

# ACP-1073

(with mSATA)

## Environment Test Report

Report NO: 13P020014

Summary	<p><input type="checkbox"/> Pass</p> <p><input type="checkbox"/> Fail</p> <p>Note : There is/are ____ defect(s) not list in the report, please check it in the DTS Website.</p> <p><input checked="" type="checkbox"/> Pass with Deviation</p> <p>Comment: <u>There are three temperature point marginal passed, the function is normal, hope to get improvement for the next generation.</u></p>
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Issue date

2013-10-08

Approval

Tom Lin

Test Engineer

Rex Chang

## Test item list

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### Testing Result

Num	Test item list	Result	Remark
1	Temperature rise 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
1.	Fanless Touch Panel :	ACP-1073
	1. 7" LCD	Suniverse.V070WHU100
	2. Main board	PBA-CV02 A1.0
	3. BIOS	ACP-1073 R0.5 (1073AT05) (07/29/2013)
	4. CPU Type	Intel Atom N2600 / 1.6GHz
	5. Wide Temp. Memory	Transcend 2GB / DDR3-1333 / Hynix H5TQ2G83CFR
	6. Wide Temp. mSATA	MEMORIGHT 29F64G08AFAAA / 16GB
	7. WiFi Module	VNT9271b6050
	8. Test Software	Windows 7 / Run BurnIn test 7.0 Pro
2.	Adapter	FSP FSP060-DBAE1

## Heat Sink



# Temperature rise test

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**Test Date:** 10-08-2013

**Test Product:** ACP-1073

**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: 10/01/13

Serial Number: 12A323190

**Test Condition:**

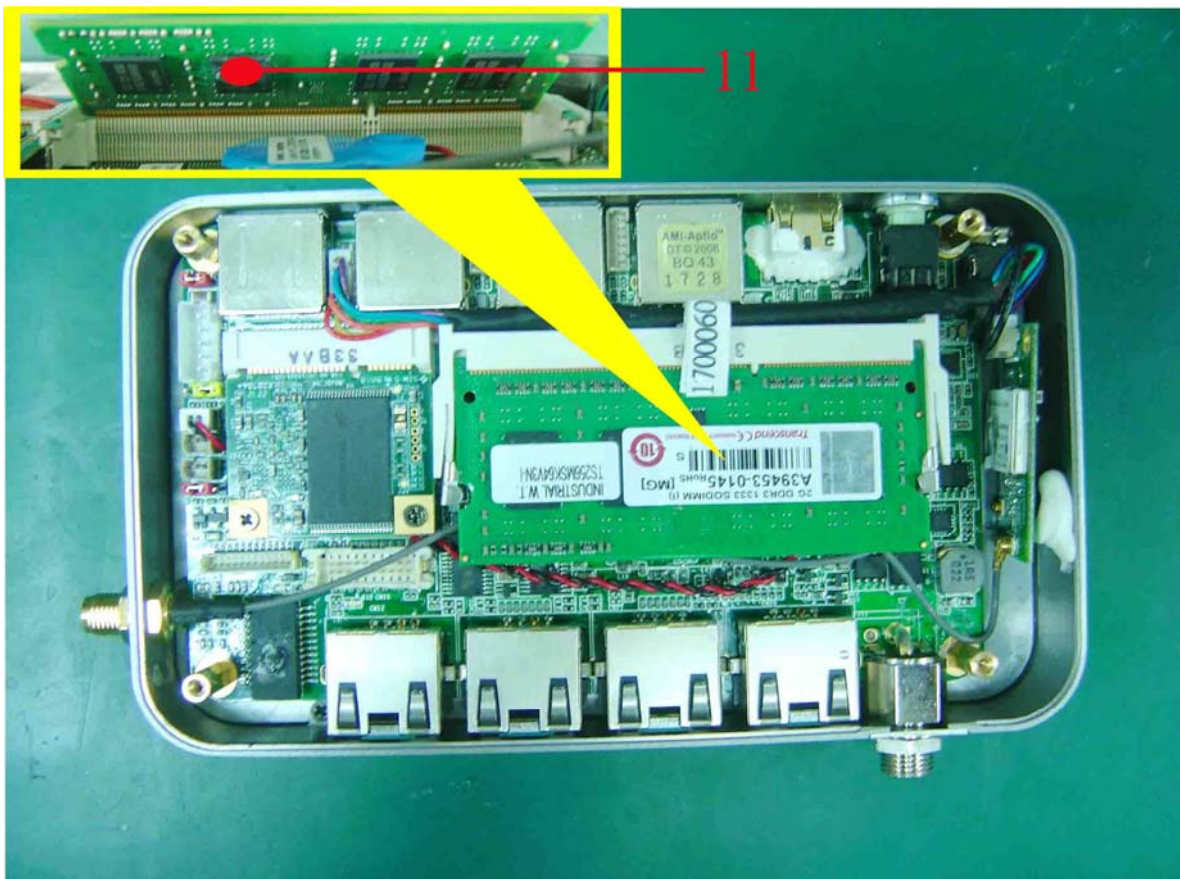
Ambient temperature: 45°C

Continuous running till thermal stability (within less than 1°C)

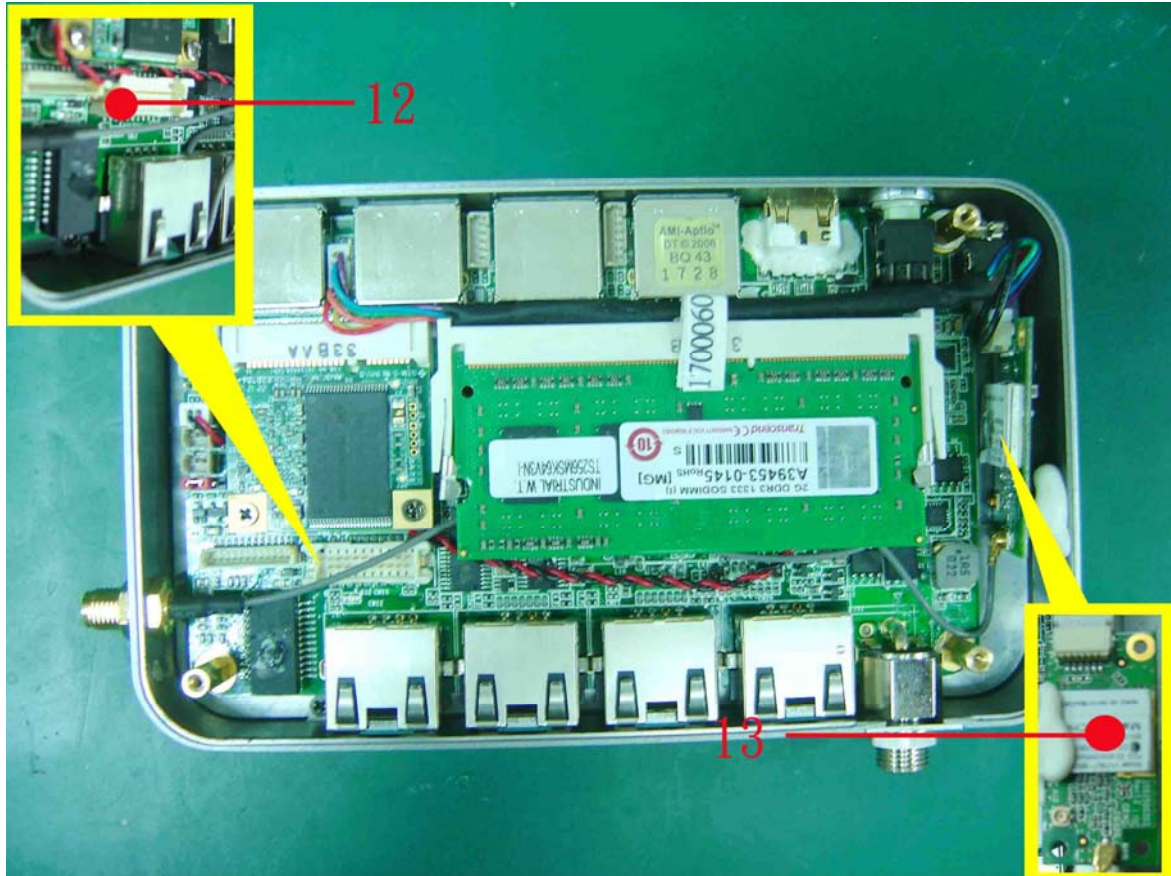
**Test Software:**

Windows 7 / Run PassMark Burn In Test 7.0 Pro

**Terminal Recorder:**



# Temperature rise test



# Temperature rise test

## Thermal profile data:

### ACP-1073

Point	Temp. Stage(°C)	Spec	45	25	Note
01. U9 - (TF) INTEL CPU.Cedarview.1.6GHz.N2600		100	77.0	57.0	
02. U3 - (TF) NM10 Express Chipset.INTEL.CG82NM10		115	84.2	64.2	
03. L3 - (TF) COIL.2.2uH.TRIO.EM-22AM01V01		125	84.6	64.6	
04. U8 - (TF) CLOCK GEN. MLF.IDT.9VRS4339BKLFT		115	82.7	62.7	
05. U5 - (TF) Super I/O.Fintek.F81801U-I		127	81.5	61.5	
06. U16 - (TF) Digital Video Level Shifter.for DP to HDMI.PERICOM.PI3VDP411LSZBE		85	81.6	61.6	Note4
07. Q18 - (TF) PWR.Dual N-Channel. MOSFET.SMD.SO-8.IR.IRF8313PbF		150	89.1	69.1	
08. U10 - (TF) Dual Single-Phase PWM.Richtek.RT8167AGQW		100	82.0	62.0	
09. U7 - (TF) Low dropout Linear Regulator.GMT.G9731F11U		100	76.0	56.0	
10. U35 - (TF) RS-232/RS-485/RS-422 transceiv.Fintek.F81438G		100	82.3	62.3	
11. Memory		85	83.1	63.1	Note4
12. Control Box Inside Air Temperature (mSATA Ambient)		85	74.4	54.4	
13. Wi-Fi Module – VIA VT9271		80	76.4	56.4	Note4
14. Chassis Surface Temperature - 1		N/A	45.2	25.2	
15. Chassis Surface Temperature - 2		N/A	70.5	50.5	
16. Chassis Surface Temperature - 3		N/A	62.1	42.1	
17. Chamber Air Temperature		N/A	45.0	25.0	
<b>Note(*):</b> 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. <b>3. Judgment Criteria:</b> - <b>Fail</b> : $T_m > T_c$ ; The measured value is over specification. - <b>Margin Pass</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>Defect No. P130716QED11</b>					

## Sample Configuration & Quantity Under Test:

Quantity: 1 (ACP-1073)

## Test Result:

No issues were found during the temperature rise operation test.

# Temperature cycle test

**Test Date:** 10-04 ~ 07-2013

**Test Product:** ACP-1073

**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.)

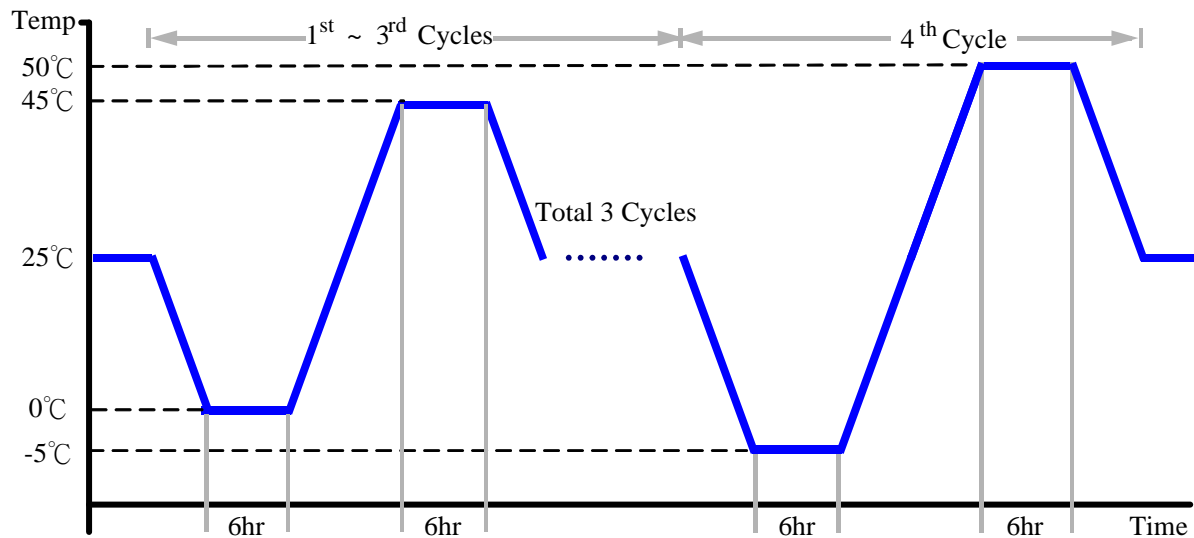
Model: THS-B6T-150+LN2

Date of Calibration: 03/07/13

Serial Number: 6488KT

**Test Condition:**

1. Test Low Temperature: 0°C (1~3 cycles)  
-5°C (4<sup>th</sup> cycle)
2. Test High Temperature: 45°C (1~3 cycles)  
50°C (4<sup>th</sup> cycle)
3. Test dwell time: 6Hrs
4. Temperature slope: 2°C/min
5. Test cycle: 4 cycles
6. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (ACP-1073)

**Test Result:**

No issues were found during the temperature operation cycle test.

# High temperature storage test

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**Test Date:** 10-01 ~ 03-2013

**Test Product:** ACP-1073

**Test Site:** AAEON QE Dept.

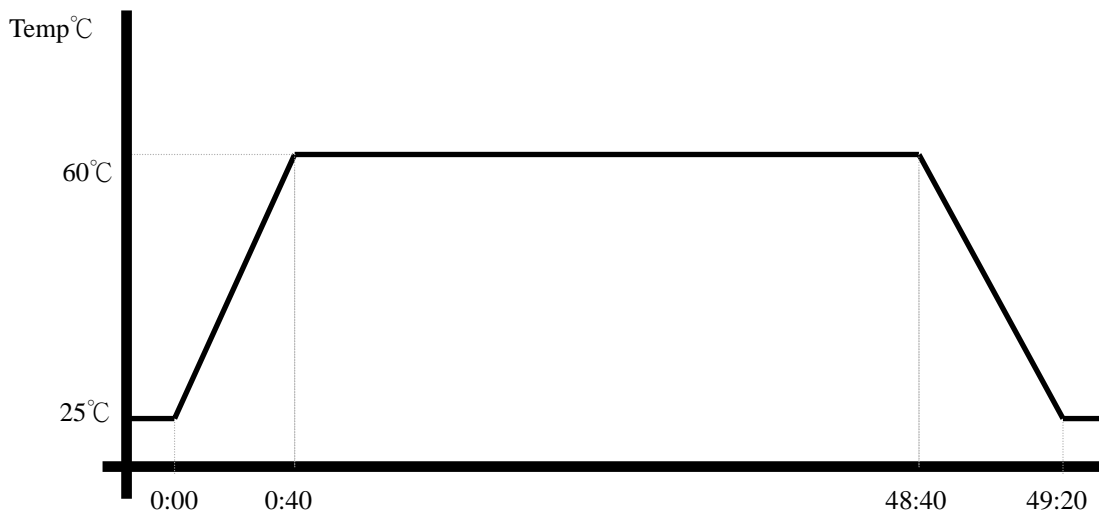
**Test Standard:** Refer to IEC 68-2-2 Testing procedures  
Test Bb: Dry Heat Test (Non-operation)

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)  
Model: THS-B6T-150+LN2  
Date of Calibration: 03/07/13  
Serial Number: 6488KT

**Testing Item:**

1. Test Temperature: 60°C
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (ACP-1073)

**Test Result:**

No issues were found after the high temperature storage test.



# Low temperature storage test

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**Test Date:** 09-28 ~ 30-2013

**Test Product:** ACP-1073

**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: 03/07/13  
Serial Number: 6488KT

**Testing Item:**

1. Test Temperature:  $-10^{\circ}\text{C}$
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (ACP-1073)

**Test Result:**

No issues were found after the low temperature storage test.

# Humidity test

**Test Date:** 09-26 ~ 28-2013

**Test Product:** ACP-1073

**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.)

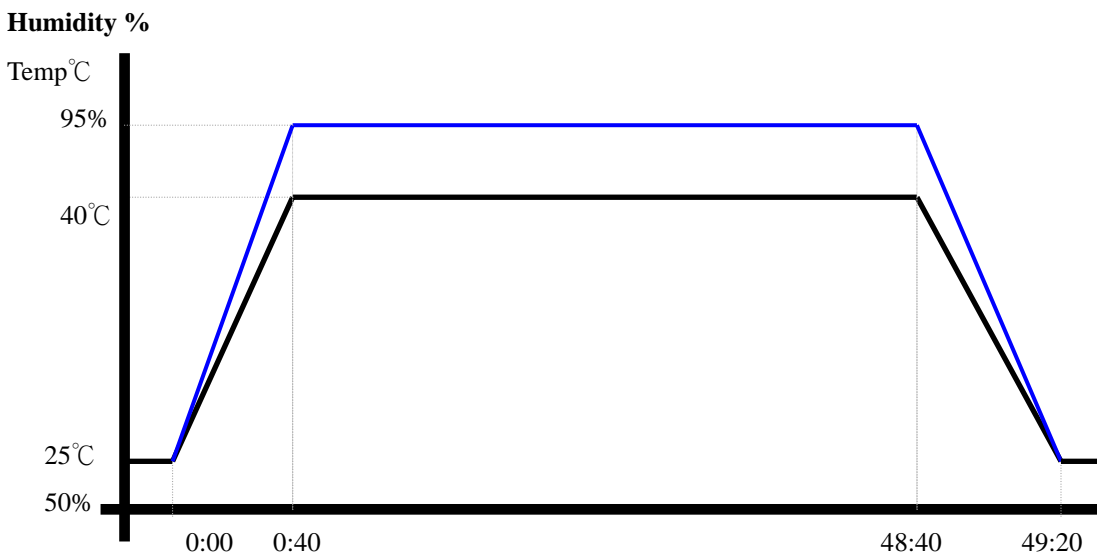
Model: THS-B6T-150+LN2

Date of Calibration: 03/07/13

Serial Number: 6488KT

**Testing Item:**

1. Test Temperature: 40°C
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
5. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (ACP-1073)

**Test Result:**

No issues were found after the humidity storage test.

# Cold start and hot start test

**Test Date:** 10-03~ 04-2013

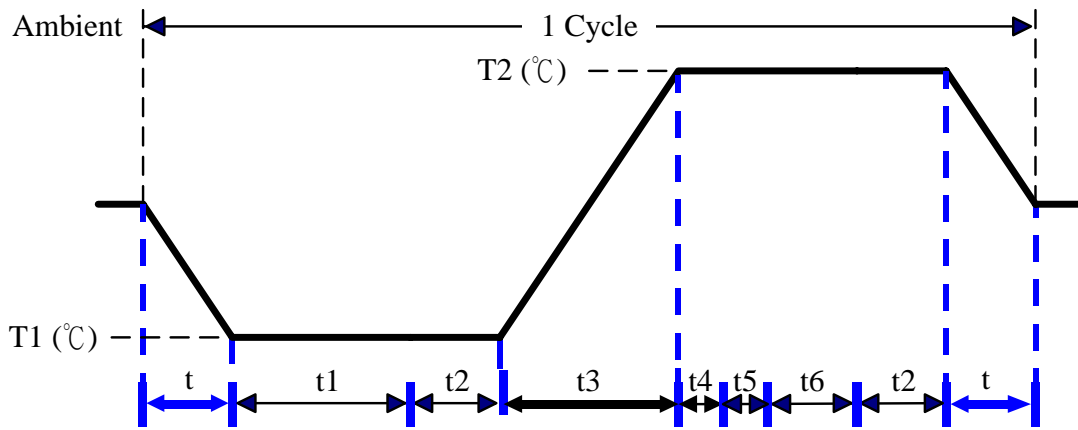
**Test Product:** ACP-1073

**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: 03/07/13  
 Serial Number: 6488KT

**Test Condition:**



Parameters	Description
T1	-5°C
T2	50°C
t1	4 hrs
t2, t6	2 hrs
t4, t5	1hrs
t, t3	2°C/min
n (Cycle)	1

t = temperature slope  
 t, t1, t6: Power Off  
 t2: Power on/off test 10 times (on 2 min / off 5min)  
 t3, t4: Run burn in test 7.0  
 t5: Win 7 Software restart test 3 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.