COM-HM76

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
2014 / 04 / 03	Tom Lin	Jerry Chen

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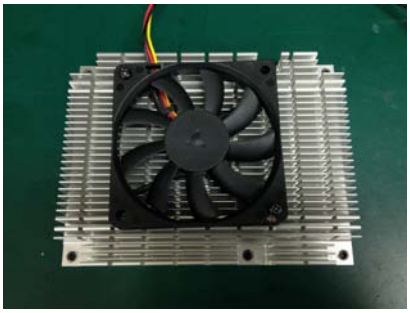
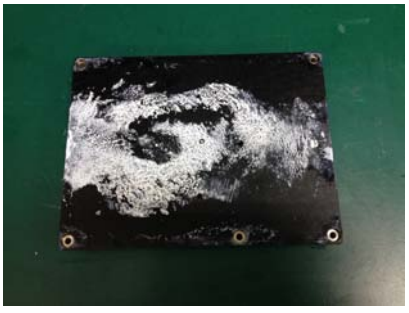
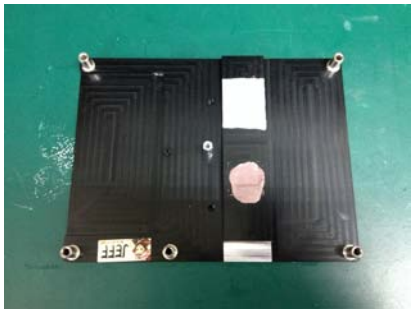
Sample Configuration & Quantity Under Test

- **Model name : COM-HM76 Rev. C0.2**
- **Mother Board : COM-HM76 Rev. C0.2**
- **BIOS : COM-HM76 T0.5(CM76CT05)(03/03/2014) Legacy**
- **CPU : Intel Core i7-3610QE 2.3GHz**
- **Chipset: Intel HM76**
- **Memory : Transcend 8GB*1 / DDR3 1600 / SEC K4B2G0846D**
- **2.5” SATA HDD : Toshiba / MK1060GSC / 100GB**
- **Test Software : Windows 7 / Run PassMark Burn In Test 7.1 Pro**
- **ATX Power Supply：CWT DSA400P-C**
- **Heat Sink :**

Heat sink(P/N: PER-A115)




Heat-Spreader (P/N: M16QM77000)

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Thermal Image Analysis

1. Test Date: 04-01~02-2014

2. Test Product: COM-HM76 Rev. C0.2

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: 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: 2013/12/30

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 25℃ with Heat Sink

6. Take Picture Time:

After power on 2 hours

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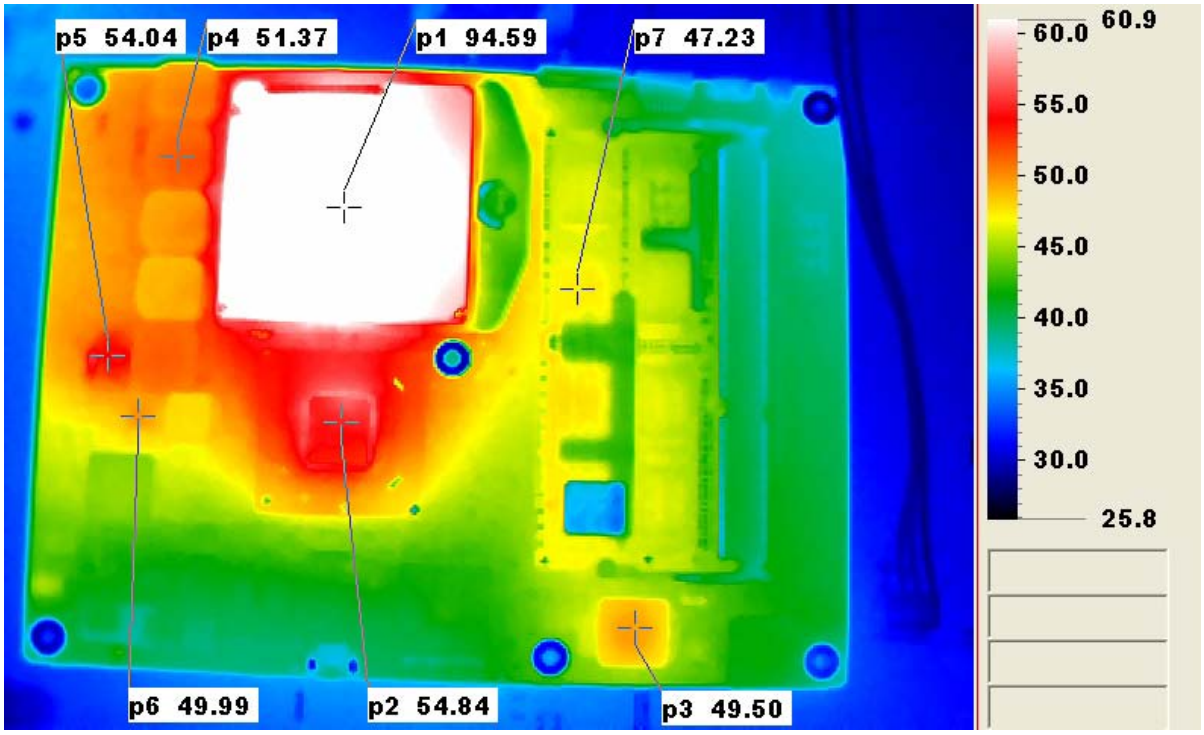
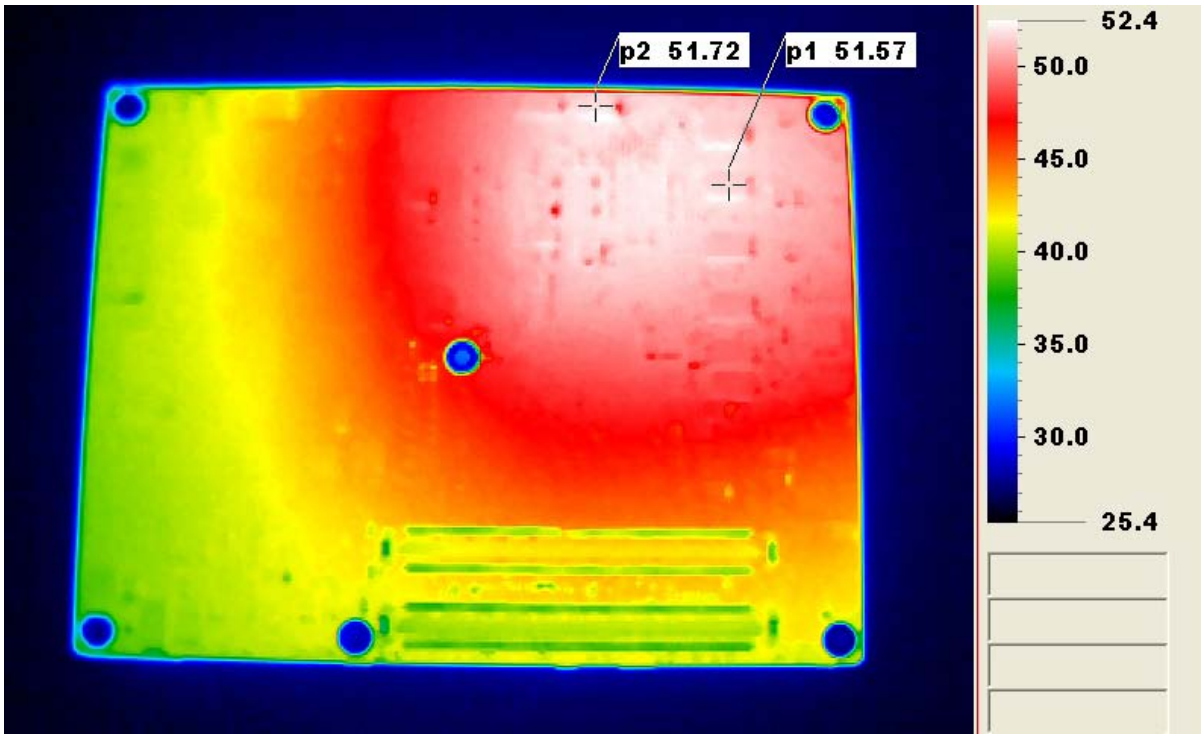
Temperature Profile Test:

Component Side:



Back Side:



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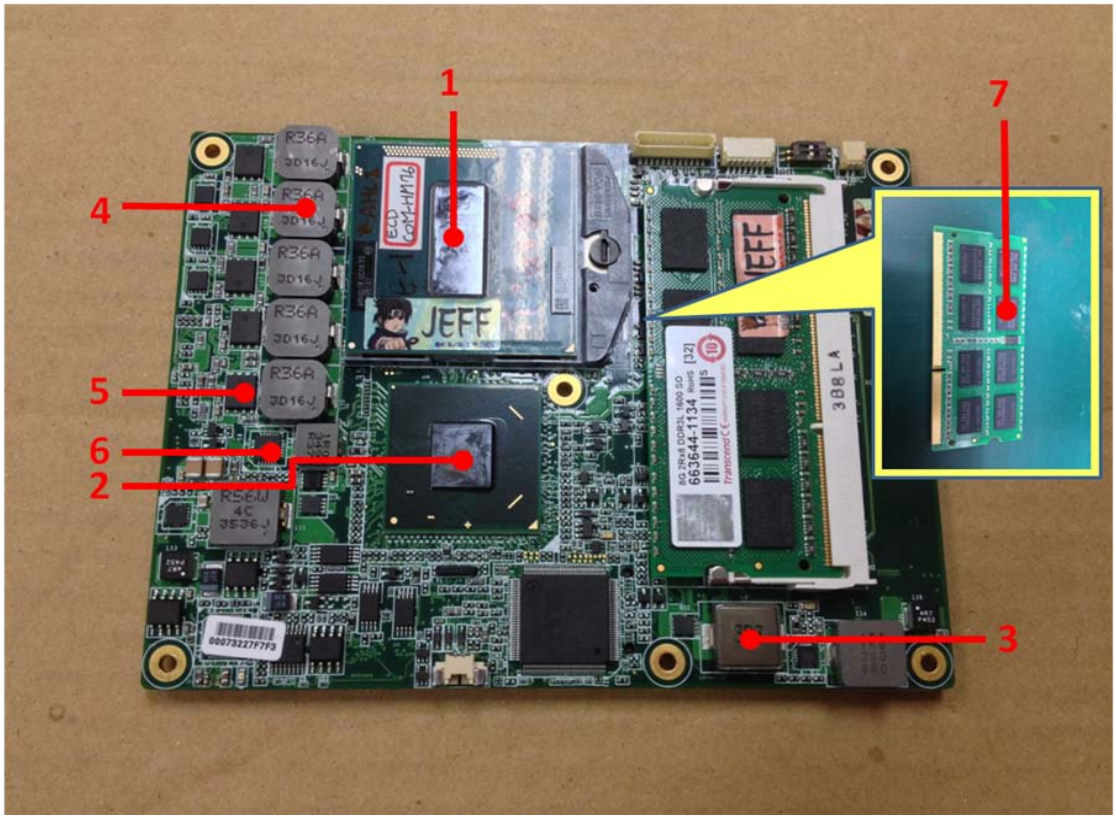
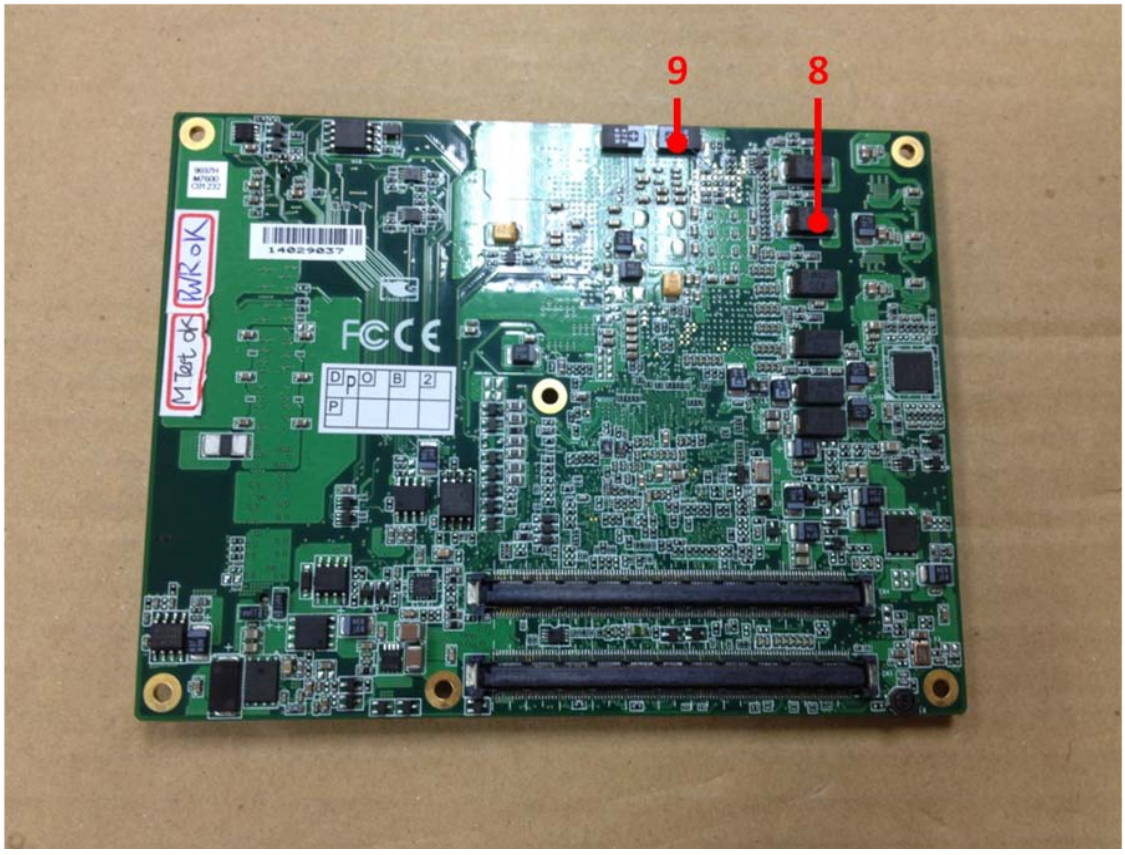
Terminal Recorder:

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	CPU	Intel Core i7-3610QE 2.3GHz	105	51.8	86.8	
2	U6	(TF)IC.HM76 Chipset PCH.INTEL.BD82HM76 SLJ8E	105	40.8	75.8	
3	L9	(TF)COIL.3.3uH.20%.GOTREND.GSTD1040PE-3R3M	125	47.5	82.5	
4	L18	(TF)COIL.0.36uH.Irms=34A.Panasonic.ETQP4LR36AFC	130	59.4	94.4	
5	Q68	TF)PWR.DUALSMD.N-MOSFET.PQFN8.FAIRCHILD.FDMS3664S	125	55.7	90.7	
6	U31	(TF)QFN-24.Single Synchronous.Controller.TI.TPS51461RGE	100	52.2	87.2	
7	Memory	Transcend 8GB*1 / DDR3 1600 / SEC K4B2G0846D	85	50	85	Note4
8	TC16	(TF)SP CAP.470uF.2V.+-20%.D.6mOhm.Panasonic.EEFSX0D471XE	105	54.9	89.9	
9	TC4	(TF)POSCAP.470uF.2.5V.D2.9mohm.3900mA.SANYO.2R5TPE470M9	105	53.2	88.2	

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. C131006QED08

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