PER-T248

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: In the absence of Tc and Tj specification we are unable to determin.**

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date	Approval	Test Engineer
2015 / 03 / 31	KJ Wang	Juno Cheng

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Sample Configuration & Quantity Under Test

- **Model name : PER-T248**
- **CPU Board : AEC-6977**
- **CPU : Intel Core i7-3517 UE CPU @ 1.70 GHz**
- **Memory : Transcend 1GB / DDR3L 1333 / SEC K4B1G0846G**
- **2.5” SATA HDD : TOSHIBA MK1060GSC / 100GB**
- **BIOS : R1.1 (A977AM11) (12/10/2013)**
- **Test Software : Windows 7/ Run PER_T2488 + PassMark Burn In Test 7.1 Pro**
- **Power : FSP084-DMAA1**

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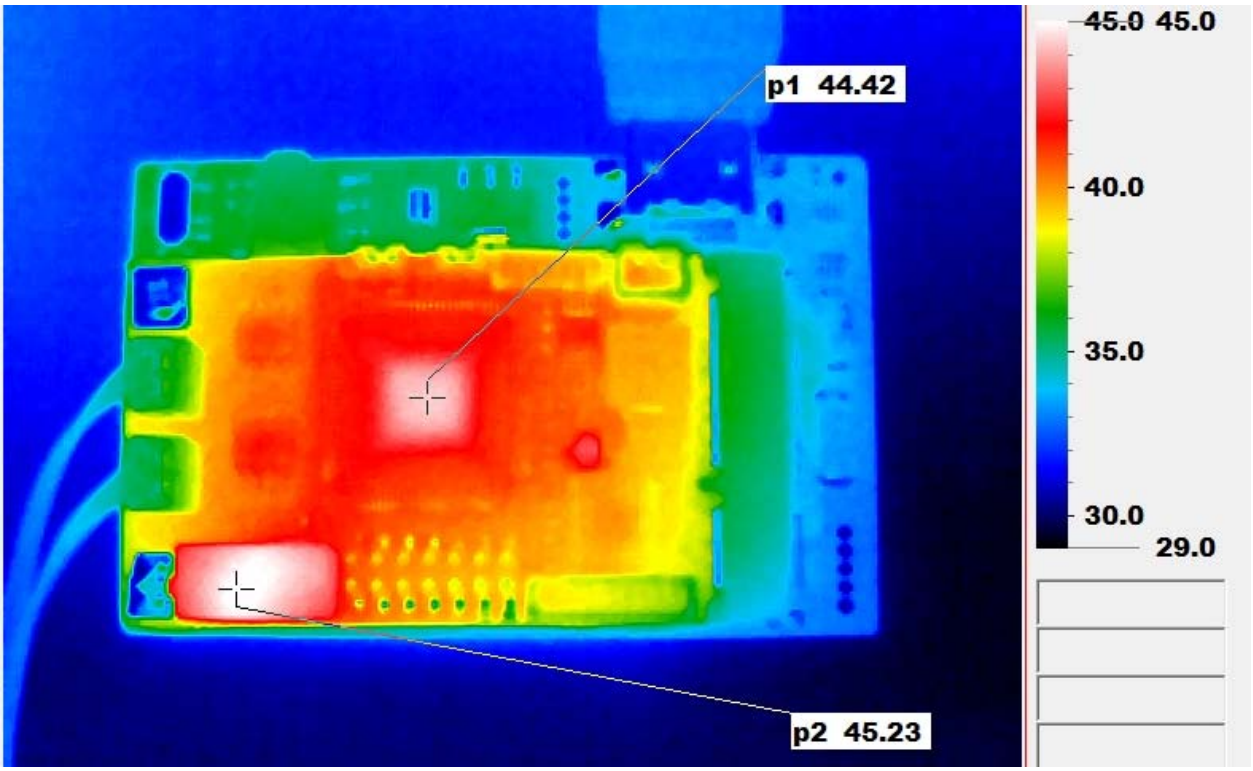
Thermal Image Analysis

1. Test Date: 2015-03-31
2. Test Product: PER-T248
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: 2014/09/30
       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: 2014/12/14
       Serial Number: 1051444
5. Test Condition:
   Test by DA-100: 25.0℃ with Heat Sink
6. Take Picture Time:
   After power on 2 hours

Temperature Profile Test:

Component Side:



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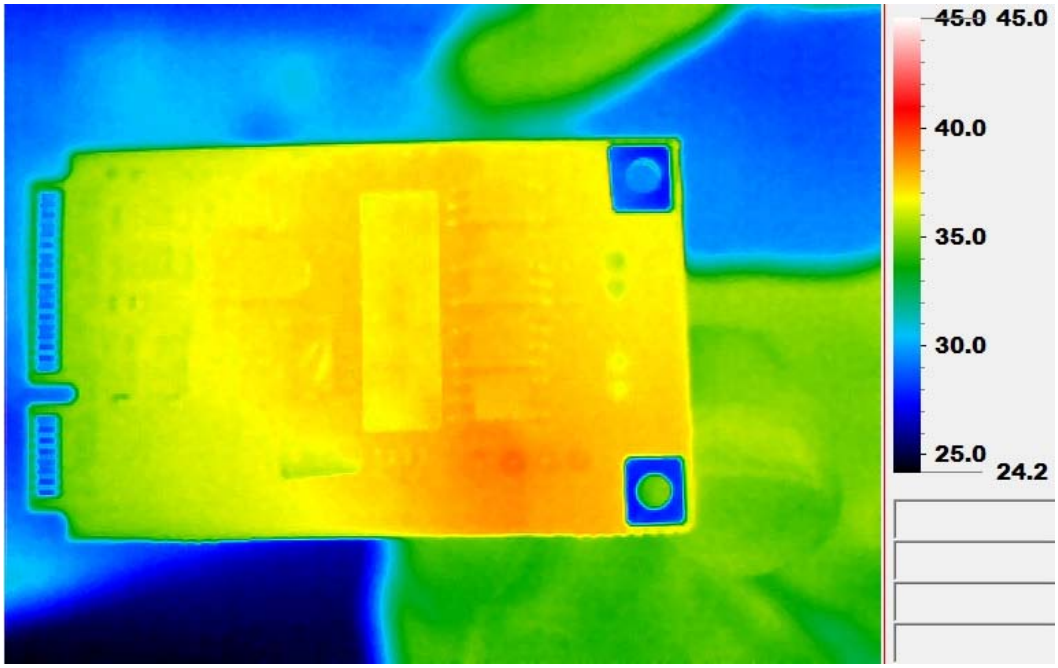
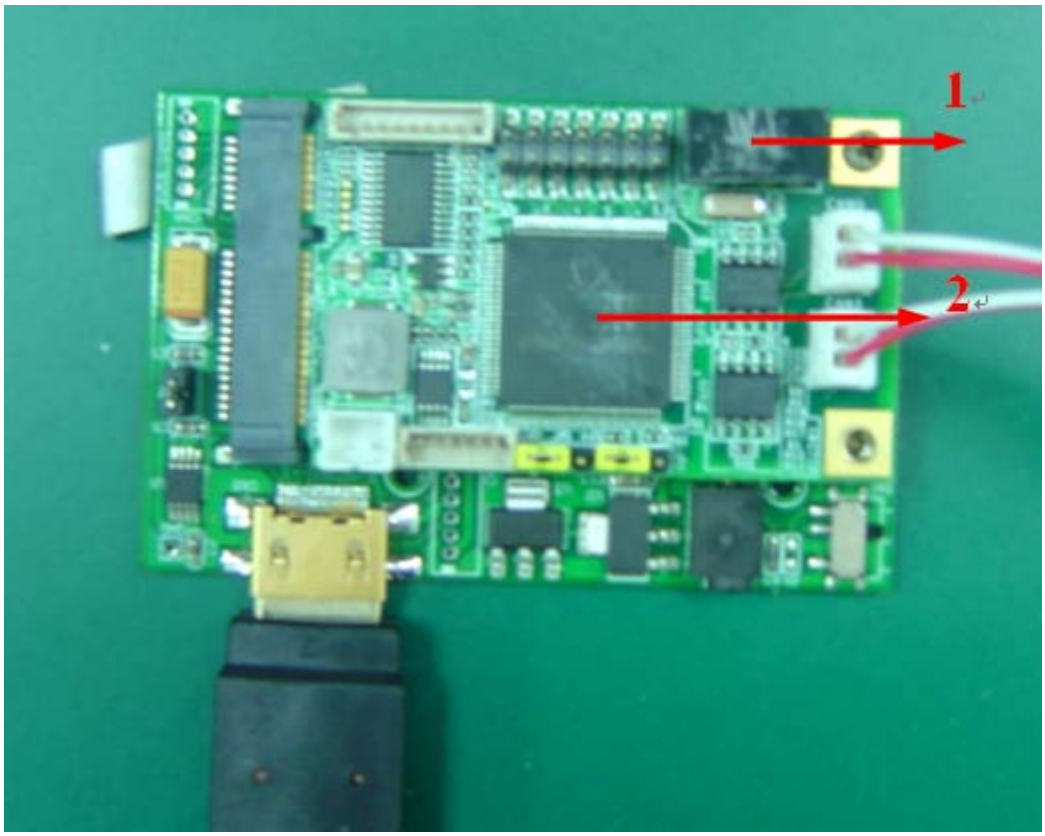
Back Side



Terminal Recorder :

Measuring Thermal Couple Position：



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

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.0℃	60℃	
1	U21	CONVERTER.DIP.5V.1W.3KVDC Isolated DC-DC.MORNSUN.	NA	40.3	75.3	
2	U12	IC.32-Bit Flash Microcontroller.R5F5630ADDFP	NA	38.9	73.9	

Note(*):

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.

3. 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.

4. Defect NO.: P131225QED02

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