COM-QM87

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** Comment: There are 2 temperature points marginal passed, the function is normal, hope to get improvement for the next generation.

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date	Approval	Issued by
2013-11-12	Tom Lin	Juno cheng

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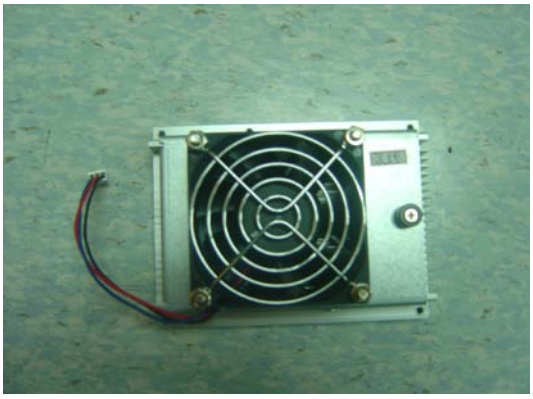
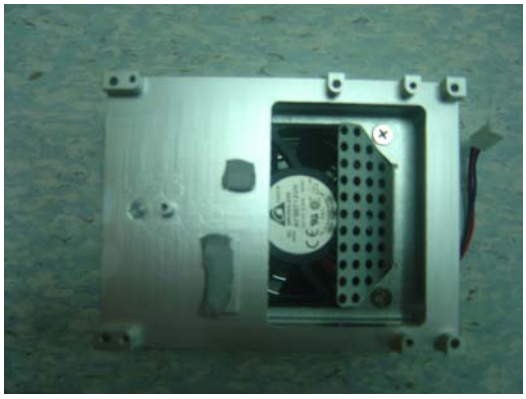
Sample Configuration & Quantity Under Test

- **Model name : COM-QM-QM87**
- **CPU Board : COM-QM87 REV. B0.2**
- **CPU : Intel Core i7 – 4700EQ 2.40GHz**
- **Memory : Transcend DDR3L 1600 8GB CL11 (SEC K4B4G0846B) *2**
- **HDD : HITACHI Z5K320-160 160GB 2.5“**
- **BIOS : COM-CP3 (V00NEM14) (10/18/2013) for ECB-920A(F)**
- **Test Software : Windows 7/ Run PassMark Burn In Test 7.0**
- **Power : ATX Power**
- **Cooler:**





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Thermal Image Analysis

1. Test Date: 2013-11-12

2. Test Product: COM-QM87 With ECB-920A

3. Test Site: QE Dept.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 OMRON Inc,

4.2.2 Model: ZR-RX40

Date of Calibration: 2012/12/11

Serial Number: H004528074.2. IR Scanner: Infrared Camera

4.2.1 NEC

4.2.2 Model: G100D

Date of Calibration: 2013-10-01

Serial Number: 1051444

5. Test Condition:

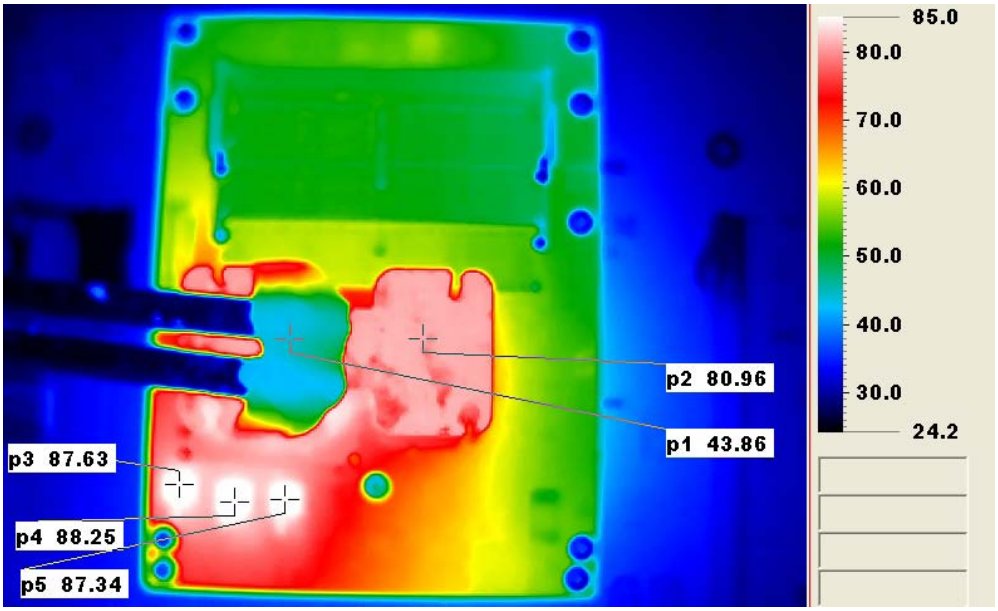
Component Side-1 (Test by ZR-RX40):25.0°C With CPU Fan

6. Take Picture Time:

After power on 2 hours

Terminal Recorder:

Measuring Thermal Couple Position：



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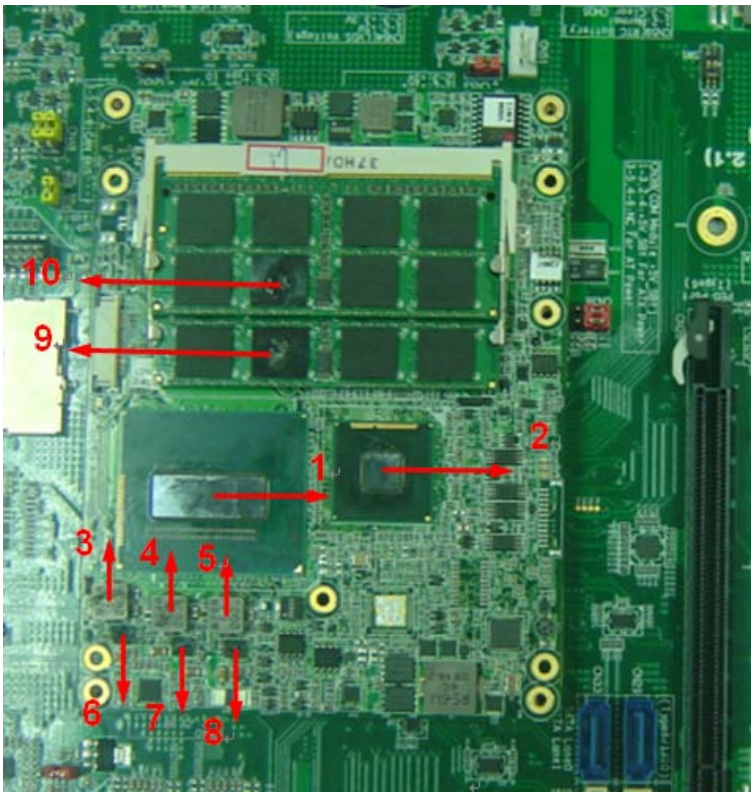

Point	Position	Describe	Tc (℃)	Tm (25℃)	Tm (60℃)	Note
1	U5	(TF)INTEL CPU.Haswell.i7-4700EQ.2.4GHz(up to 3.4GHz)	100	57.9	92.9	Note4
2	U15	(TF) PCH.SMD.INTEL.DH82QM87 SR17C	100	59.7	94.7	Note4
3	L1	(TF)Synchronous Buck NexFETTM. TI.CSD97374Q4M	125	58.7	93.7	
4	L2	(TF)Synchronous Buck NexFETTM. TI.CSD97374Q4M	125	57.2	92.2	
5	L3	(TF)Synchronous Buck NexFETTM. TI.CSD97374Q4M	125	56.3	91.3	
6	U1	(TF)COIL.0.24uH. Panasonic.ETQP4LR24AFM	125	51.6	86.6	
7	U4	(TF)COIL.0.24uH. Panasonic.ETQP4LR24AFM	125	51.6	86.6	
8	U6	(TF)COIL.0.24uH. Panasonic.ETQP4LR24AFM	125	54.2	89.2	
9		Memory chipset — 1	95	27.8	62.8	
10		Memory chipset — 2	95	27.8	62.8	

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. : C130803QED02

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