IMBM-Q87A

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature points at 1 component were estimated to be in marginal temperature points in comparion with component datasheets.**

Test Result Summary

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

Issue date	Approval	Test Engineer
2013 / 11 / 22	Tom Lin	Juno Cheng

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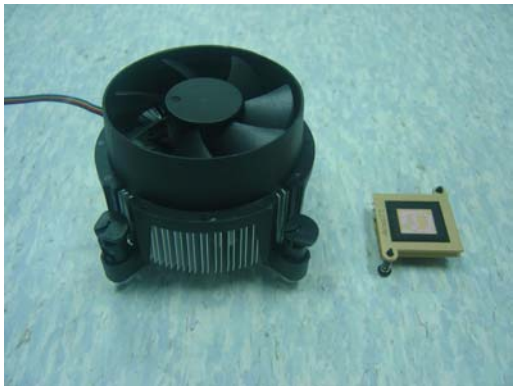
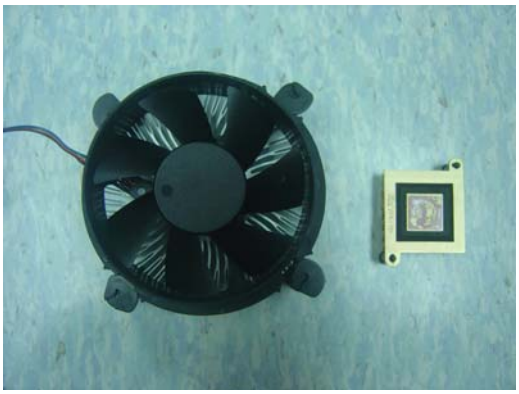
Sample Configuration & Quantity Under Test

- **Model name : IMBM-Q87A**
- **CPU Board : 0800+03720XM1 REV.1.0**
- **CPU : Intel Core i7-4770K / 3.50GHz**
- **Memory : Transcend 8GB * 2 / DDR3 1600 / SEC 234 HYKO K4B4G0846B**
  Transcend 8GB * 2 / DDR3 1600 / ELPID J4208BBBG-GN-F
- **HDD : TOSHIBA 2.5” SATA 2 HDD 320GB MK3276GSX**
- **BIOS : R0.4 (MQ87AM04)(10/30/2013)**
- **Test Software : Windows 7/ Run PassMark Burn In Test 7.0**
- **Cooler & Heat Sink:**





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Thermal Image Analysis

1. Test Date: 2013-11-22

2. Test Product : IMBM-Q87A

3. Test Site: 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: 2013/10/01

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: 2013/01/08

Serial Number: 1051444

5. Test Condition:

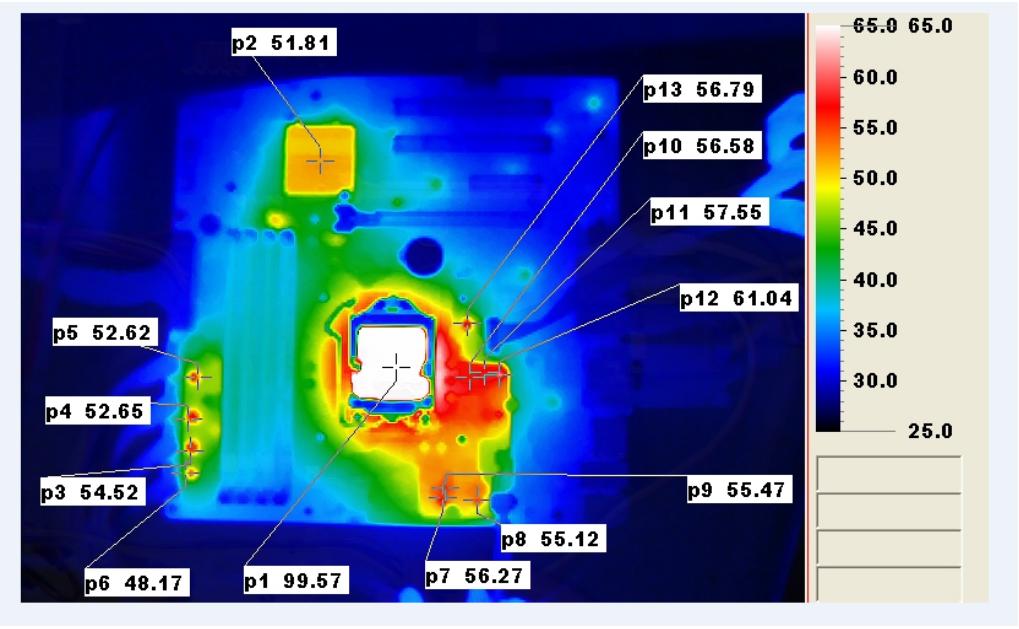
Component Side-1 (Test by ZR-RX40):25.0°C With CPU Fan

6. Take Picture Time:

After power on 2 hours

Terminal Recorder :

Measuring Thermal Couple Position：



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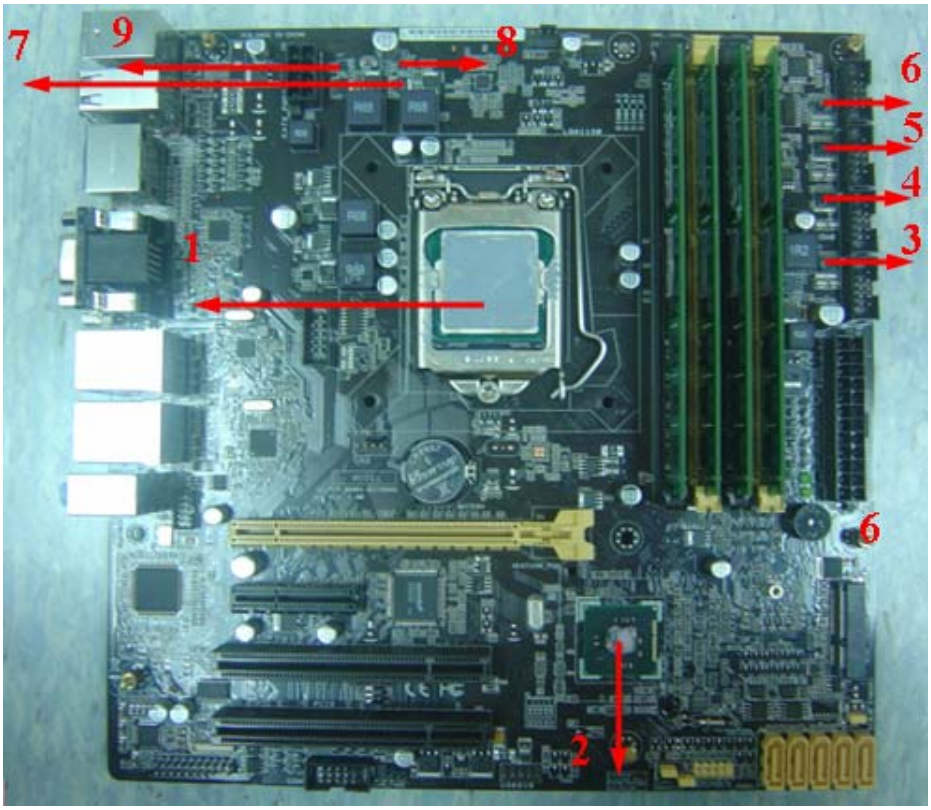

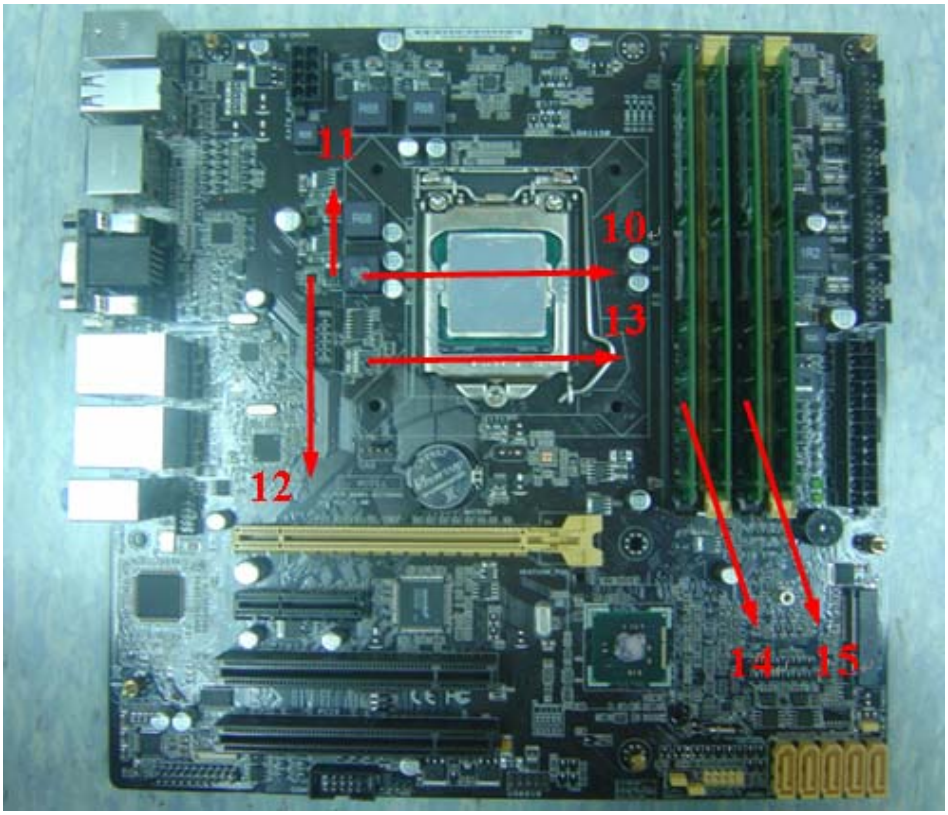

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Point	Position	Describe	Tc (℃)	Tm (24.9℃)	Tm (60℃)	Note
1	CPU	Intel Haswell DT (LGA1150) 86W CPU	73.78	38.5	73.6	Note 3
2	SU1	(C2)FCBGA708/INTEL929132/DH82Q87/SR173	104	43.3	78.4	
3	OU11	INTERFACE ADM213EARSZ SSOP-28/A.D.	100	53.9	89	
4	OU13	INTERFACE ADM213EARSZ SSOP-28/A.D.	100	50.7	85.8	
5	OU12	INTERFACE ADM213EARSZ SSOP-28/A.D.	100	58.2	93.3	
6	OU10	INTERFACE ADM213EARSZ SSOP-28/A.D.	100	54.5	89.6	
7	PQ834	N-MOSFET PH2530AL SOT-669/NXP	105	50.3	85.4	
8	PU6	MOSFET DRIVER IC RT9611AGQW/RICHTEK WDFN-8L	100	49.2	84.3	
9	PU7	MOSFET DRIVER IC RT9611AGQW/RICHTEK WDFN-8L	100	44.5	79.6	
10	PL7	INDUCTOR 0.68UH/35A /CHUNG SHUO/CS1112-R68-I43U	125	35.3	70.4	
11	PQ840	N-MOSFET PH2530AL SOT-669/NXP	105	35.4	70.4	
12	PU9	MOSFET DRIVER IC RT9611AGQW/RICHTEK WDFN-8L	100	33.8	68.9	
13	OU8	INTERFACE ADM213EARSZ SSOP-28/A.D.	100	40.1	75.2	
14		Memory chipset — 1	95	35.7	70.8	
15		Memory chipset — 2	95	31.8	66.9	

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.** BUL1321QEE02

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