# NITX-BD1

## Thermal Image Analysis Report

| | |
|---|---|
| Summary | ☐ **Pass**<br>☐ **Fail**<br>☑ **Pass with Deviation**<br>**Comment:** **There is one temperature point marginal passed, hope to get improvement for the next generation.** |

| Test Result Summary | | | | |
|---|---|---|---|---|
| | Critical | Major | Minor | Enhancement |
| Defect Found | 0 | 0 | 0 | 1 |
| Defect Unsolved | 0 | 0 | 0 | 1 |

| Issue date | Approval | Test Engineer |
|---|---|---|
| 2016 / 02 / 05 | KJ Wang | Jerry Chen |



AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

## Sample Configuration & Quantity Under Test

- **Model name : NITX-BD1 Ver. R1.02**
- **CPU Board : NITX-BD1 Ver. R1.02**
- **CPU : Intel Core i7-5650U 2.2GHz**
- **BIOS : R1.2 (TBD1AM12) (01/12/2016)**
- **Memory**：Kingston / DDR3L 1600 8GB *2 (Kingston / N03468-01 1428 S2R0 / D5128ED1FPGGBU)
- **mSATA: Transcend 32G M.2 SSD (TS32GMTS600)**
- **Test Software : Windows 8 / Run PassMark Burn In Test 8.1 Pro**
- **Adapter: FSP / FSP060-DIBAN2 / 12V 5A MAX**
- **CPU Cooler :**





AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

# Thermal Image Analysis

**1. Test Date: 2016-02-04**

**2. Test Product: NITX-BD1**

**3. Test Site: AAEON QE Dept.**

**4. Temperature Measurement:**

**4.1. 40 Channel Thermal Recorder:**

**4.1.1 YOKOGAWA Inc,**

**4.2.2 Model: DA100-13-1D**

**Date of Calibration: 2015/09/10**

**Serial Number: 12A323190**

**5. Test Condition:**

**Test by DA-100: 25.0℃ with Cooler**

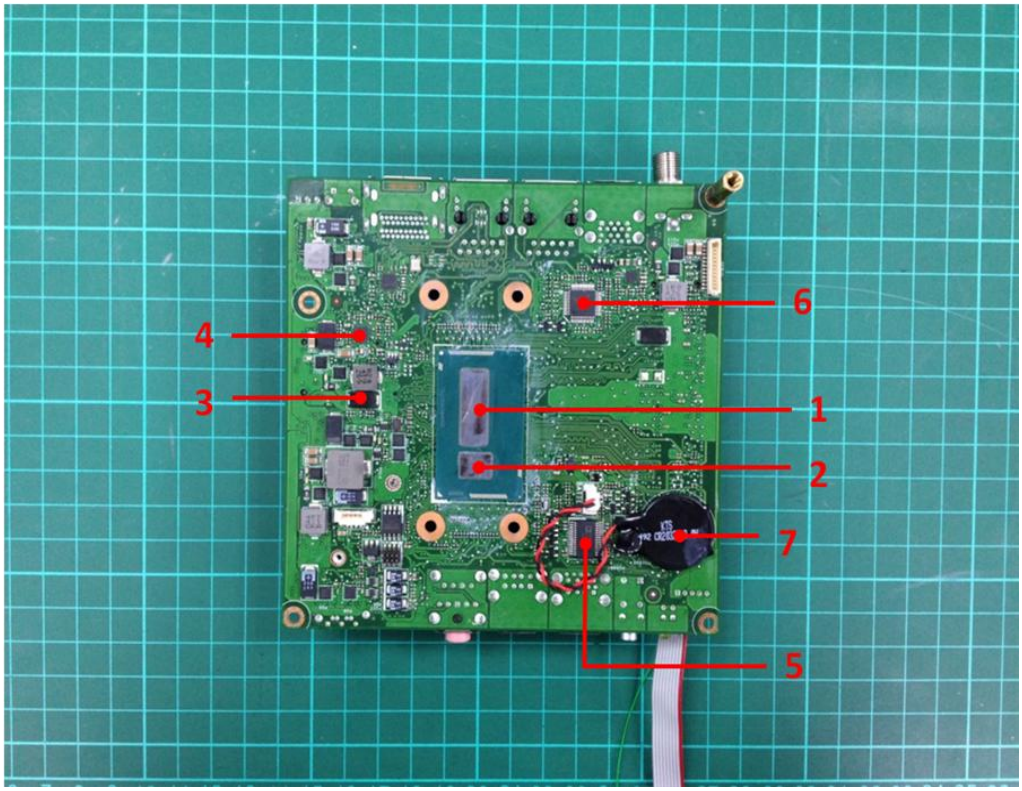
**6. Take Picture Time:**

**After power on 2 hours**

## Temperature Profile Test:

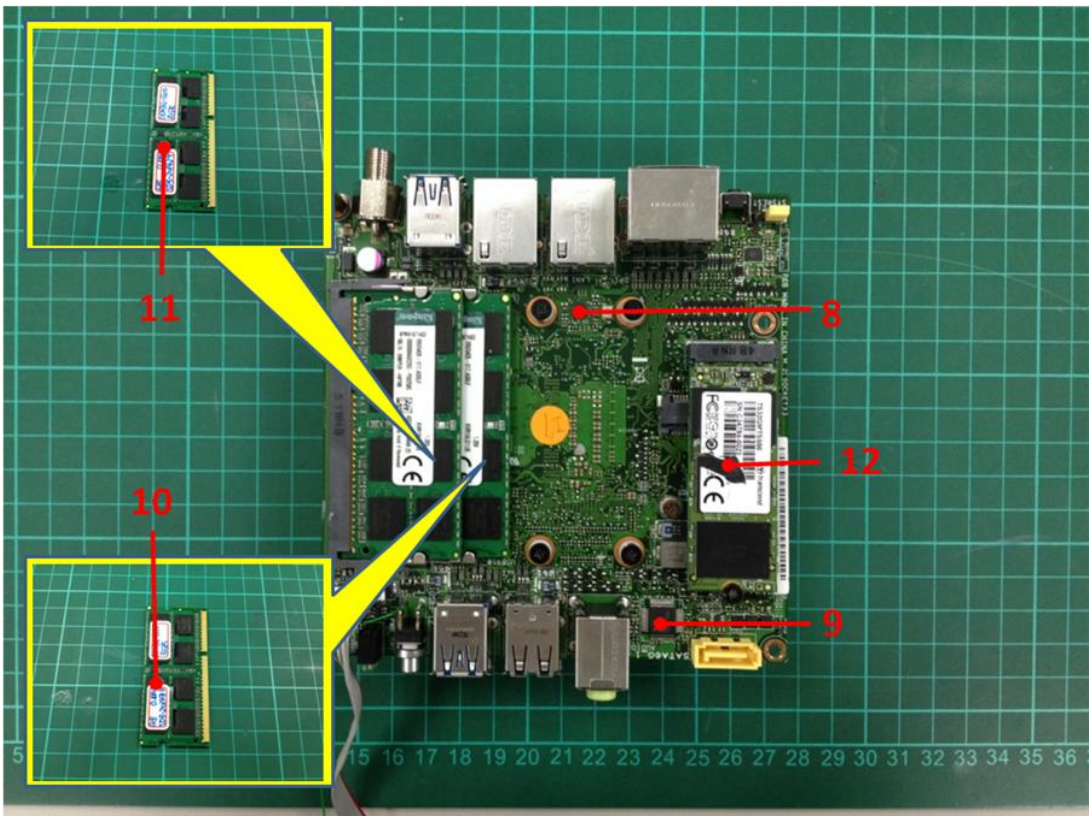
**Terminal Recorder:**

Measuring Thermal Couple Position：






AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053






AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

## Using YOKOGAWA / DARWIN DA100-100-13-1D test

| Point | Position | Describe | Tc (*1) (℃) | TAT(*2) | TPT(*3) | Note |
|---|---|---|---|---|---|---|
| | | | | 25℃ | 50℃ | |
| 1 | U0301 | CPU Intel Core I7-5650U 2.2GHz - 1 | 105 | 50.3 | 75.3 | |
| 2 | U0301 | CPU Intel Core I7-5650U 2.2GHz - 2 | 105 | 44.3 | 69.3 | |
| 3 | PCE8 | PL TAN 470UF/2.5V // NEC-TOKIN/TEPSGV0E477M9-12R | 105 | 38.1 | 63.1 | |
| 4 | PU5 | PWM CONTROLLER NCP81101AMNTXG // ONSEMI QFN28 | 100 | 39.9 | 64.9 | |
| 5 | BU4 | INTERFACE ADM213EARSZ SSOP-28 // A.D. | 85 | 36.2 | 61.2 | |
| 6 | U20 | SUPER IO NCT5538D-A LQFP-64 // NUVOTON | 70 | 31.9 | 56.9 | |
| 7 | BATTERY | BATT-LI CR2032 3V/220mAH // KTS/BCR2032H7.2AM1UB | 70 | 28.7 | 53.7 | |
| 8 | U13 | C.S RTL8111G-CG QFN-32 // REALTEK | 100 | 44.4 | 69.4 | |
| 9 | AU1 | C.S ALC887-VD2-CG LQFP-48 // REALTEK | 100.5 | 39 | 64 | |
| 10 | Memory - 1 | Kingston / DDR3L 1600 8GB (Kingston / N03468-01 1428 S2R0) | 85 | 46.9 | 71.9 | |
| 11 | Memory - 2 | Kingston / DDR3L 1600 8GB (Kingston / N03468-01 1428 S2R0) | 85 | 45 | 70 | |
| 12 | mSATA | Transcend 32G M.2 SSD (TS32GMTS600) | 70 | 38.7 | 63.7 | **Note 6** |
| 13 | N/A | Air Temperature | N/A | 25 | 50 | |

**Note(*):**

**1. "Tc"** indicates the component's case maximum temperature value specified in its datasheet.

**2. "TAT"** indicates the actual measured temperature under 25℃ working environmental.

**3. "TPT"** indicates the predicted temperature under product specification.

**4. Judgment Criteria:**

- **Fail** : Tm > Tc+5℃; The measured value is over specification plus margin.
- **Margin** : Tc+5℃ > Tm > Tc-10℃; The measured value is within specification with margin.
  For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

**5. RTC battery avoid to put on heat position.** Please do not exceed battery temperature specification.

**6. Defect NO. : W150101QED04**



AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053