# OMNI-3105HTT-BT

## Environment Test Report

**Report NO: 16P020009**

| | |
|---|---|
| Summary | ☐ **Pass**<br><br>☐ **Fail**<br>Note : There is/are ___ defect(s) not list in the report, please check it in the DTS Website.<br><br>☑ **Pass with Deviation**<br>**Comment: <u>There are 4 temperature point marginal passed, the function is normal, hope to get improvement for the next generation.</u>** |

| Issue date | QE Manager | Test Engineer |
|---|---|---|
| **2016-06-04** | **KJ Wang** | **Jerry Chen** |

# Test item list



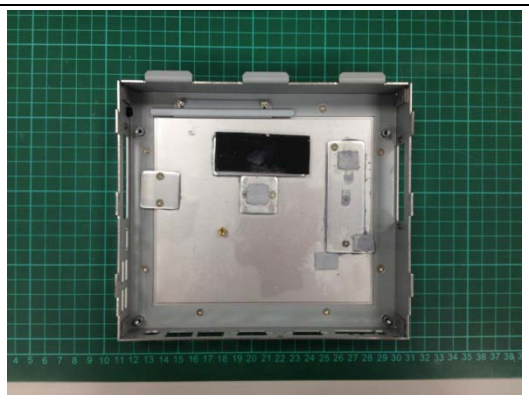
## Testing Result

| 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 |
|---|---|---|
| **OMNI-2215-BT** | | |
| 1 | 10.4’’ TFT LCD | AUO.G104SN03 V5 800*600 1CH LVDS |
| 2 | CPU Board | PBA-BT03 Ver. B0.1 |
| 3 | CPU | Intel® Celeron® Processor J1900 / 2.0GHz |
| 4 | BIOS | OMNI SERIES R0.2 (OMBTAM02)(03/03/2016) |
| 5 | Wide Temp. Memory | MEMPHIS 8GB / DDR3L 1600 / IM IM4G08D3F ABG-125ITW |
| 6 | Wide Temp. 2.5’’ SATA HDD | TOSHIBA MQ01AAD010C / 100GB |
| 7 | Wide Temp. CFast | Innodisk 3ME Series 16GB / DECFA-16GD07SW2DC-26 |
| 8 | Test Software | Windows 8 / Run PassMark Burn In Test 8.1 Pro From HDD |
| 9 | Adapter | FSP FSP120-ABAN2 |

## Photos

| Heat Sink | HDD Kit |
|---|---|
|  |  |

# High Temperature Operation test

**Test Date:** 06-03-2016

**Test Product**: OMNI-3105HTT-BT

**Test Site:** AAEON QE Dept.

**Test Standard:** Refer to IEC 68-2-2 Testing procedures

Test Bd: Dry Heat Test (Operation)

**Test Equipment:**

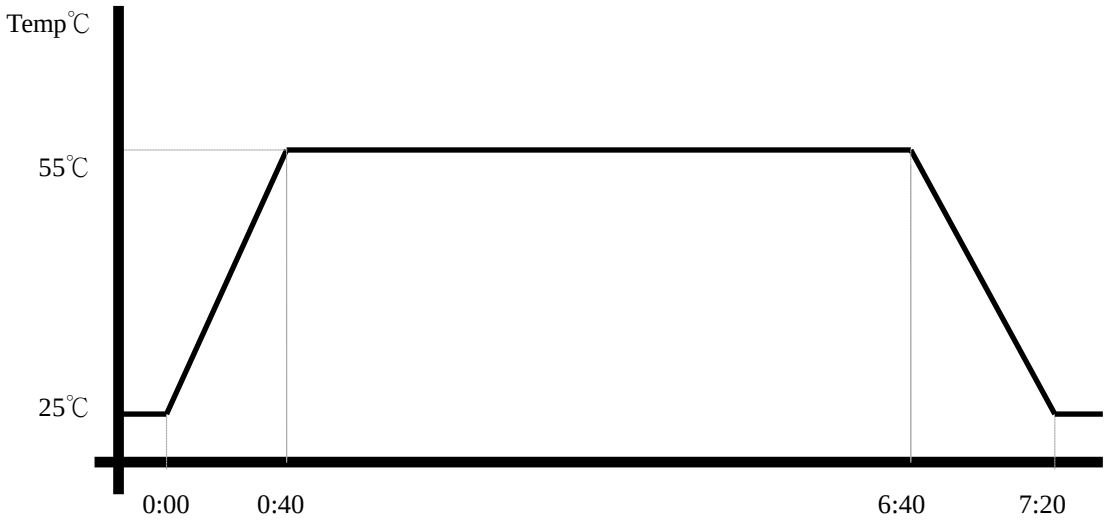
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Temperature Measurement:**

**20 Channel Thermal Recorder: (OMRON Inc,)**
Model: ZR-RX45
Date of Calibration: 12/18/2015
Due date of Calibration: 12/17/2016
Serial Number: H30481978

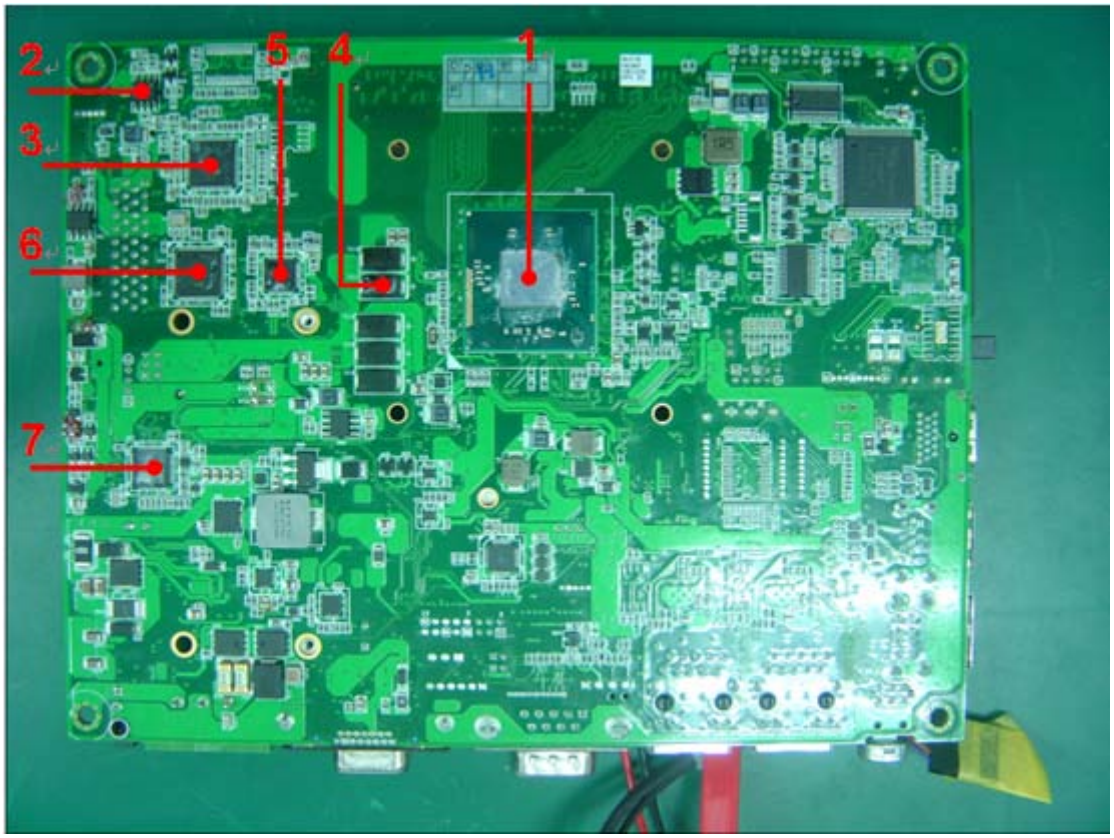
**Testing Item:**

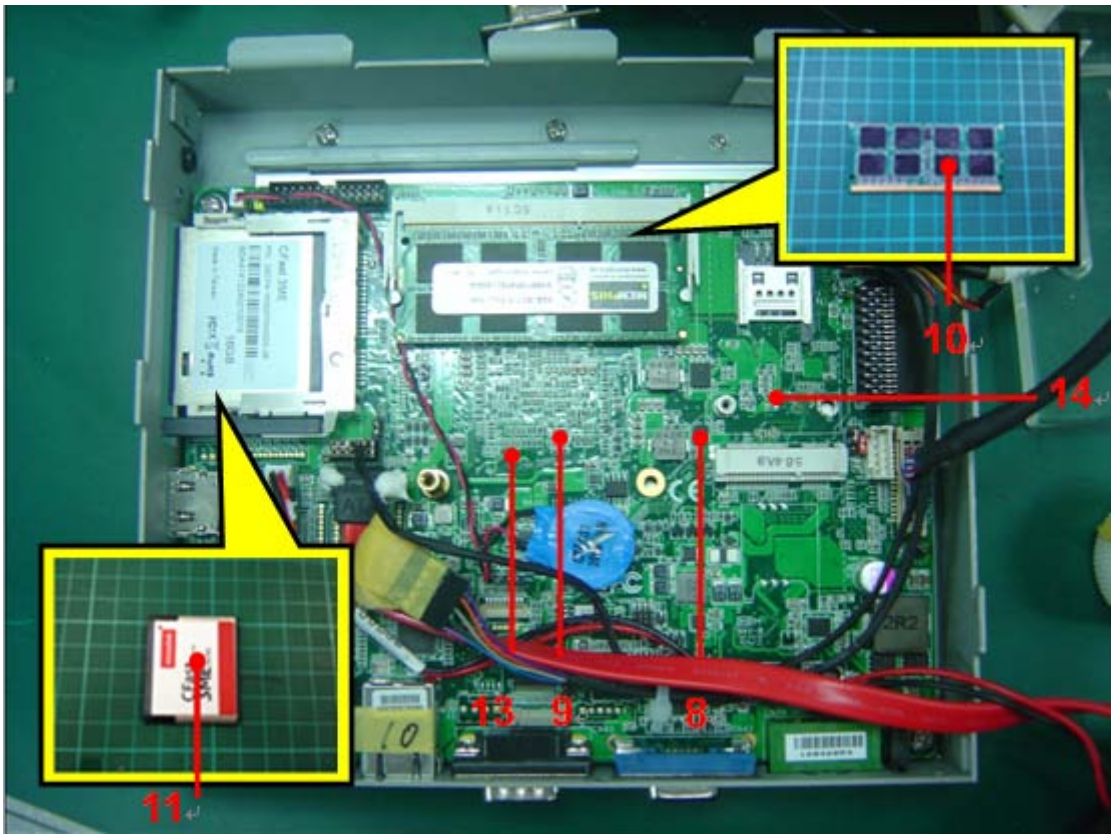
1. Test Temperature: 55℃
2. Test Times: 6Hrs
3. Test Software: Windows 8 / Run PassMark Burn In Test 8.1 Pro
4. Test Environment Curve:



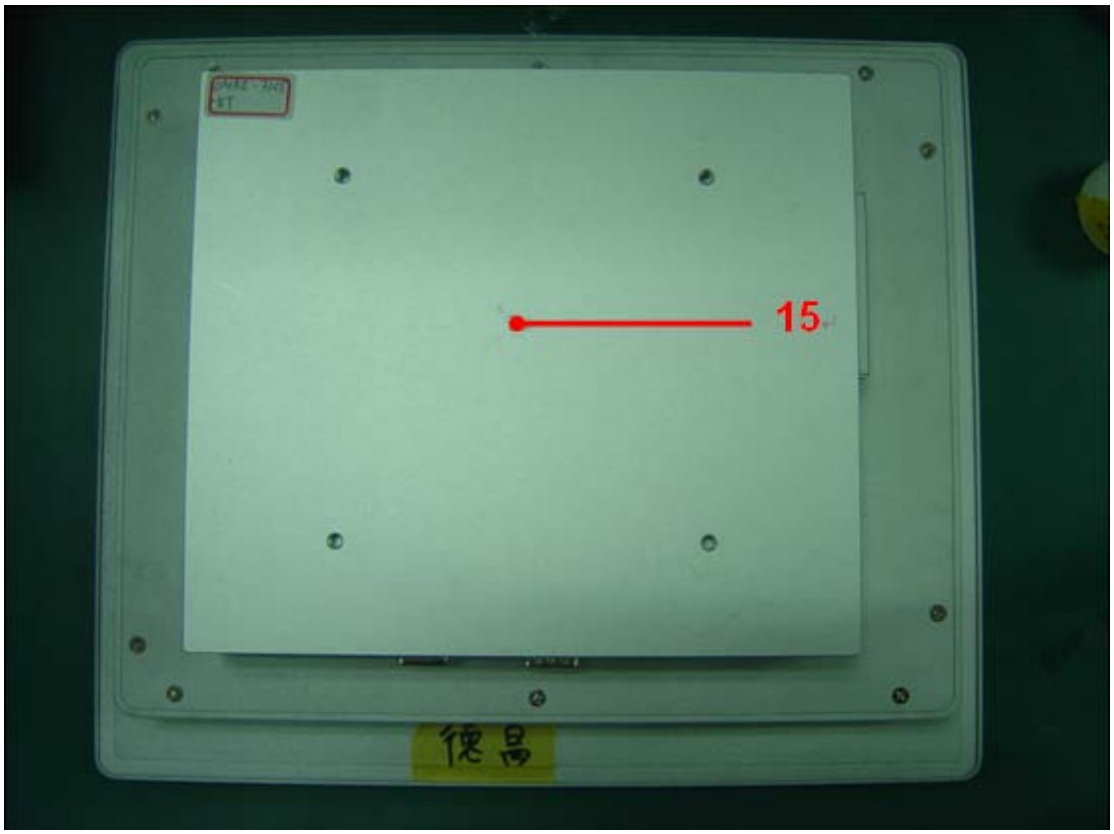
# High Temperature Operation test

**Measuring Thermal Couple Position：**



# High Temperature Operation test

# High Temperature Operation test

**Thermal profile data:**

**OMNI-3105HTT-BT (With 0.5m/sec airflow)**

| Point / Position / Describe / Temp. Stage(℃) | Spec Tc(*1) | TAT(*2) 55 | TPT(*3) 25 | Note |
|---|---|---|---|---|
| **PBA-BT03 Ver. B0.1** | | | | |
| 01.U56 - CPU – Intel Celeron J1900 2GHz | 105 | 80.0 | 50.0 | |
| 02.U39 - IC.LDO Linear Regulator.0.23V.2A.SOP-8.RICHTEK.RT9025-25PSP | 125 | 94.3 | 64.3 | |
| 03.U43 - IC.PCIe-2.0 4port Switch.QFN-64P.ASMEDIA.ASM1184e | 95 | 81.9 | 51.9 | |
| 04.TC11 - SP CAP.330uF.2.5V.+10/-35%.9mohm.3000mA.Panasonic.EEFSX0E331EY | 105 | 84.4 | 54.4 | |
| 05.U55 - IC.Dual-Channel.SVID.D-CAP+.IMVP-7 VCORE.QFN.TI.TPS59641RSLTR | 100 | 84.9 | 54.9 | |
| 06.U54 - IC.USB2.0 7-PORT HUB CONTROLLER.QFN 64.SMSC.USB2517i-JZX | 100 | 90.5 | 60.5 | |
| 07.U67 - IC.Display Port to LVDS Converter.QFN 56 Pin.NXP.PTN3460BS | 80 | **77.0** | 47.0 | **Note 5** |
| 08.U10 - IC.Synchronous Buck NexFETTM.SON 8P.Power Stage.TI.CSD97374Q4M | 125 | 88.7 | 58.7 | |
| 09.Y1 - X'TAL.25MHz.4P.20PF.30ppm.ECERA.FL2500039 | 85 | **81.4** | 51.4 | **Note 5** |
| 10. RAM / MEMPHIS / ISODIM D3L-1600 8GB (IM / IM4G08D3F / ABG-125ITW ) | 95 | 82.3 | 52.3 | |
| 11. CFast / innodisk 3ME Series 16GB Industrial / DECFA-16GD07SW2DC-26 | 85 | **83.5** | 53.5 | **Note 5** |
| 12.HDD / Toshiba MQ01AAD010C 100GB | 85 | **82.6** | 52.6 | **Note 5** |
| 13. Control Box Inside Air Temperature-1 | N/A | 77.8 | 47.8 | |
| 14. Control Box Inside Air Temperature-2 | N/A | 82.7 | 52.7 | |
| 15.BATTERY.Li.3V.210mAh.MAXELL.Battery Power.BP-CR2032-M150-002 | 85 | 77.5 | 47.5 | |
| 16. Control Box External Surface Temperature | N/A | 73.0 | 43.0 | |

**Note(*):**
**1. "Tc"** indicates the component's case maximum temperature value specified in its datasheet.
**2. "TAT"** indicates the actual measured temperature in chamber.
**3. "TPT"** indicates the predicted temperature by offset from TAT.
**4. Judgment Criteria:**
- **Fail** : Tm > Tc; The measured value is over specification plus margin.
- **Margin** : Tc > Tm > Tc-5℃; The measured value is within specification with margin.
  It is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-5℃; The measured value is with safety margin.

**5. Defect NO.** P160507D01

**Sample Configuration & Quantity Under Test:**

Quantity: 1 (OMNI-3105HTT-BT)

**Test Result:**

No issues were found during the temperature rise operation test.

# Temperature cycle test

**Test Date:** 06-01 ~03-2016

**Test Product:** OMNI-3105HTT-BT

**Test Site:** AAEON QE Dept.

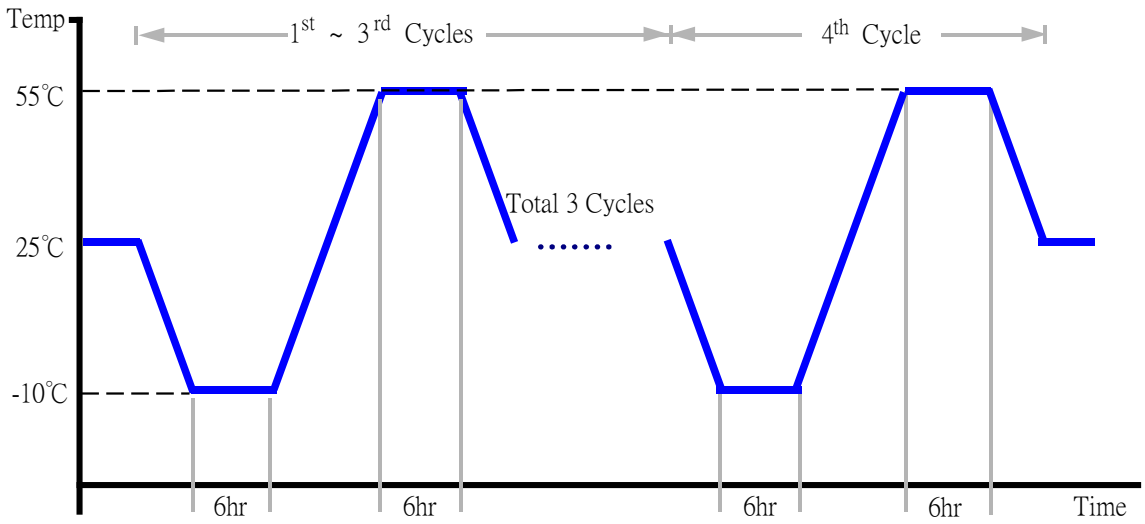
**Test Standard:** Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Test Condition:**

1. Test Low Temperature: -10℃
2. Test High Temperature: 55℃
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 4 cycles
6. Test Software: Windows 8 / Run PassMark Burn In Test 8.1 Pro
7. Test Environment Curve:




**Sample Configuration & Quantity Under Test:**
Quantity: 1 (OMNI-3105HTT-BT)

**Test Result:**

No issues were found during the temperature operation cycle test.

# High temperature storage test

**Test Date:** 05-30 ~ 06-01-2016

**Test Product:** OMNI-3105HTT-BT

**Test Site:** AAEON QE Dept.

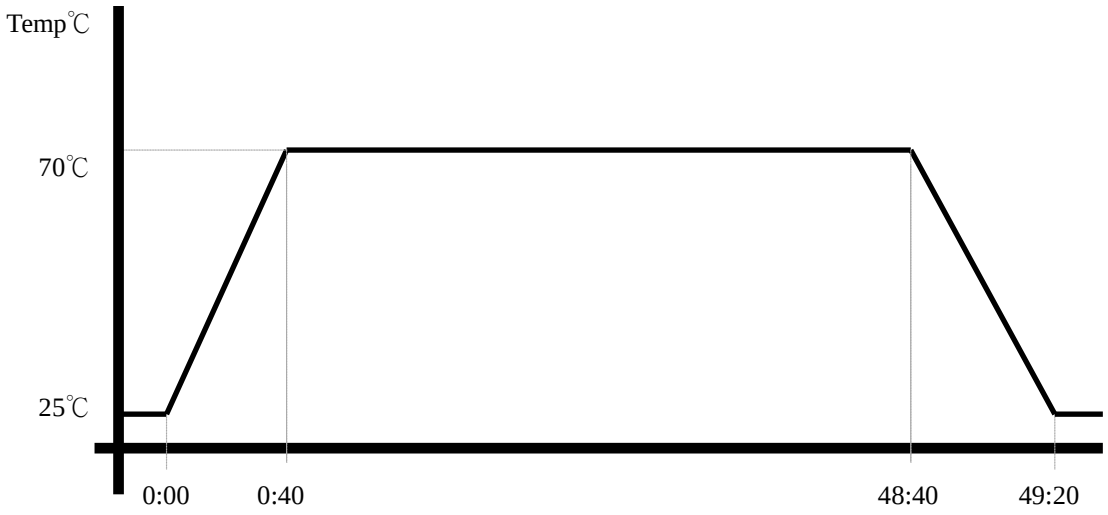
**Test Standard:** Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Testing Item:**

1. Test Temperature: 70℃
2. Test Times: 48Hrs
3. Test Environment Curve:




**Sample Configuration & Quantity Under Test:**
Quantity: 1 (OMNI-3105HTT-BT)

**Test Result:**

No issue was found after the high temperature storage test.

# Low temperature storage test

**Test Date:** 05-28 ~30-2016

**Test Product:** OMNI-3105HTT-BT

**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-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Testing Item:**

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Environment Curve:


**Sample Configuration & Quantity Under Test:**
Quantity: 1 (OMNI-3105HTT-BT)

**Test Result:**
No issue was found after the low temperature storage test.

# Humidity test

**Test Date:** 05-26 ~ 28-2016

**Test Product:** OMNI-3105HTT-BT

**Test Site:** AAEON QE Dept.

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

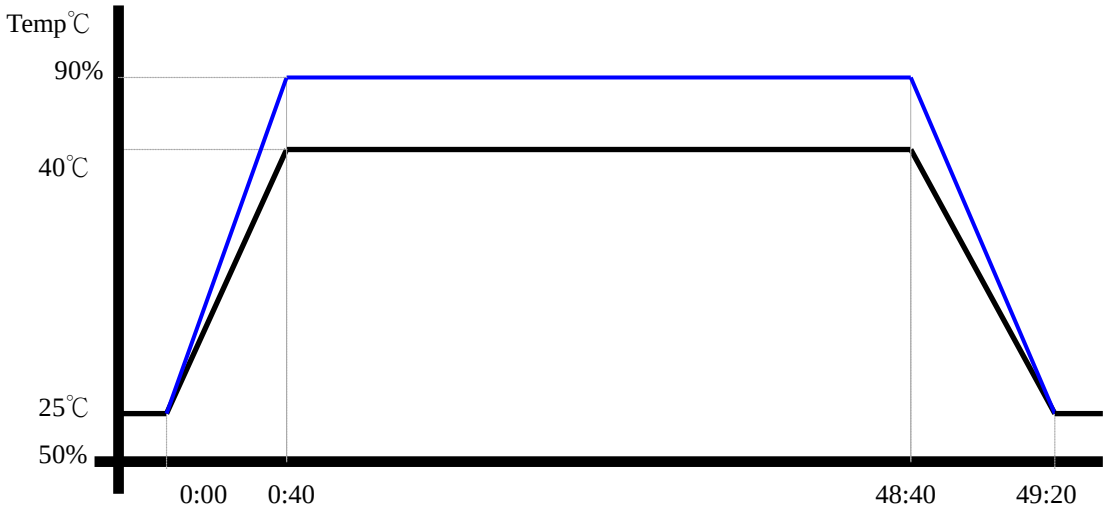
**Test Equipment:**

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Testing Item:**

1. Test Temperature: 40℃
2. Test Humidity: 90%RH
3. Test Times: 48Hrs
4. Test Environment Curve:

**Humidity %**




**Sample Configuration & Quantity Under Test:**

Quantity: 1 (OMNI-3105HTT-BT)

**Test Result:**

No issue was found after the humidity storage test.

# Cold start and hot start test

**Test Date:** 05-25~ 26-2016

**Test Product:** OMNI-3105HTT-BT

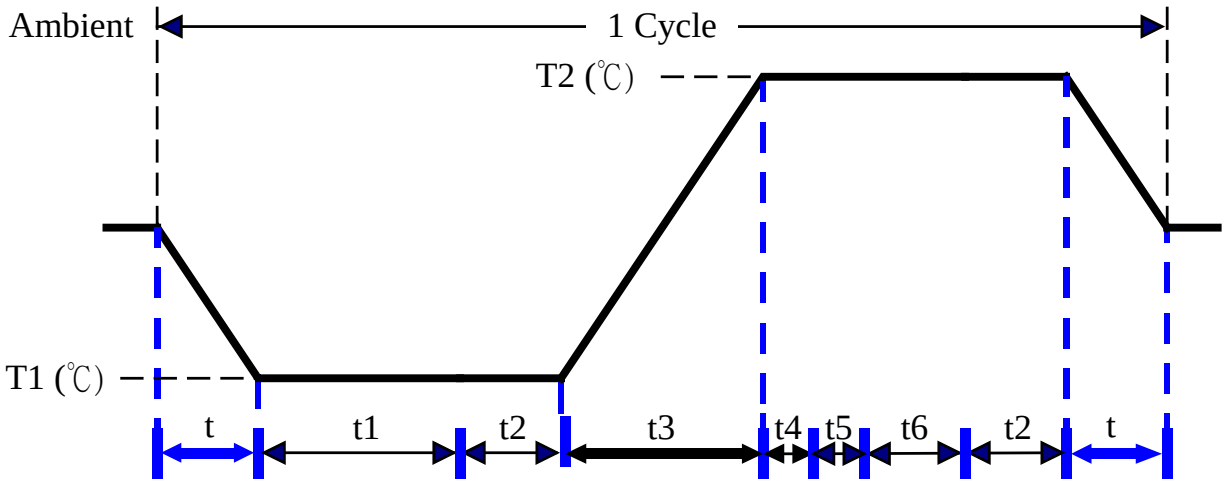
**Test Site:** AAEON QE Dept.

**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-D7TS-100+LN2
Date of Calibration: 09/10/15
Due date of Calibration: 09/09/16
Serial Number: A0004

**Test Condition:**




| Parameters | Description |
|---|---|
| T1 | -10℃ |
| 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 8 Software restart test 2 times
Test Software:Windows 8

**Test Result:**

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

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