# PICO-BT01

## Thermal Image Analysis Report

| | |
|---|---|
| Summary | ☐ **Pass**<br>☐ **Fail**<br>☑ **Pass with Deviation**<br>**Comment:**<br>1. There are 2 temperature points (No.3, 11) marginal passed.<br>2. There is 1 temperature point (No.4) Ta spec 85℃ but lack the Tc or Tj specifications, so we are unable to determine. |

Test Result Summary

| | Critical | Major | Minor | Enhancement |
|---|---|---|---|---|
| Defect Found | 0 | 0 | 0 | 3 |
| Defect Unsolved | 0 | 0 | 0 | 3 |

| Issue date | QE Manager | Test Engineer |
|---|---|---|
| 2017 / 12 / 25 | KJ Wang | Jerry Chen |



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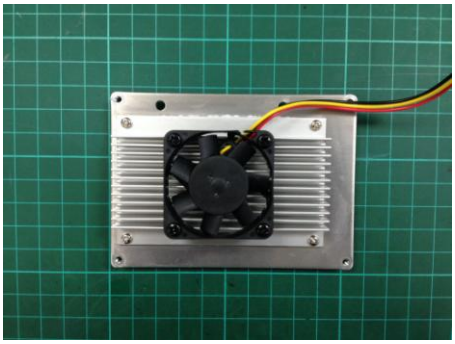
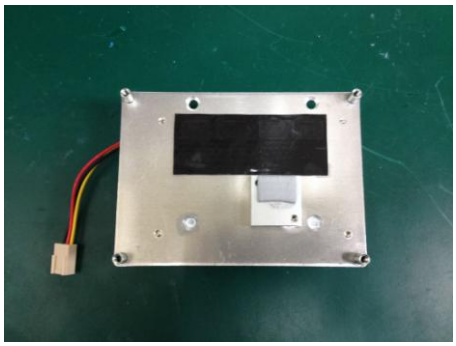
## Sample Configuration & Quantity Under Test

- **Model name : PICO-BT01**
- **M/B Name : PICO-BT01 / Rev. A1.1_0_1**
- **CPU : Intel Celeron CPU J1900 @ 2.00GHz**
- **BIOS : PICO-BT01 R1.2 (ZBT1AM12) (10/26/2015)**
- **Chipset: Intel Bay Trail**
- **Memory: Innodisk 8GB DDR3L 1866 / M3S0-8GSSDLQE-26 / SEC K4B4G0846E**
- **3.5” SATA HDD: Western Digital / WD1600AAJS 160GB**
- **Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **AT Power Supply: Zippy EMACS HG2-6400P; 400W (MAX)**
- **CPU Cooler:**







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# Thermal Image Analysis

**1. Test Date: 2017-12-22**

**2. Test Product: PICO-BT01**

**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: 09/08/2017**
**Due date of Calibration: 09/07/2018**
**Serial Number: 12A323190**

**4.2. IR Scanner: Infrared Camera**

**4.2.1 NEC Avio Infrared Technologies Co., Ltd.**

**4.2.2 Model: Thermo GEAR G100W2-D**

**Date of Calibration: 11/23/2017**
**Due date of Calibration: 11/22/2018**
**Serial Number: 1051444**

**5. Test Condition:**

**Test by DA-100: 25.0℃ with Cooler**

**6. Take Picture Time:**

**After power on 2 hours**



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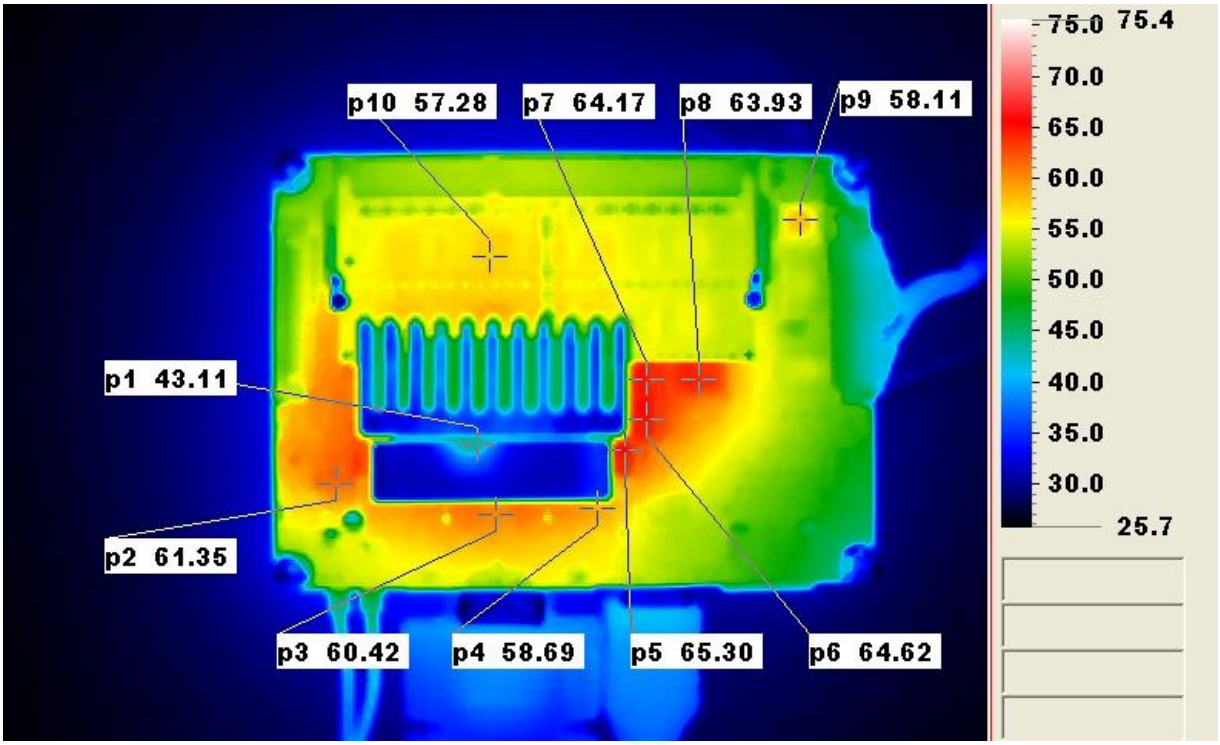
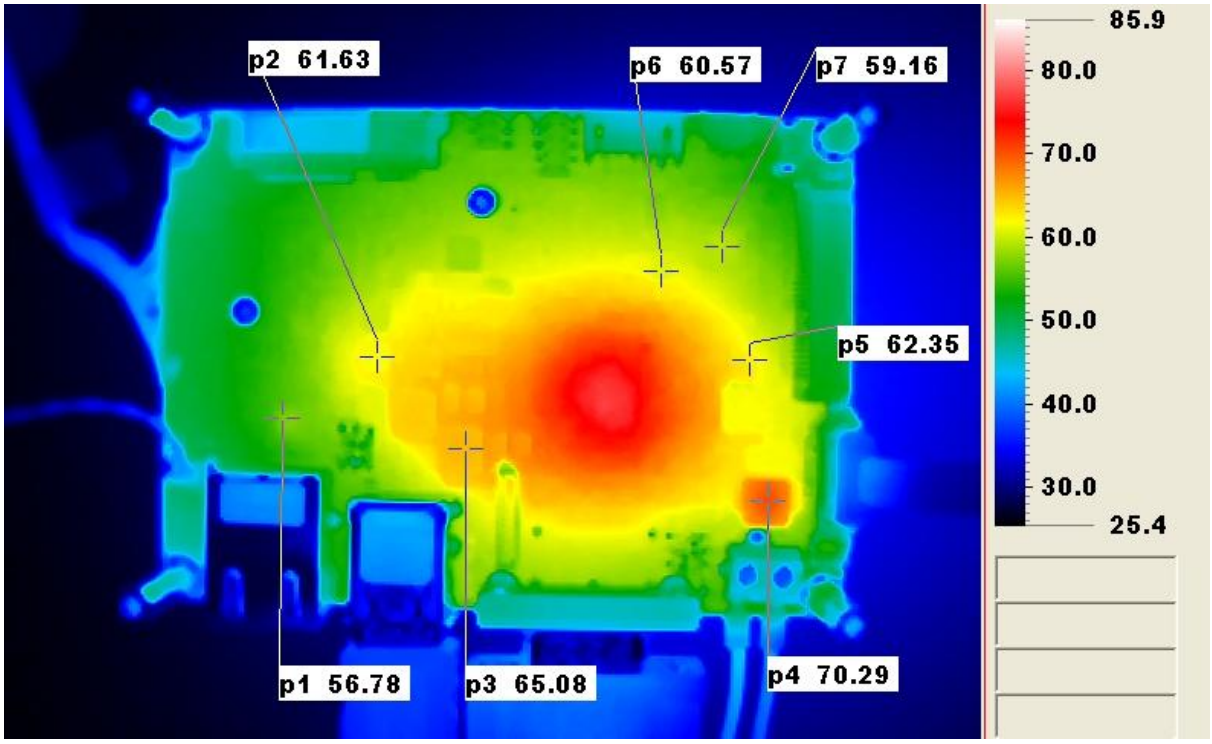
# Temperature Profile Test:

## Front Side:




## Rear Side:



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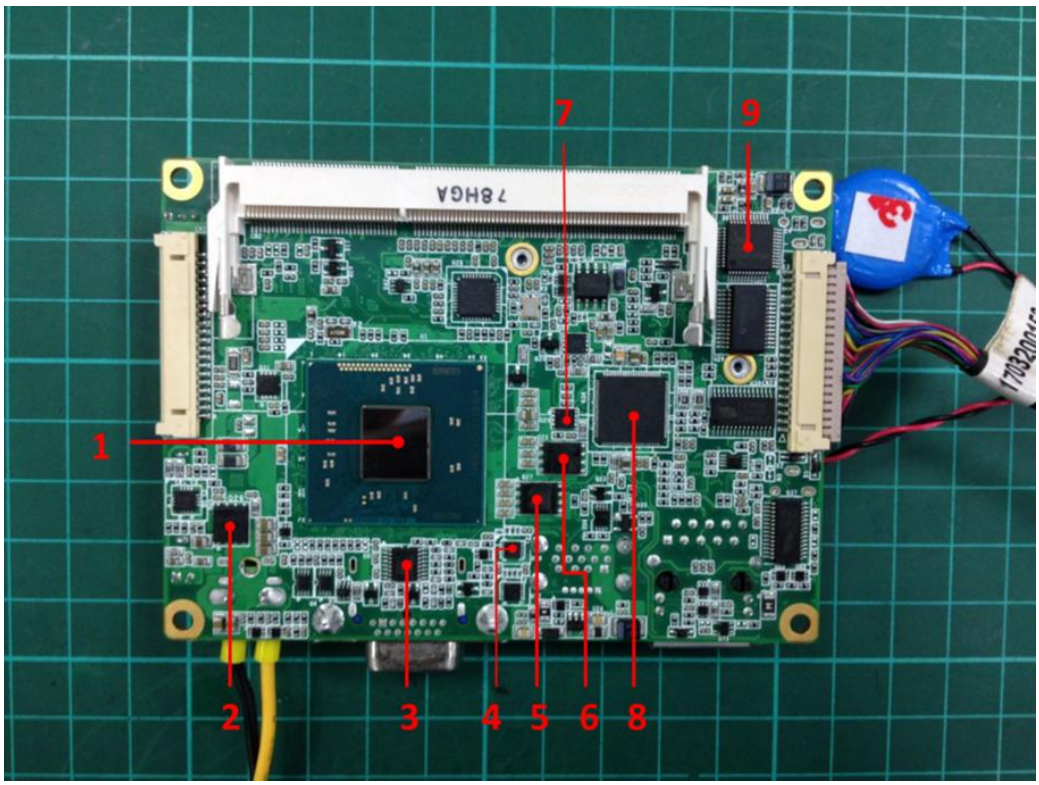
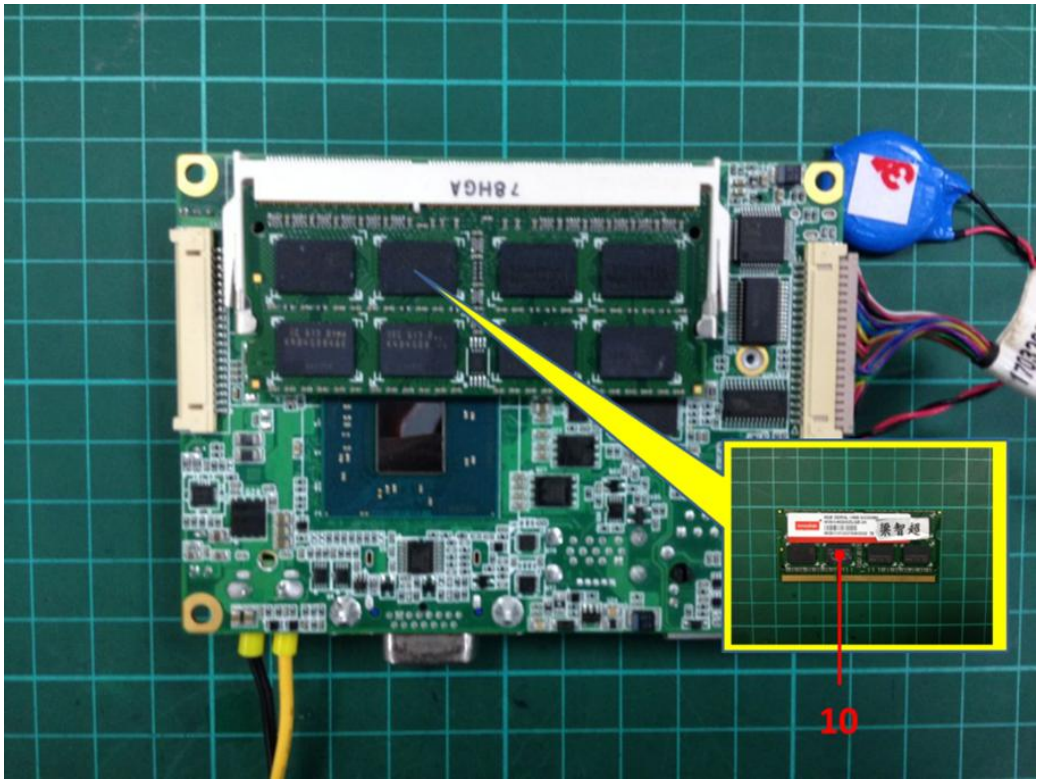
# Terminal Recorder:

Measuring Thermal Couple Position：

## Front Side:



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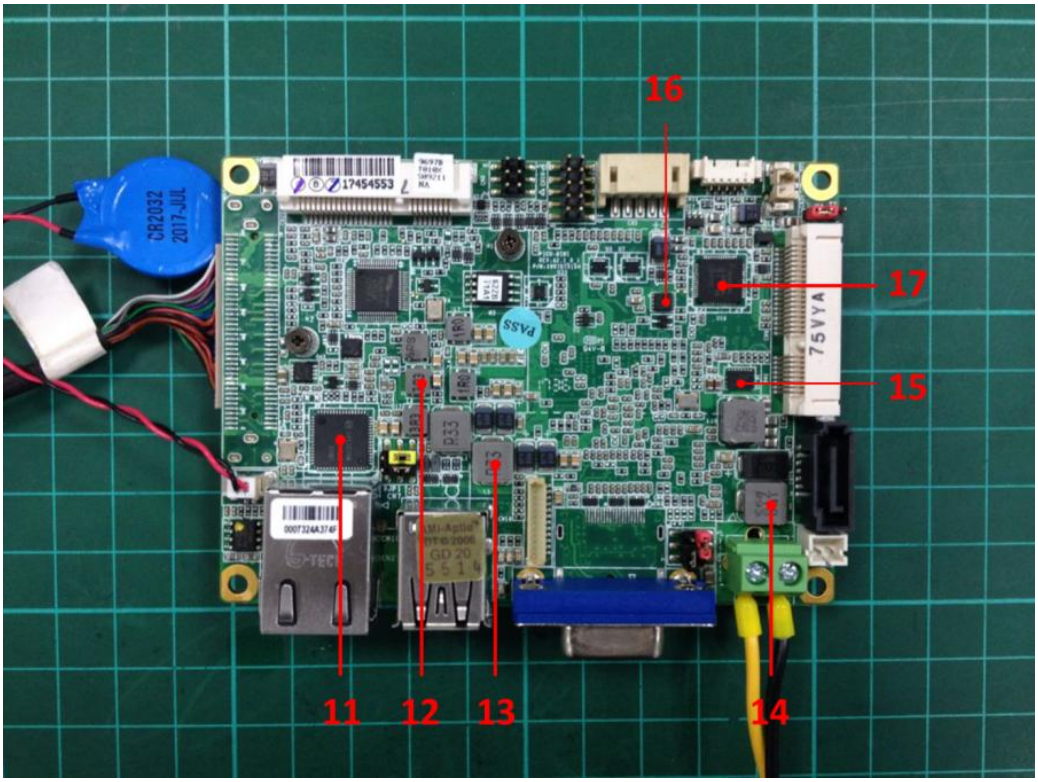
## Rear Side:



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## Using YOKOGAWA Inc / DA100-13-1D test

| Point | Position | Describe | Tc (*1) (℃) | TAT(*2) | TPT(*3) | Note |
|---|---|---|---|---|---|---|
| | | | | 25℃ | 60℃ | |
| 1 | U1 | CPU - Intel Celeron J1900 / 2.00GHz | 105 | 41 | 76 | |
| 2 | Q29 | EMB09K03HP | 125 | 45.7 | 80.7 | |
| 3 | U8 | CM2009-02QR | 85 | 41.2 | **76.2** | **Note 4** |
| 4 | U76 | F75913V | **N/A** | 43.2 | **78.2** | **Note 6** |
| 5 | Q27 | FDMS3664S | 125 | 47.9 | 82.9 | |
| 6 | Q25 | FDMS3664S | 125 | 49.3 | 84.3 | |
| 7 | Q26 | FDMC7200S | 125 | 48.2 | 83.2 | |
| 8 | U38 | BD959MWV | 110 | 50.3 | 85.3 | |
| 9 | U43 | ALC892-CG | 100.5 | 49.1 | 84.1 | |
| 10 | SO-DIMM | Memory chipset / SEC K4B4G0846E | 95 | 38.8 | 73.8 | |
| 11 | U17 | WGI211AT | 85 | 46 | **81** | **Note 4** |
| 12 | L1 | ZPWM-4020M-3R3M | 125 | 47.6 | 82.6 | |
| 13 | L5 | ZPWM-6030M-R33M | 125 | 47.9 | 82.9 | |
| 14 | L8 | PCMB063T-1R0MS | 125 | 55.5 | 90.5 | |
| 15 | U41 | MP8762GLE-Z | 100 | 42.1 | 77.1 | |
| 16 | Q30 | EMB20N03V | 150 | 40.6 | 75.6 | |
| 17 | U14 | PTN3460 | 100 | 42 | 77 | |
| 18 | Air | Air temperature | N/A | 25 | 60 | |

**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. : BUL1712LABD01**



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