COM-SKHB6

Intel Core i7 6820EQ / 2.8GHz CPU

Thermal Image Analysis Report

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

Test Result Summary

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

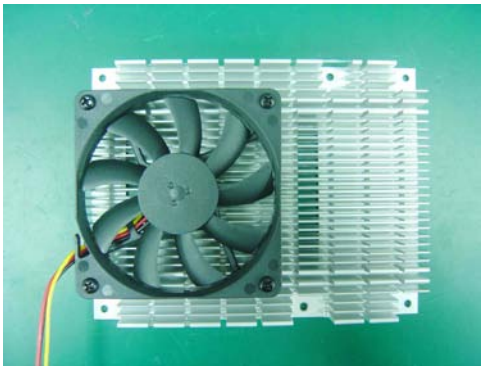
Issue date	QA Manager	Test Engineer
2016 / 03 / 22	KJ Wang	Rex Chang

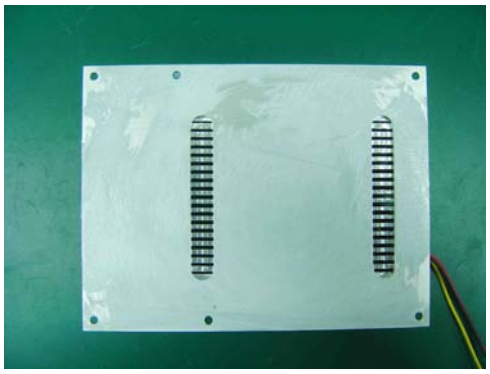
AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Sample Configuration & Quantity Under Test

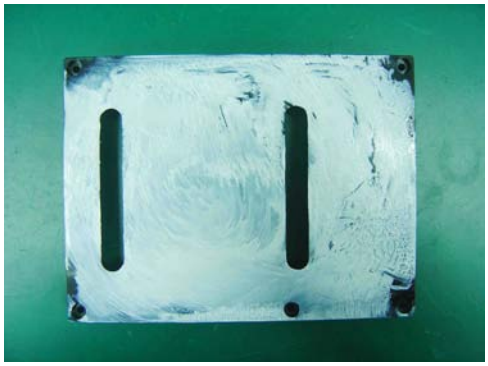
- **Model name: COM-SKHB6 Rev. A0.2**
- **CPU: Intel Core i7 6820EQ / 2.8GHz**
- **BIOS: CSKHAM0B**
- **Chipset: Intel QM170**
- **Memory: Kingston DDR4 8GB / SKhynix H5AN4G8NAFR TFC**
- **2.5“ HDD: TOSHIBA MK1676GSX / 160GB**
- **Test Software: Windows 8.1/ Run PassMark Burn In Test 8.0 Pro**
- **ATX Power Supply: CWT DSA400P-C / 400W**
- **CPU Cooler:**

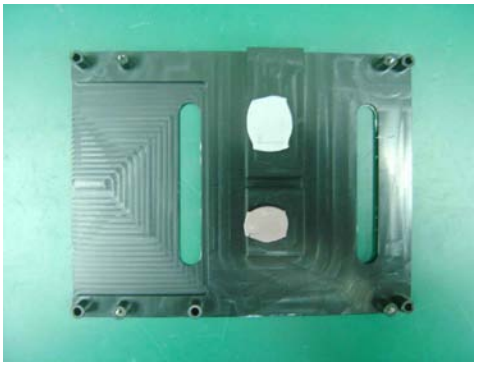
CPU Cooler.FAN+Heat Sink (P/N: 17592SKHB0)





Heat-Spreader (P/N: M16SKHB000) + Thermal Pad





AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Thermal Image Analysis

1. Test Date: 2016-03-22

2. Test Product: COM-SKHB6

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: 2015/09/10

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: 2015/12/01

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 25.0℃ with Heat Sink + Fan (Full speed)

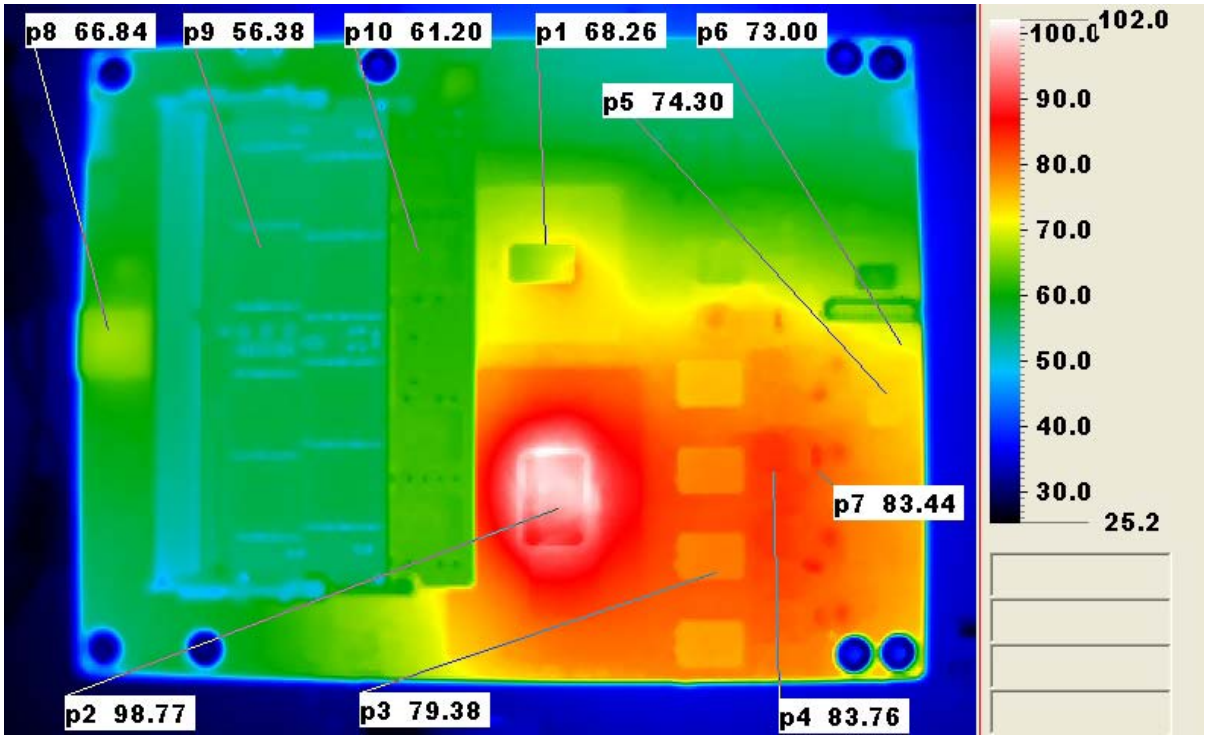
6. Take Picture Time:

After power on 2 hours

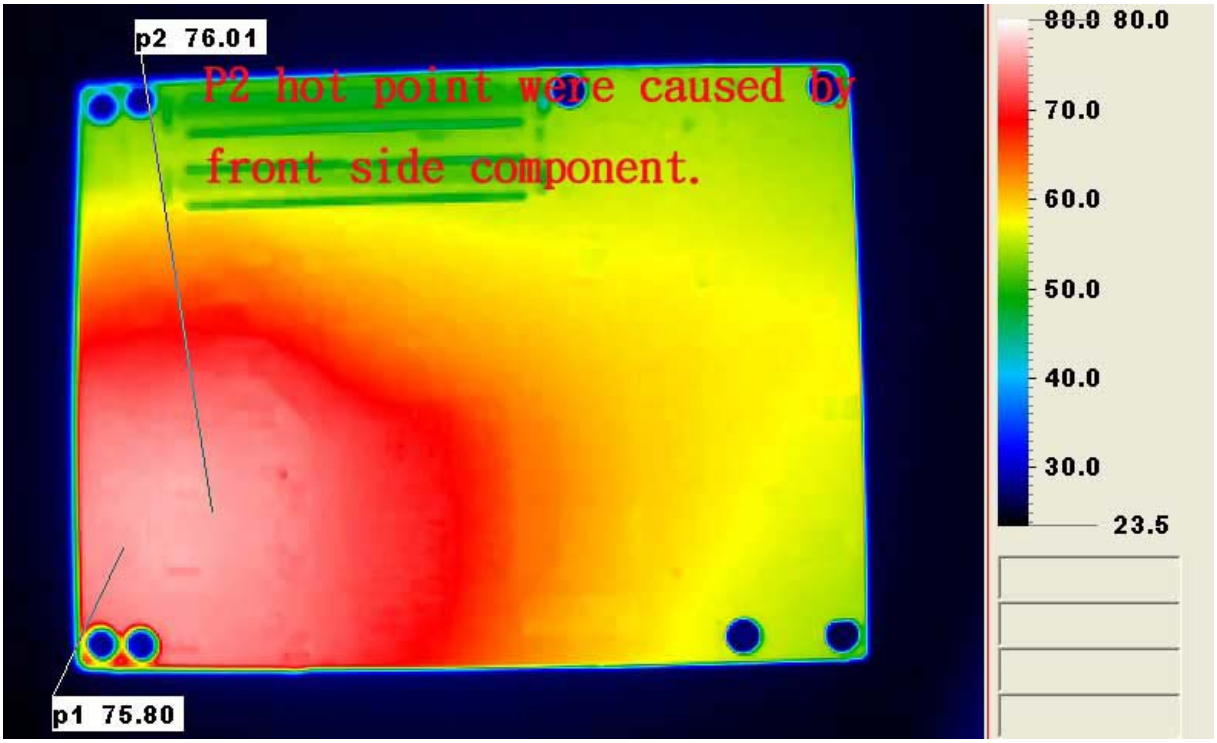
AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Temperature Profile Test:

Component Side:



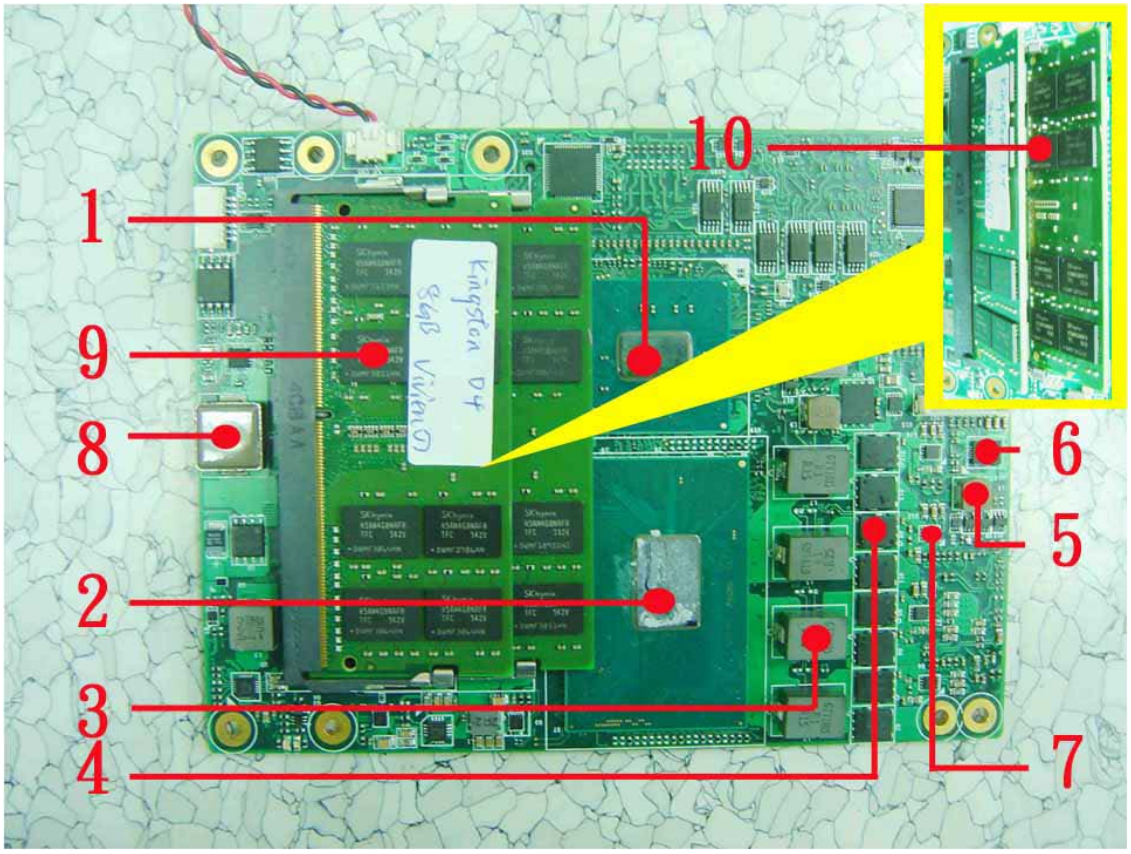
Back Side:

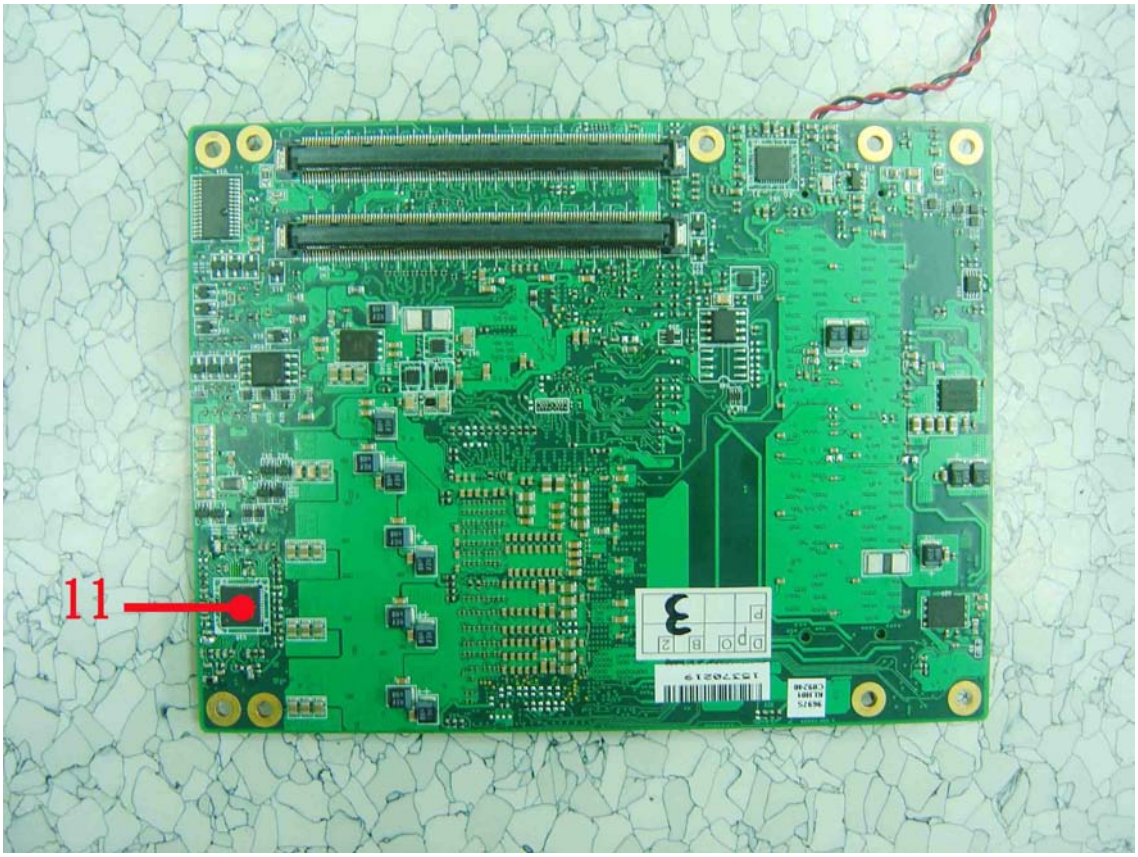


AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Terminal Recorder:

Measuring Thermal Couple Position：





AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

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

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25.0℃	60℃	
1	U19	PCH	108	40.8	76.0	
2	U6	CPU - Intel Core i7 6820EQ / 2.8GHz	100	49.2	84.4	
3	L4	INDUCTOR.0.15uH.10%. GOTREND.GTV1005PR1-R15	125	56.7	91.9	
4	Q9	N-Channel.Vds=30V. Ids=36A. ON.NTMFS4982NFT1G	125	58.3	93.5	
5	L6	COIL.0.68uH. NEC/TOKIN.MPLCG0530LR68	120	53.1	88.3	
6	U13	High input voltage.Synchronous converter. TI.TPS51362RVET	125	51.4	86.6	
7	U12	MOSFET Drivers.DFN 8P.SMD.ON.NCP81146MNTBG	125	44.3	79.5	
8	L8	1.5uH.20%. Idc=15Amp.ZenithTek.ZPWM-1040MB-1R5M	125	53.8	89.0	
9		Memory Chipset	95	43.5	78.7	
10		Memory Chipset	95	50.4	**85.6**	**Note6**
11	U35	Controller with single.SVID Interface. ON.NCP81245MNTXG	125	58.2	93.4	
12	Air	Air Temperature	N/A	24.8	60.0	

Note(*):

1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.

2. "TAT" indicates the actual measured temperature under 25℃ working environmental.

3. "TPT" indicates the predicted temperature under product specification.

4. 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.

5. **RTC battery avoid to put on heat position.** Please do not exceed battery temperature specification.

6. Defect NO. : C150302QED08

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053