

# CES-CV101

With 2.5" SATA HDD

## Environment Test Report

Report NO: 14P020008

Summary	<p><input checked="" type="checkbox"/> <b>Pass</b></p> <p><input type="checkbox"/> <b>Fail</b></p> <p>Note : There is/are ____ defect(s) not list in the report, please check it in the DTS Website.</p> <p><input type="checkbox"/> <b>Pass with Deviation</b></p> <p><b>Comment:</b></p>
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**Issue date**

**Approval**

**Test Engineer**

2014-03-19

Tom Lin

Jerry Chen

## 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

Item	Device Information	
SYSTEM PC Model / Ver.	CES-CV101 A1.0	
Mother Board	EPB-CV101 A0.3	
BIOS / Version	EPB-CV101 R0.8(BCV1AM08)(01/22/2014)	
CPU Type	Intel Atom CPU D2550 1.86GHz	
Memory Type	DDR3 800 MHz On Board 2G RAM(SEC K4B2G0846Q)	
HDD	Toshiba 2.5" SATA HDD (MK1060GSC) / 100GB	
Operating System	<input checked="" type="checkbox"/>	Windows 7 Ultimate English 32 Bit
DC Adapter	FSP084-DMAA1/ DC 12V/ 7.0A	

## System picture:



## Heat Sink



# Temperature rise test

**Test Date:** 03-18~19-2014

**Test Product:** CES-CV101

**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: 50°C

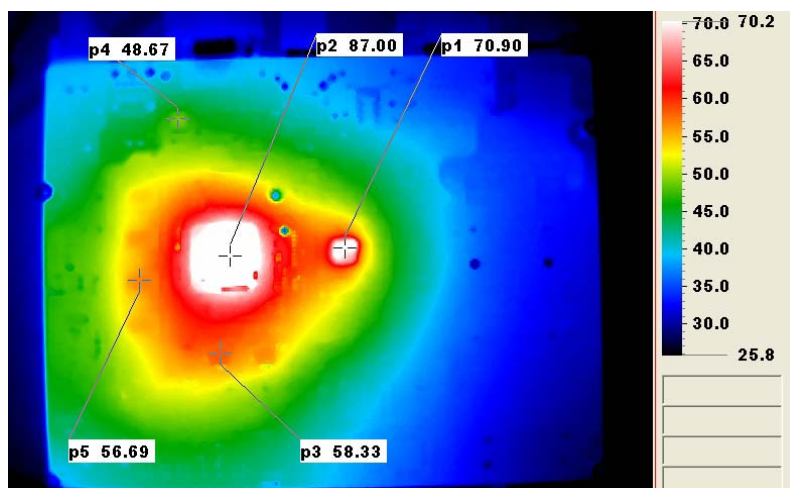
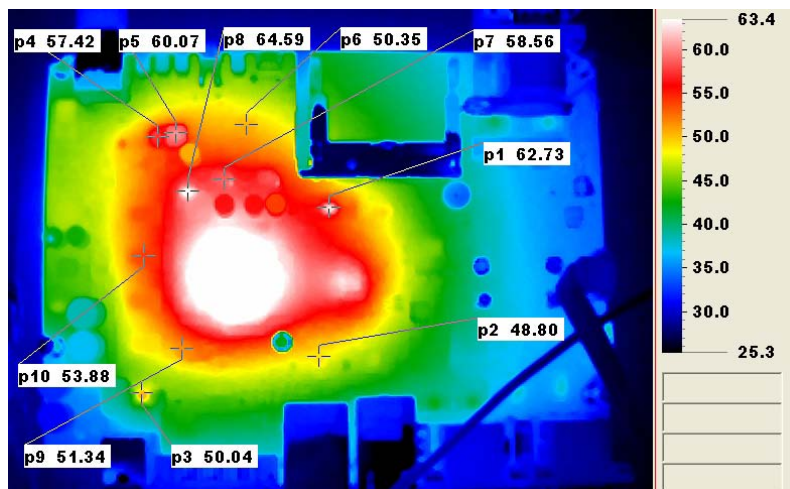
Continuous running till thermal stable (within less than 1°C)

**Test Software:**

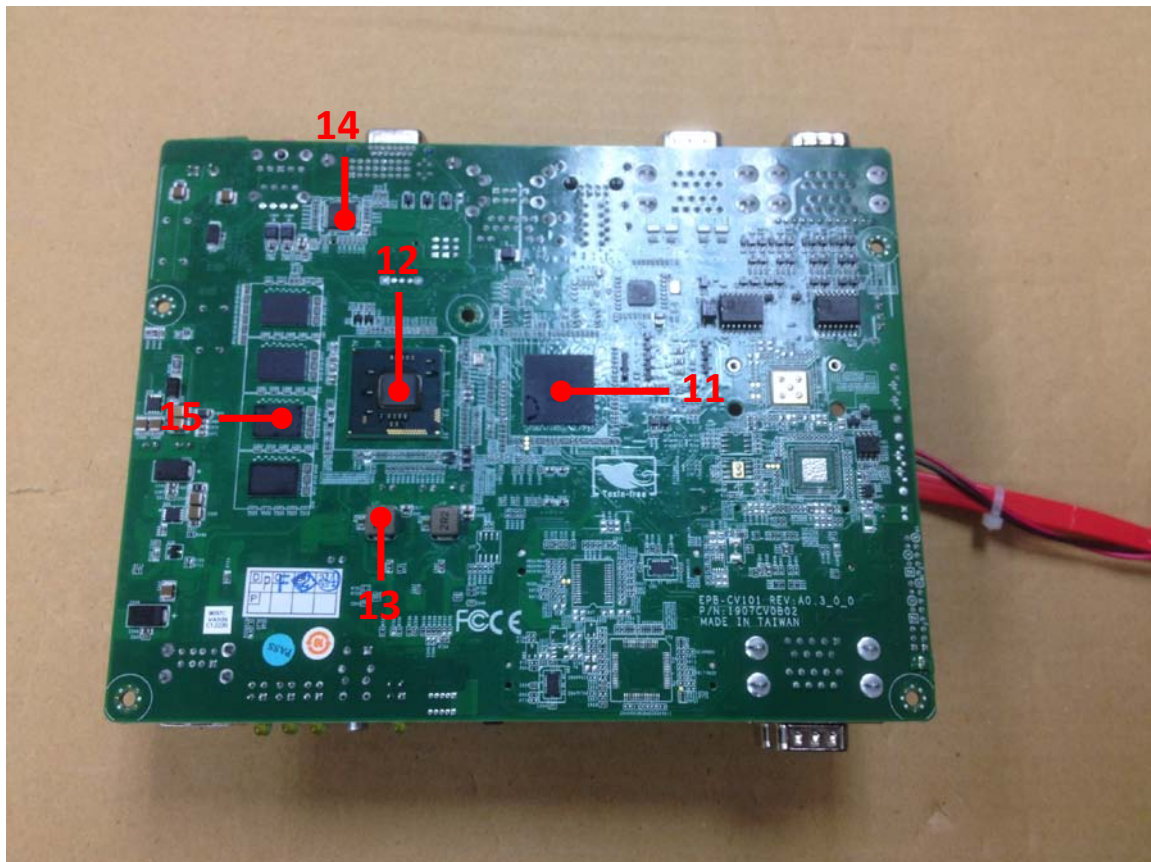
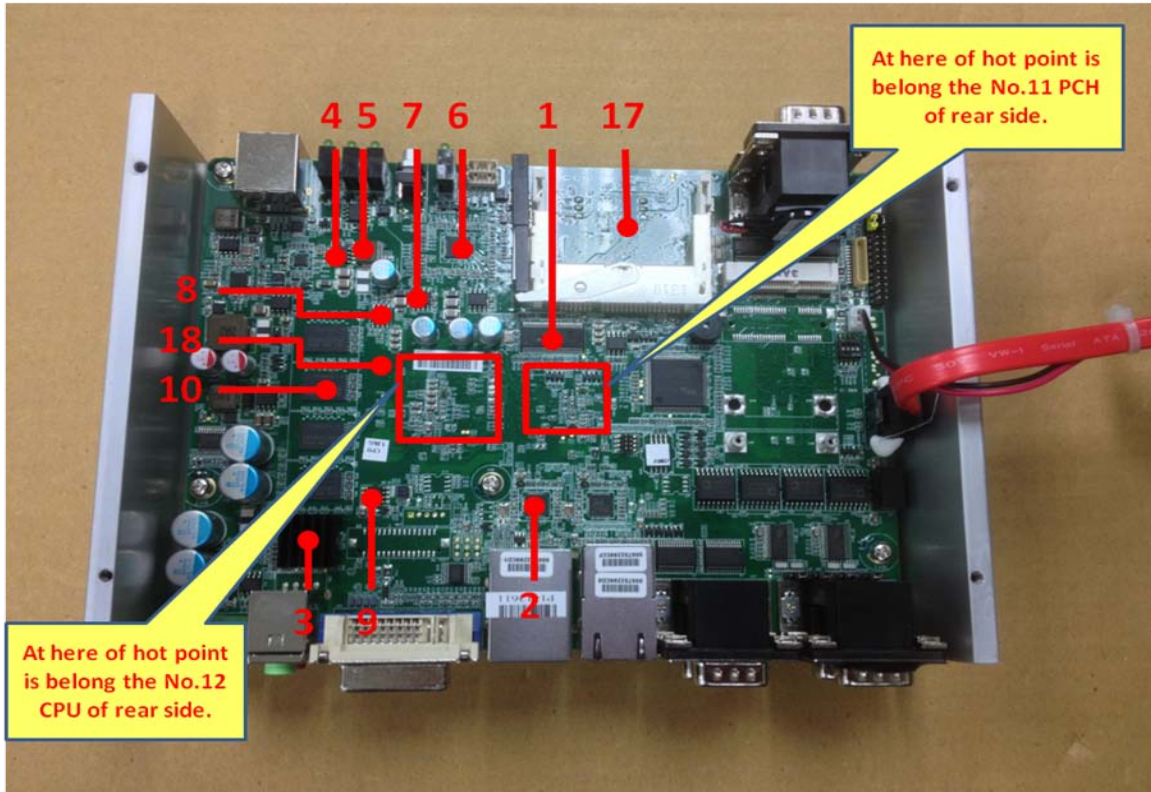
Windows 7 / Run PassMark Burn In Test 7.1 Pro

**Terminal Recorder:**

## IR Thermal



# Temperature rise test





# Temperature rise test

## Thermal profile data:

Point	Temp. Stage(°C)	Spec	50	Note
01. U38 - (TF)IC.TSSOP 64P.CLOCK GENERATOR.IDT.9LPRS501PGLF		115	84.3	
02. U12 - (TF)IC.QFN Gigabit Ethernet Chip.REALTEK.RTL8111E-VB-GR		85	75.3	
03. U8 - (TF)IC.HIGH DEFINITIOND.AUDIO CODEC.REALTEK.ALC662-GR		85	75.8	
04. Q35 - (TF)Dual N-Channel.16/36.5mΩ.SOIC-8.ON.NTMD5836NLR2G		125	87.3	
05. L9 - (TF)COIL.DCR=9mohm.Zenithtek.ZPWM-6030M-1R0M		125	88.6	
06. U51 - (TF)IC.WQFN-48L.Dual Single-Phase PWM.Richtek.RT8167AGQW		100	79.3	
07. Q34 - (TF)Dual N-Channel.16/36.5mΩ.SOIC-8.ON.NTMD5836NLR2G		125	81.7	
08. U41 - (TF)IC.Low dropout Linear Regulator.GMT.G9731F11U		100	86.7	
09. Q8 - (TF)PWR.SO-8.P-Channel.-12V.-11A.25mΩ.MOSFET.AOS.AO4437		125	72.8	
10. U29 - (TF)DDR3L-SDRAM.256Mx8.Samsung.K4B2G0846Q-BYK0		95	75.3	
11. U72 - (TF)IC.SMD.NM10 Express Chipset.INTEL.CG82NM10.SLGXX		115	74.6	
12. U71 - (TF)INTEL Atom CPU D2550 1.86GHz.		100	75.1	
13. L17 - (TF)COIL.28m ohm.Idc=6Amp.ZenithTek.ZPWM-6030M-3R3M		125	80.2	
14. U59 - (TF)IC.Digital Video Level Shifter.PERICOM.PI3VDP411LSZBE		85	73.8	
15. U74 - (TF)IC.DDR3L-SDRAM.256Mx8.Samsung.K4B2G0846Q-BYK0		95	71.1	
16. HDD - Toshiba 2.5" SATA HDD (MK1060GSC) / 100GB		85	71.2	
17. Control Box Inside Temperature-1		N/A	69.5	
18. Control Box Inside Temperature-2		N/A	72.6	
19. Control Box External Surface Temperature		N/A	70.5	
20. Chamber Air Temperature		N/A	50	
<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> : Tm > Tc; The measured value is over specification plus margin.				
- <b>Margin</b> : Tc > Tm > Tc-5°C; The measured value is within specification with margin. For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.				
- <b>Pass</b> : Tm < Tc-5°C; The measured value is with safety margin.				
<b>4. Defect NO.</b>				

## Sample Configuration & Quantity Under Test:

Quantity: 1 (CES-CV101)

## Test Result:

No issues were found during the temperature rise operation test.

# Temperature cycle test

**Test Date:** 03-14~ 17-2014

**Test Product:** CES-CV101

**Test Site:** AAEON QE Dept.

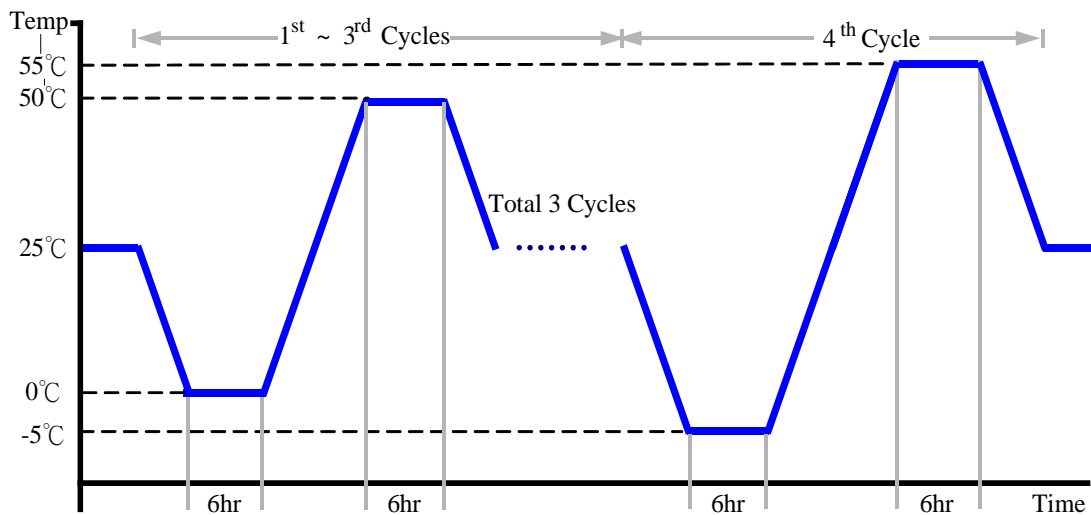
**Test Standard:** Refer to IEC68-2-14 Testing procedures  
Test N: Change of temperature Test

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)  
Model: THS-B6T-150+LN2  
Date of Calibration: 2013/06/11  
Serial Number: 9095KT

**Test Condition:**

1. Test Low Temperature: 0°C (1~3 cycles)  
-5°C (4<sup>th</sup> cycle)
2. Test High Temperature: 50°C (1~3 cycles)  
55°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 (CES-CV101)

**Test Result:**

No issues were found during the temperature operation cycle test.



# High temperature storage test

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**Test Date:** 03-12 ~ 14-2014

**Test Product:** CES-CV101

**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.)

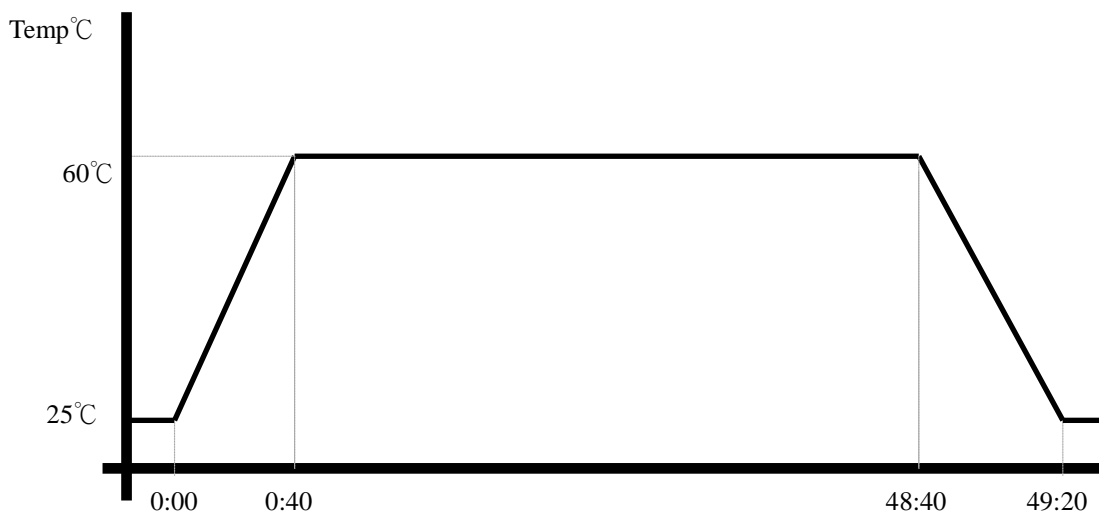
Model: THS-B6T-150+LN2

Date of Calibration: 2013/06/11

Serial Number: 9095KT

**Testing Item:**

1. Test Temperature: 60°C
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (CES-CV101)

**Test Result:**

No issues were found after the high temperature storage test.

# Low temperature storage test

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**Test Date:** 03-10 ~ 12-2014

**Test Product:** CES-CV101

**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: 2013/06/11

Serial Number: 9095KT

**Testing Item:**

1. Test Temperature: -20°C
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (CES-CV101)

**Test Result:**

No issues were found after the low temperature storage test.

# Humidity test

**Test Date:** 03-07 ~ 10-2014

**Test Product:** CES-CV101

**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.)

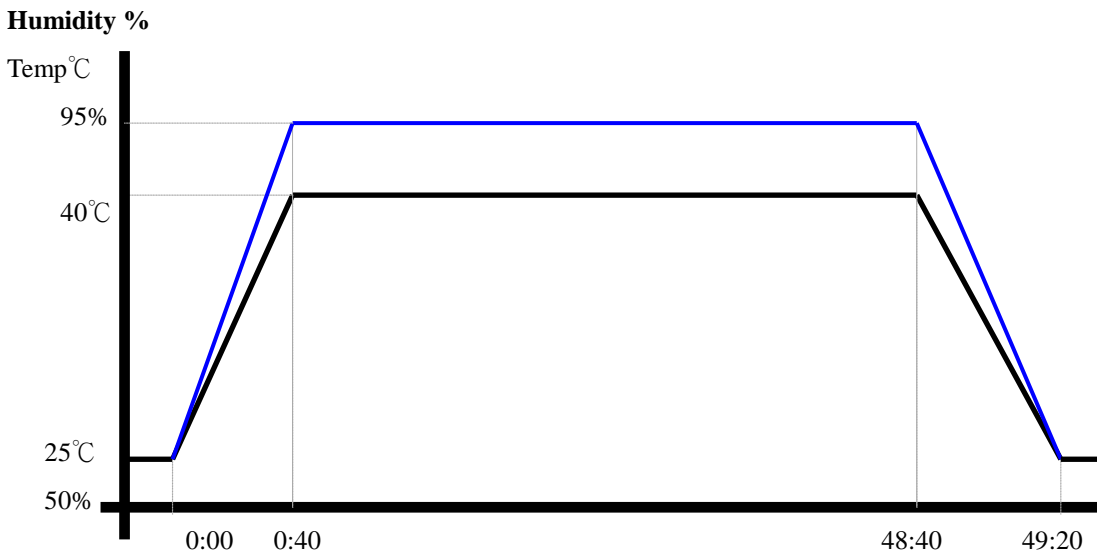
Model: THS-B6T-150+LN2

Date of Calibration: 2013/06/11

Serial Number: 9095KT

**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 7.1 Pro
5. Test Environment Curve:



**Sample Configuration & Quantity Under Test:**

Quantity: 1 (CES-CV101)

**Test Result:**

No issues were found after the humidity storage test.

# Cold start and hot start test

**Test Date:** 03-17 ~18-2014

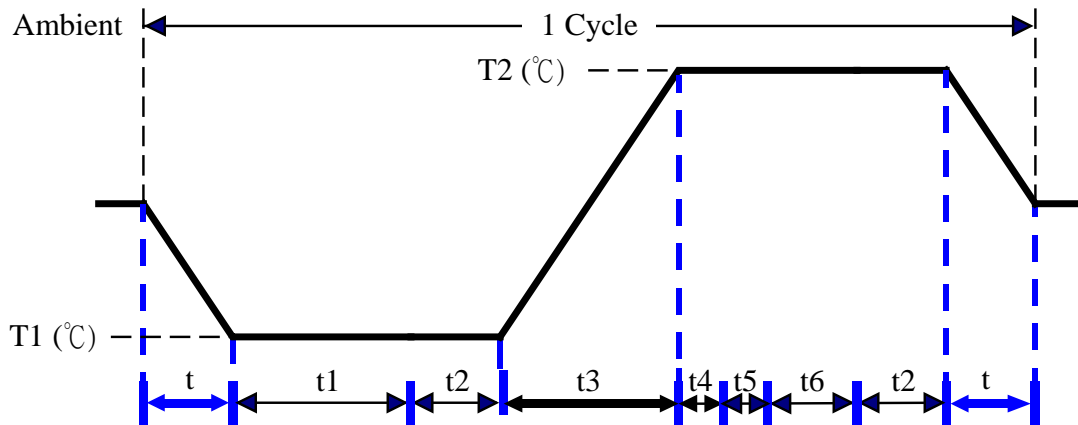
**Test Product:** CES-CV101

**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: 2013/06/11  
Serial Number: 9095KT

**Test Condition:**



Parameters	Description
T1	-5°C
T2	55°C
t1	4 hrs
t2, t6	2 hrs
t4, t5	1 hrs
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 Pro  
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.