FSB-H81H

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: <u>After compared with component datasheet, there were 2 components' surface temperature located in marginal pass criteria.</u>**

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date	Approval	Test Engineer
2014 / 06 / 17	Tom Lin	Juno Cheng

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Sample Configuration & Quantity Under Test

- **Model name : FSB-H81H A 0.2**
- **CPU Board : FSB-H81H A0.1**
- **CPU : Intel Core i7- 4790S 3.1GHz up to 3.9GHz/Socket 1150/TDP=65W**
- **Memory : Transcend 8GB * 2 / DDR3 1333U / SEC 207 HYKO K4B4G0846B**
- **3.5" SATA HDD : Seagate/ST3500413AS 500GB**
- **BIOS : FSB-H81H R0.6 (F81HAM06)(06/11/2014)**
- **Test Software : Windows 7 / Run PassMark Burn In Test 7.1 Pro**
- **Power : ATX Power**
- **Cooler :**

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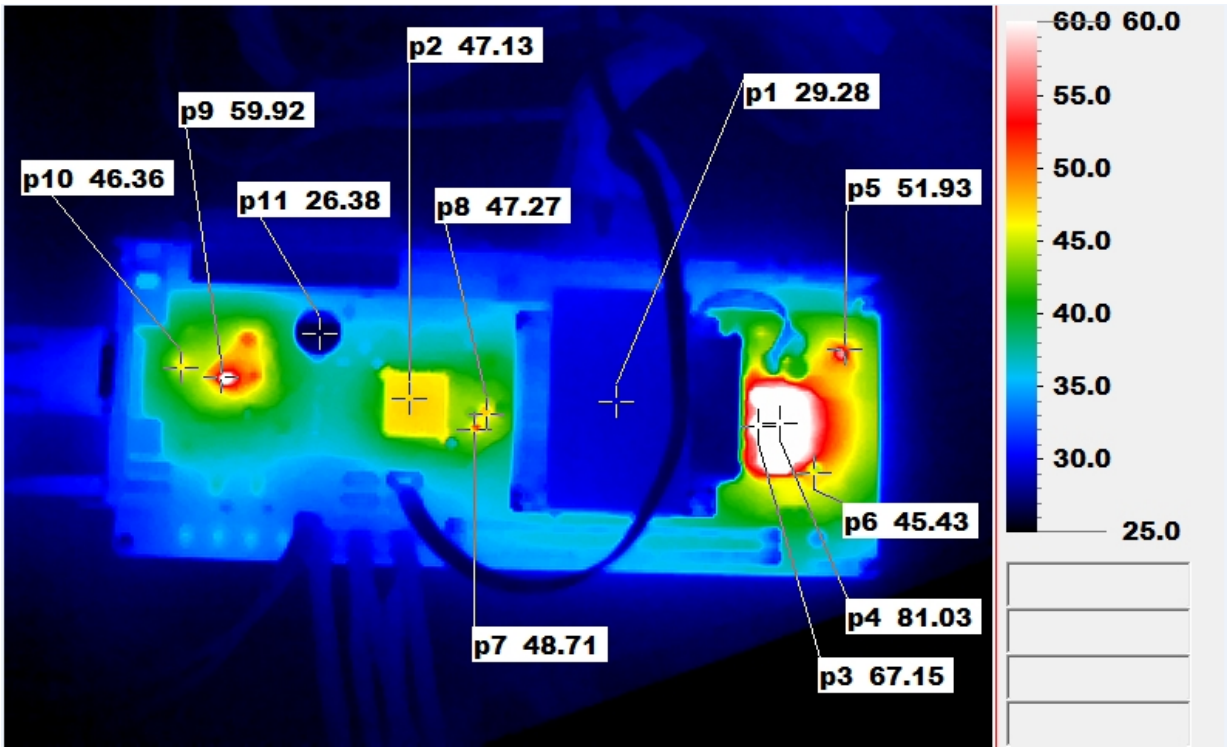
Thermal Image Analysis

1. Test Date: 2014-06-17
2. Test Product: FSB-H81H
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: 2013/01/08
       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

Temperature Profile Test:

Component Side:



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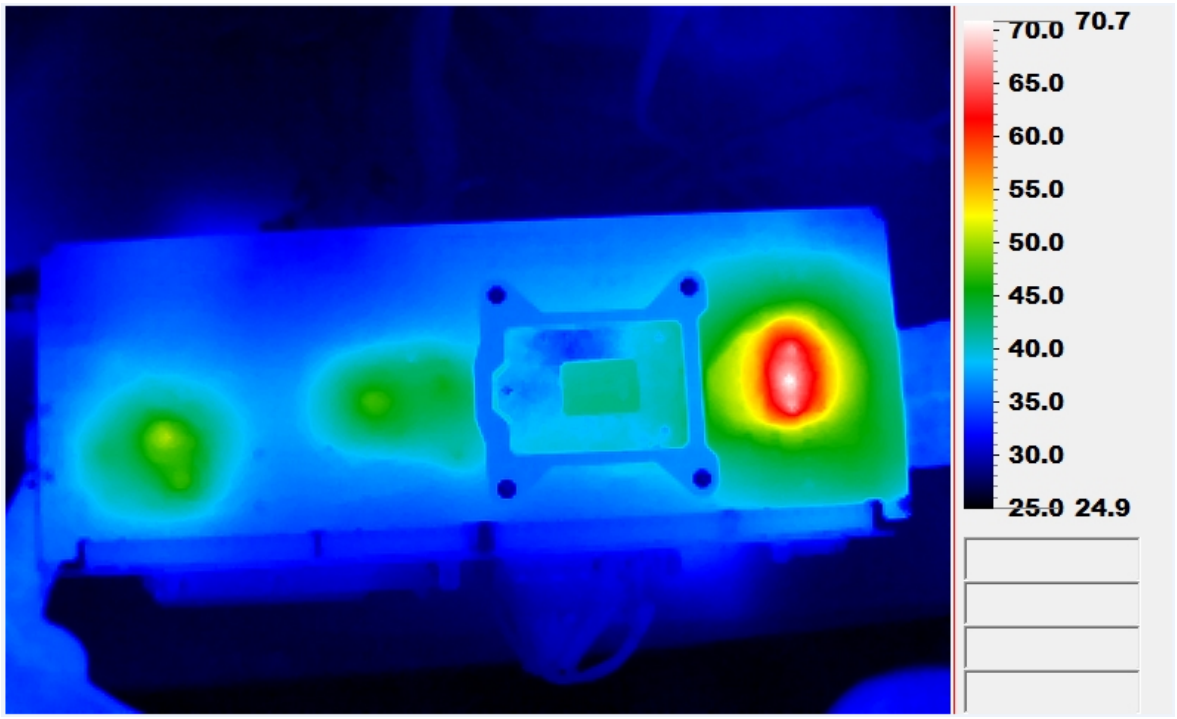
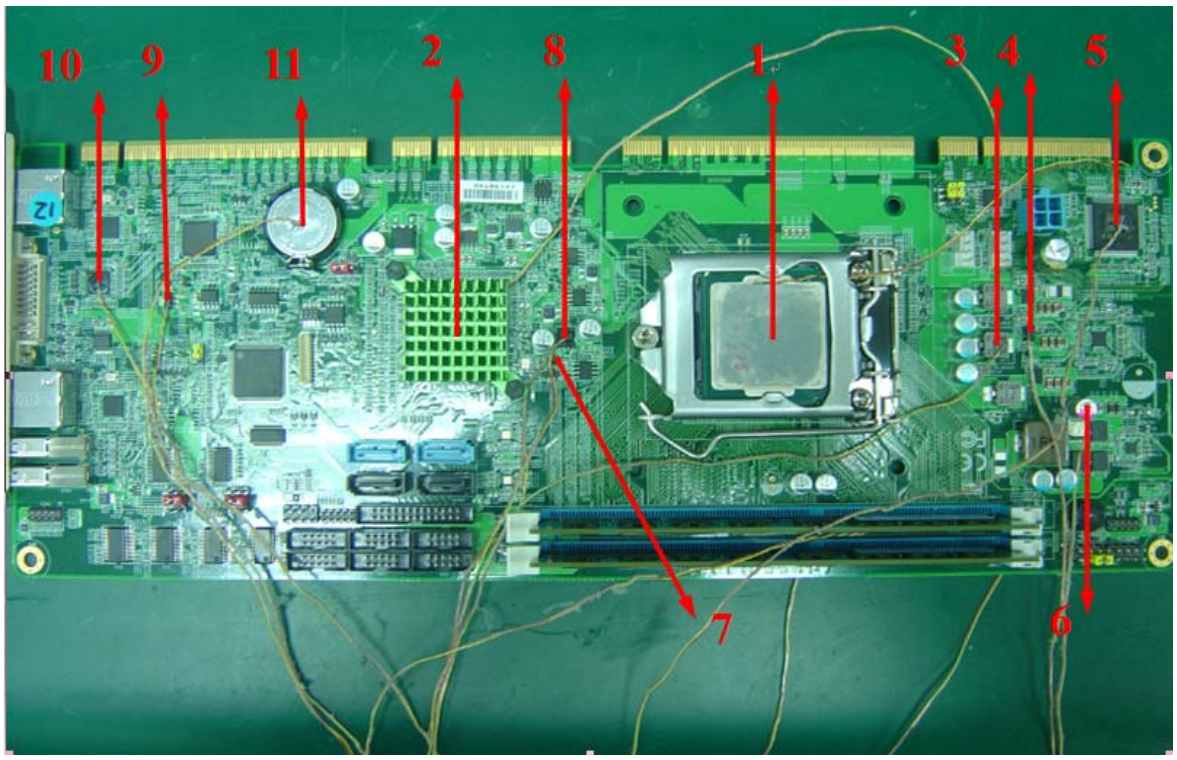
Back Side



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
				25.0℃	60℃	
1	U36	Intel i7- 4770S / 3.1GHz CPU	71.35	39.3	74.3	Note 3
2	U38	(TF)IC.Desktop Lynx Point PCH.SMD.INTEL.DH82H81.SR177	108	41.6	76.6	
3	L16	(TF)COIL. Panasonic.ETQP4LR24AFM	140	60.3	95.3	
4	U32	(TF)IC.Synchronous Power Stage.SMD.TI.CSD97374Q4M	140	75.8	110.8	
5	U55	(TF)IC.SMD LQFP 128P.PCIe to PCI Bridge Chip.ITE.IT8892E	85	53.8	88.8	Note 3
6	C178	(TF)OS-CON.560uF.6.3V.20%..Matsuki.MP6RLD560MC8	115	39.5	74.5	
7	VR1	(TF)REQ.SMD.CHAMPION.CM431AGBCM233	115	55.2	90.2	
8	Q17	(TF)N-MOSFET.Vgs=(+/-)20V. SMD.ON.NTMFS4C50NT1G	125	44.5	79.5	
9	U50	(TF)REG.SMD.CMOS LDO Regulator.AME.AME8805LEFTZ	100	60.7	95.7	
10	U42	(TF)IC.SMD.TQFN Shifter.for DP to HDMI.PI3VDP411LSZBE	85	43.7	78.7	
11	BT1	(TF)Lithium Battery.3V.225mAH.PANASONIC.CR2032	75	31.5	66.5	
12	-	**Memory chipset**	95	34.2	69.2	

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. : C140101QEE10

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