EMB-H61B

1.0

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature at one component was estimated to be in marginal temperature point in comparison with component datasheet.**

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

Issue date	Approval	Test Engineer
2012 / 12 / 19	Tom Lin	Matthew Chi

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Sample Configuration & Quantity Under Test

- **Model name :** EMB-H61B
- **CPU :** Intel i7-3770S 3.10GHz
- **Chipset :** Intel H61
- **Memory :** Transcend 8G DDR3 1600 (HYKO K4B4G0846B) x2
- **SATA HDD :** Seagate ST500DM002 3.5” 500G
- **BIOS :** R0.3(EH61BT03)(12/06/2012)
- **Test Software :** Windows 7 / Run PassMark Burn In Test 7.0
- **Power :** AT Power CWT DSA400P-C
- **CPU Fan:**

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Thermal Image Analysis

1. Test Date: 2012-12-19

2. Test Product: EMB-H61B

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: 2011/10/12

Serial Number: 12A323190

4.2. IR Scanner: Infrared Camera

4.2.1 NIPPON AVIONICS CO., LTD.

4.2.2 Model: NEC-G100D

Date of Calibration: 2012/01/03

Serial Number: 1051444

5. Test Condition:

Component Side-1 (Test by DA-100): 25.0℃ With CPU Fan

6. Take Picture Time:

After power on 2 hours

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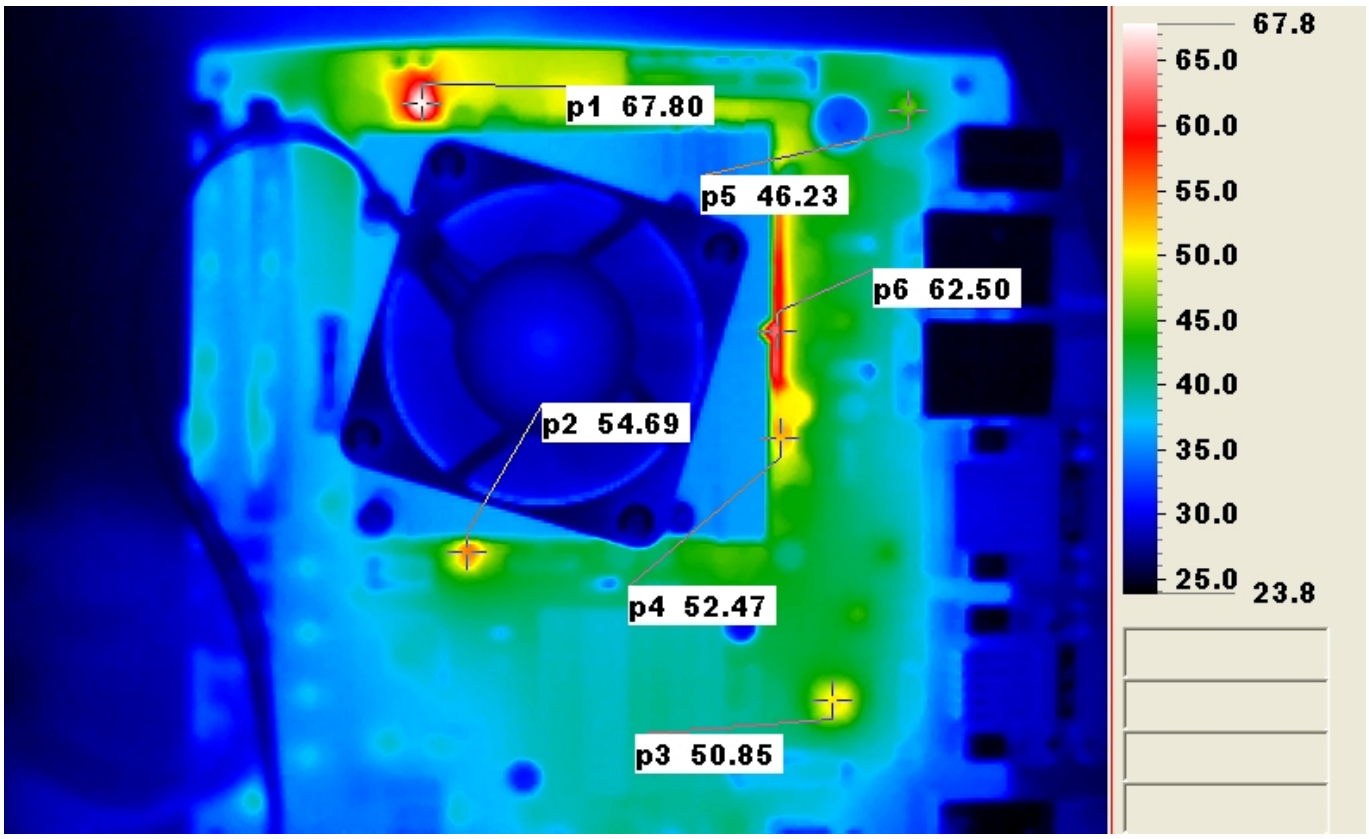
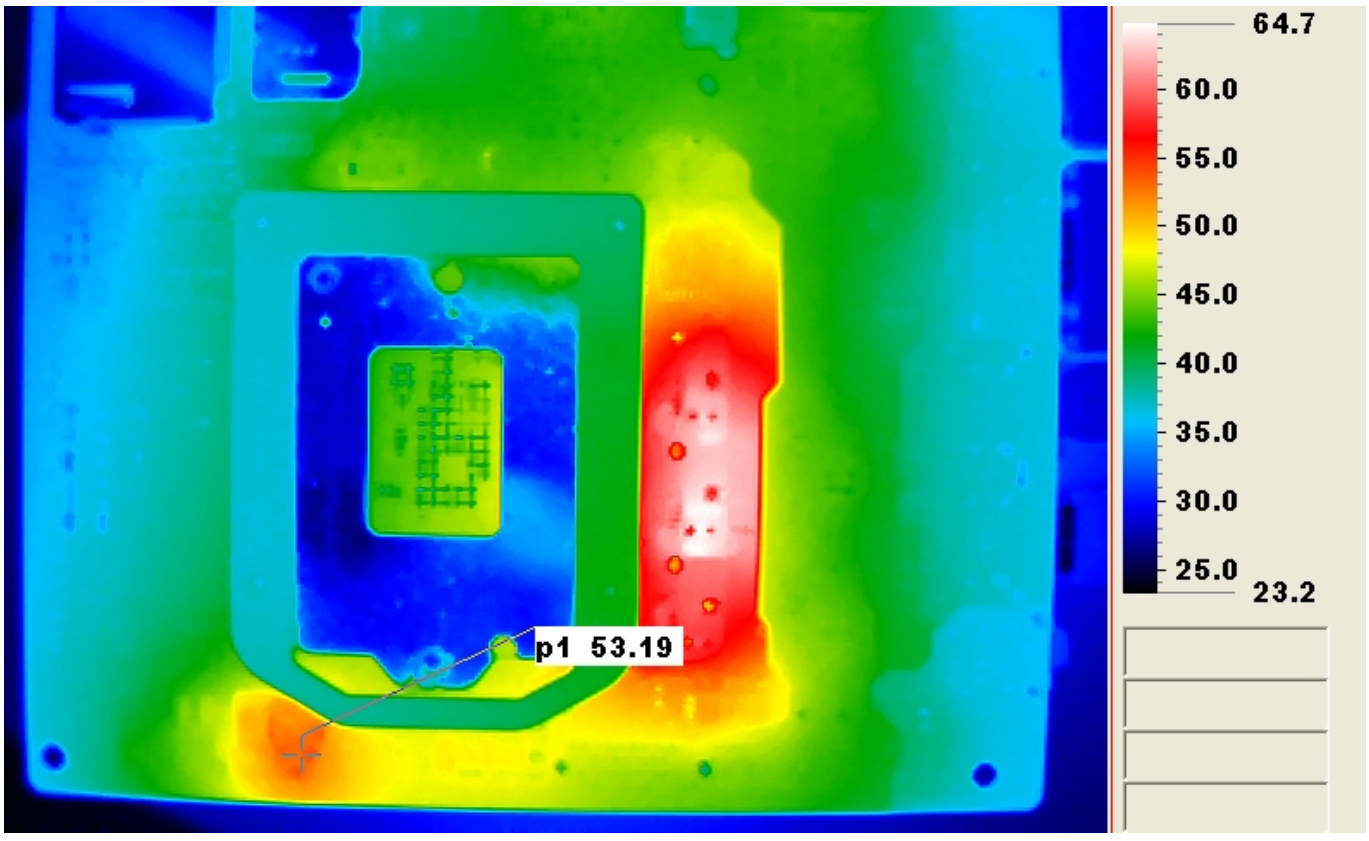
Temperature Profile Test:

Component Side:





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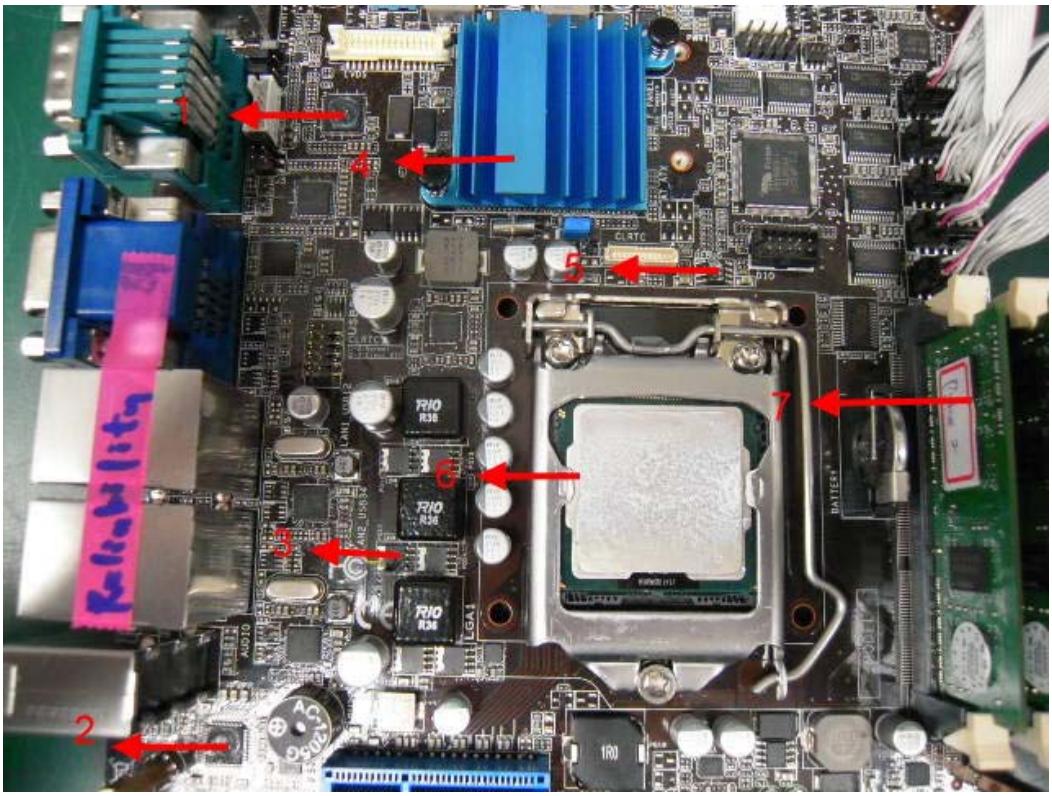
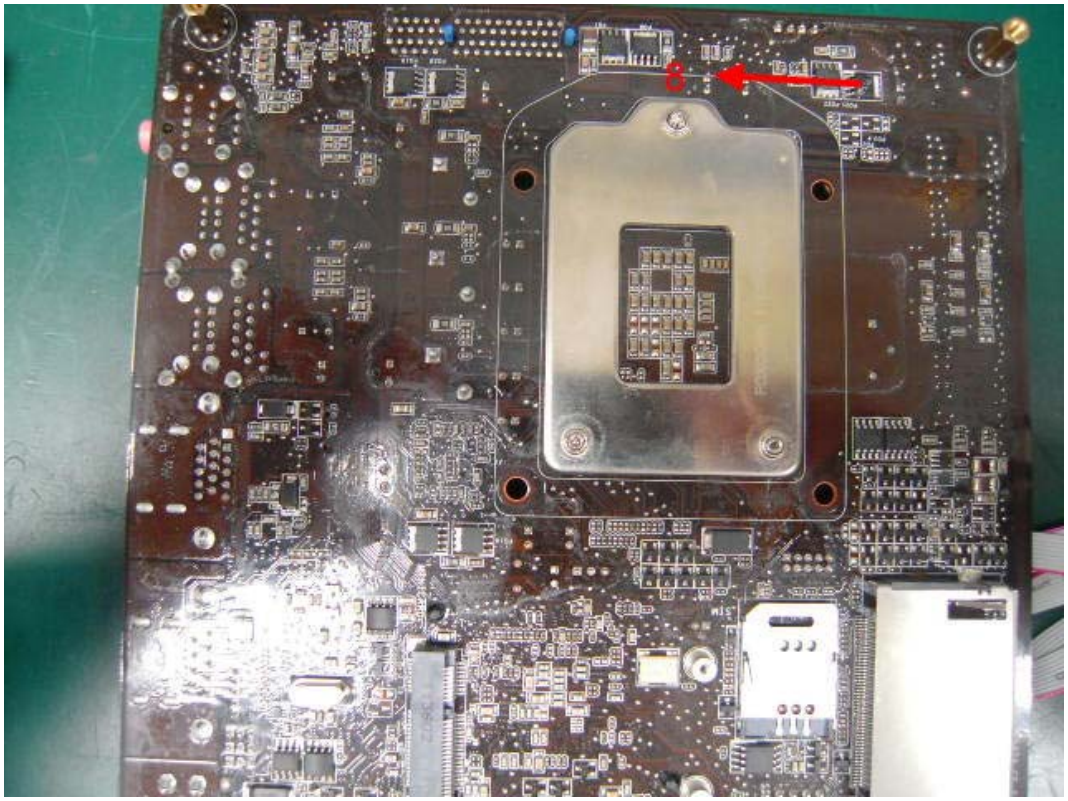
Terminal Recorder:

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℃	60℃	
1	U22	(TF)DisplayPort to LVDS Converter.Chrontel.CH7511B-BF	100	50.1	85.1	
2	U9	(TF) Audio Codec. output.SMD.Realtek.ALC887-VD2-CG	100.5	43.5	78.5	
3	PQ11	(TF)PWR.N-MOSFET.NXP.PH7030AL	120	58.5	93.5	
4	U35	(TF)IC.SMD.Platform Controller Hub.INTEL.BD82H61.SLJ4B	125	43.5	78.5	
5	U45	(TF)Low Dropout.Linear Regulator.APEC.APE8955MP	100	49.5	84.5	
6	CPU	Intel i7-3770S 3.10GHz	69.1	38.4	73.4	
7	Memory	Transcend 8G DDR3 1600 (HYKO K4B4G0846B)	85	39.6	74.6	
8	PQ22	(TF)PWR.N-MOSFET.NXP.PH7030AL	120	42.6	77.6	

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.

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