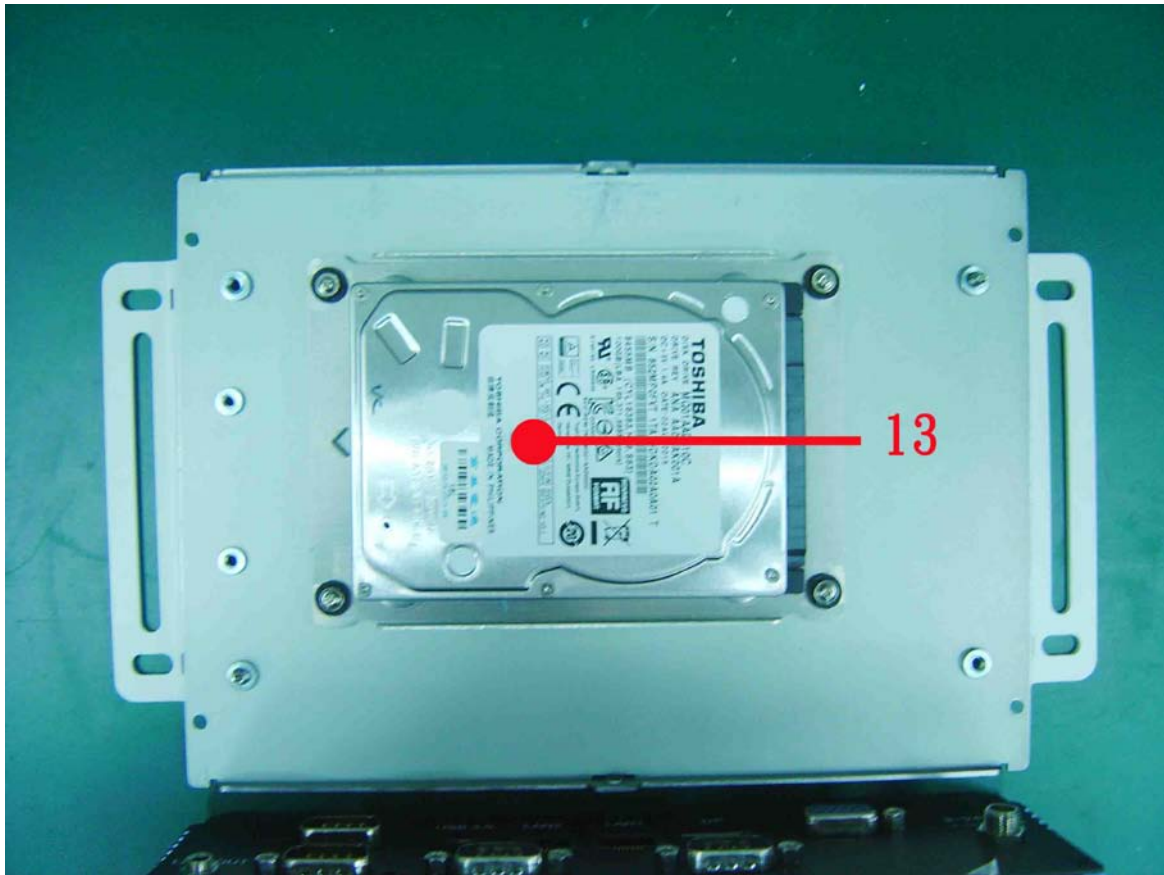


# High Temperature Operation test

Terminal Recorder:



# High Temperature Operation test



# High Temperature Operation test

## Thermal profile data:

BOXER-6638U (With 0.5m/sec airflow)

Point	Temp. Stage(°C)	Spec Tc(*1)	TAT(*2)	TPT(*3)	Note
			60	25	
01. Intel.i3-5010 / 2.1GHz CPU		105	76.1	41.1	
02. Intel HD Graphics 6000		105	76.0	41.0	
03. TI.CSD97374Q4M Power Stage		125	86.4	51.4	
04. FAIRCHILD.FDMS7698 PWR NMOS		125	86.4	51.4	
05. ZenithTek.ZPWM-6030M-3R3M 6A COIL		100	93.2	58.2	
06. Super I/O. Fintek. F81866D-I		127	79.3	44.3	
07. NXP.PTN3460BS Display Port to LVDS Converter		125	75.6	40.6	
08. Zenithtek.ZPWM-1040M-1R0M 21A COIL		125	104.5	69.5	
09. GOTREND.GSTD1040PE-R19M 40A COIL		125	90.1	55.1	
10. FAIRCHILD.FDMC4435BZ PWR PMOS		125	84.4	49.4	
11. Memory		95	76.2	41.2	
12. BATTERY.3V.MAXELL.CR2032M1S8-LF		85	72.0	37.0	
13. HDD		85	79.8	44.8	
14. Control Box Inside Air Temperature		N/A	81.4	46.4	
15. Control Box External Surface Temperature		N/A	73.6	38.6	
16. Chamber Air Temperature		N/A	60.0	25.0	
<b>Note(*):</b> <b>Note(*):</b> <b>1. "Tc"</b> indicates the component's case maximum temperature value specified in its datasheet. <b>2. "TAT"</b> indicates the actual measured temperature under product specification. <b>3. "TPT"</b> indicates the predicted temperature under 25°C working environmental. <b>4. Judgment Criteria:</b> <b>- Fail</b> : $T_m > T_c$ ; The measured value is over specification. <b>- Margin Pas</b> : $T_c > T_m > T_c - 5^\circ\text{C}$ ; The measured value is within specification with margin. It is strongly recommended to add thermal dissipation design for better reliability. <b>- Pass</b> : $T_m < T_c - 5^\circ\text{C}$ ; The measured value is with safety margin. <b>4. Defect NO.</b> <u>N/A</u>					

## Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6638U)

## Test Result:

No issues were found during the temperature rise operation test.

# Temperature cycle test

**Test Date:** 01-01 ~ 03-2016

**Test Product:** BOXER-6638U

**Test Site:** AAEON QE Dept.

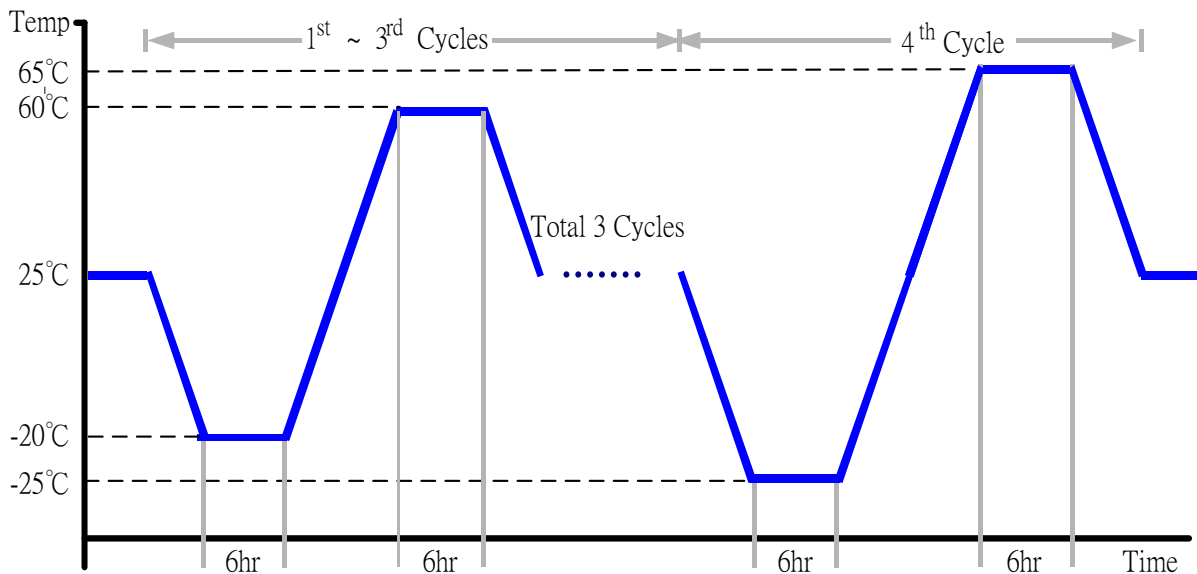
**Test Standard:** Refer to IEC68-2-14 Testing procedures  
Test N: Change of temperature Test

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)  
Model: THS-B6T-150+LN2  
Date of Calibration: 04/27/15  
Serial Number: 6488KT

**Test Condition:**

1. Test Low Temperature: -20°C (1~3 cycles)  
-25°C (4<sup>th</sup> cycle)
2. Test High Temperature: 60°C (1~3 cycles)  
65°C (4<sup>th</sup> cycle)
3. Test dwell time: 6Hrs
4. Temperature slope: 2°C/min
5. Test cycle: 4 cycles
6. Test Software: Windows 7 / Run PassMark Burn In Test 8.1 Pro
7. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (BOXER-6638U)

**Test Result:**

No issues were found during the temperature operation cycle test.



# High temperature storage test

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**Test Date:** 12-29 ~ 31-2015

**Test Product:** BOXER-6638U

**Test Site:** AAEON QE Dept.

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

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)

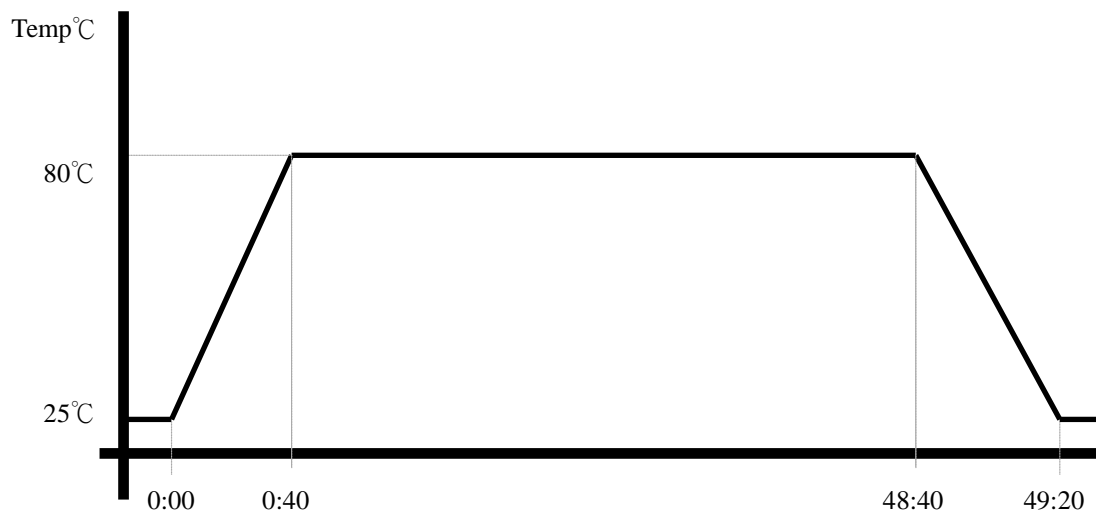
Model: THS-B6T-150+LN2

Date of Calibration: 04/27/15

Serial Number: 6488KT

**Testing Item:**

1. Test Temperature: 80°C
2. Test Times: 48Hrs
3. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (BOXER-6638U)

**Test Result:**

No issue was found after the high temperature storage test.

# Low temperature storage test

**Test Date:** 12-25 ~ 28-2015

**Test Product:** BOXER-6638U

**Test Site:** AAEON QE Dept.

**Test Standard:** Refer to 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-B6T-150+LN2

Date of Calibration: 04/27/15

Serial Number: 6488KT

**Testing Item:**

1. Test Temperature: -40°C
2. Test Times: 48Hrs
3. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (BOXER-6638U)

**Test Result:**

No issue was found after the low temperature storage test.

# Humidity test

**Test Date:** 12-23 ~ 25-2015

**Test Product:** BOXER-6638U

**Test Site:** AAEON QE Dept.

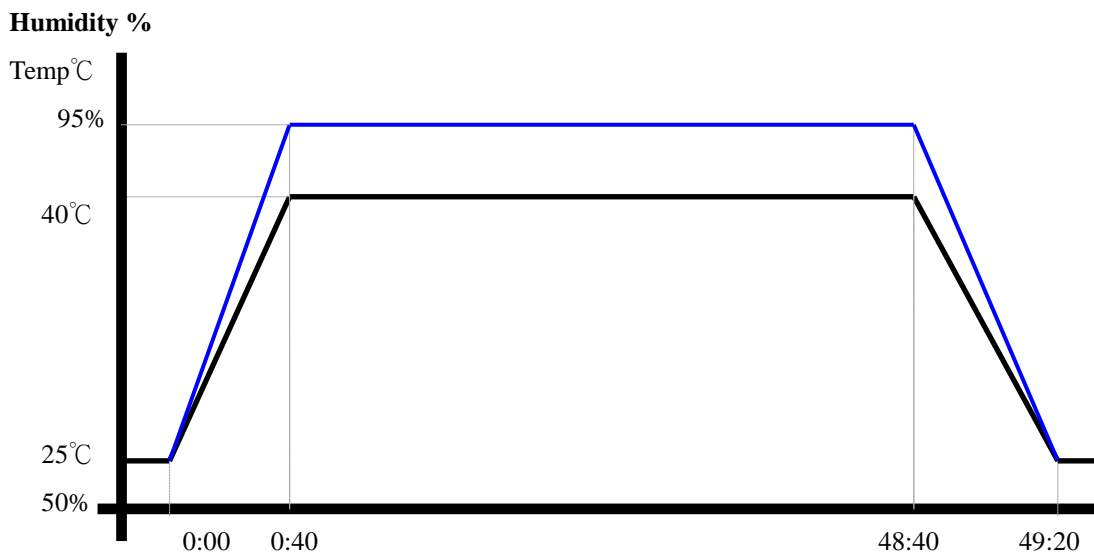
**Test Standard:** Refer to IEC 68-2-3 Testing procedures  
Test Ca: Damp heat, steady state (Non-operation)

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)  
Model: THS-B6T-150+LN2  
Date of Calibration: 04/27/15  
Serial Number: 6488KT

**Testing Item:**

1. Test Temperature: 40°C
2. Test Humidity: 95% RH
3. Test Times: 48Hrs
4. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (BOXER-6638U)

**Test Result:**

No issue was found after the humidity storage test.

# Cold start and hot start test

**Test Date:** 01-04 ~ 05-2016

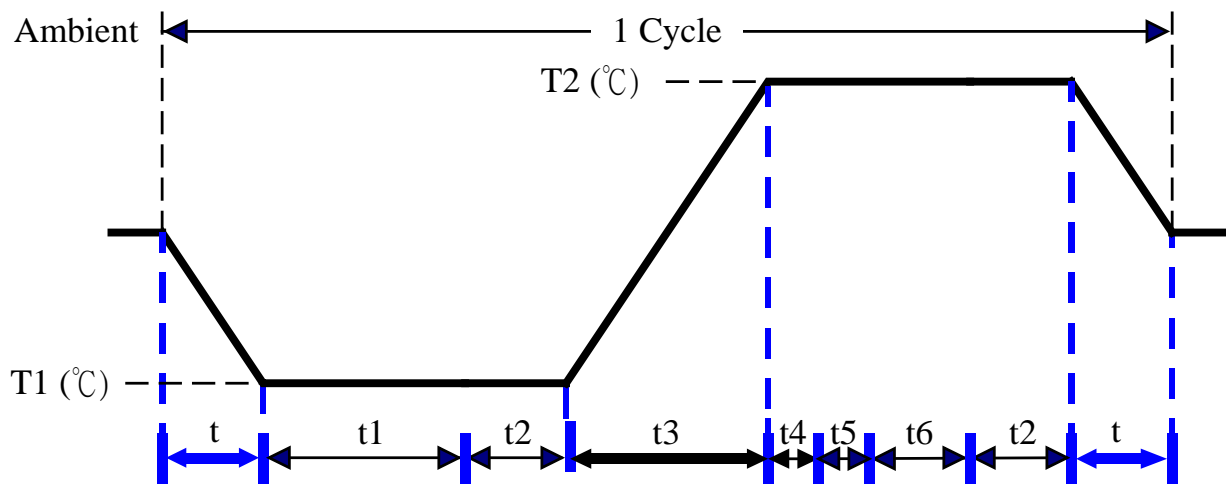
**Test Product:** BOXER-6638U

**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: 04/27/15  
Serial Number: 6488KT

**Test Condition:**



Parameters	Description
T1	-25°C
T2	65°C
t1	4 hrs
t2, t6	2 hrs
t4, t5	1hrs
t, t3	2°C/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 7 Software restart test 2 times  
Test Software: Windows 7

**Test Result:**

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