PFM-HDS

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature points at 5 components 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	5
Defect Unsolved	0	0	0	5

Issue date	Approval	Test Engineer
2013 / 02 / 08	Tom Lin	Rex Chang

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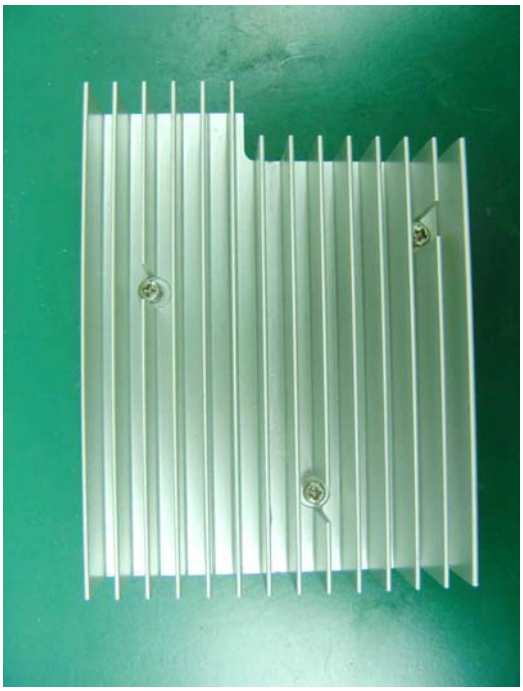
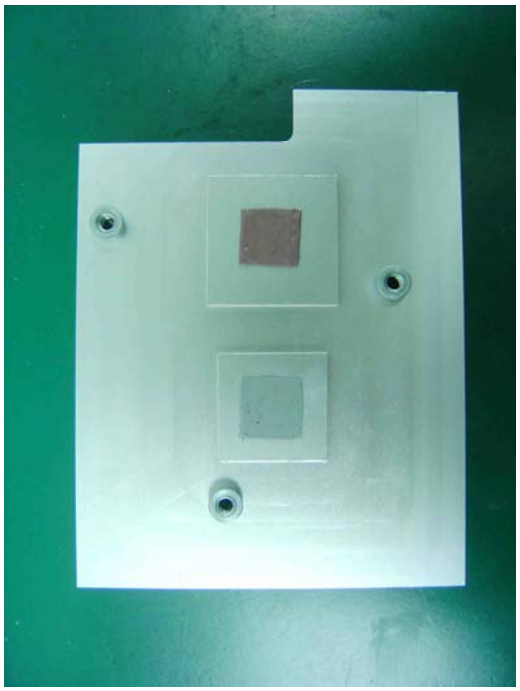
Sample Configuration & Quantity Under Test

- **Model name : PFM-HDS A0.2**
- **CPU Board : PFM-HDS A0.2**
- **CPU : AMD G-T16R / 615MHz**
- **Memory : DSL 4GB / DDR3 10660 / ELPIDA J2108BCSE-DJ-F**
- **2.5” SATA HDD : FUJITSU MHZ2080BH G2 / 80GB**
- **BIOS : PFM-HDS R0.3(PFHDAM03) (12/27/2012)**
- **Test Software : Windows 7 / Run PassMark Burn In Test 7.0 Pro**
- **Power : AT Power**
- **Heat Sink :**





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Thermal Image Analysis

1. Test Date: 2013-02-07

2. Test Product: PFM-HDS A0.2

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: 2012/10/08

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: 25.1℃ with Heat Sink

6. Take Picture Time:

After power on 2 hours

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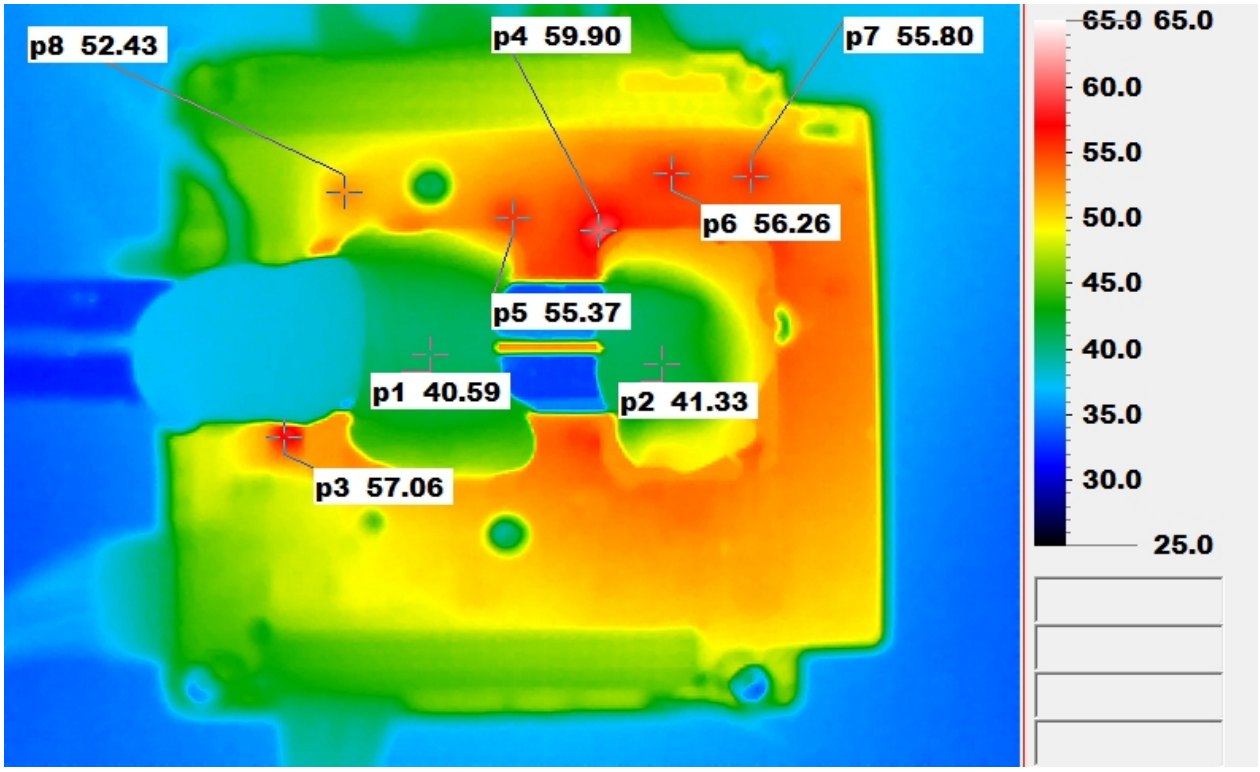
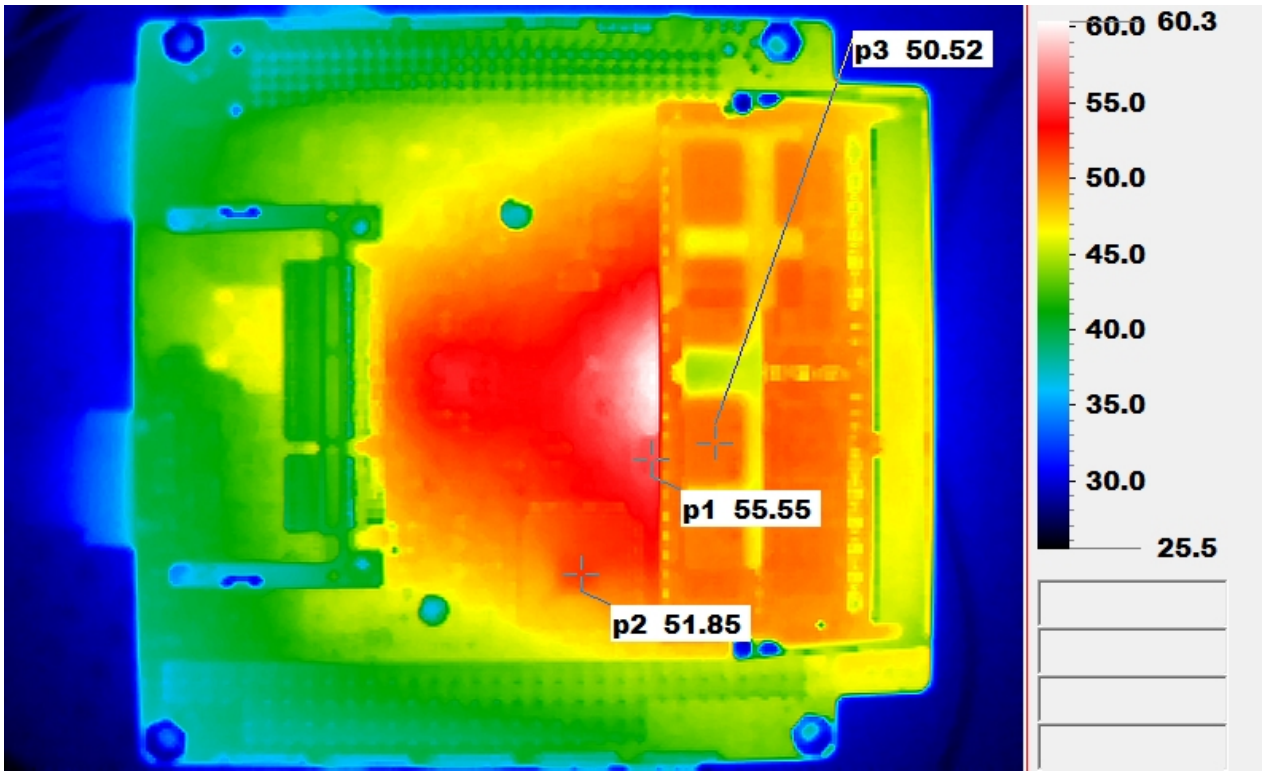
Temperature Profile Test:

Component Side:



Back Side:



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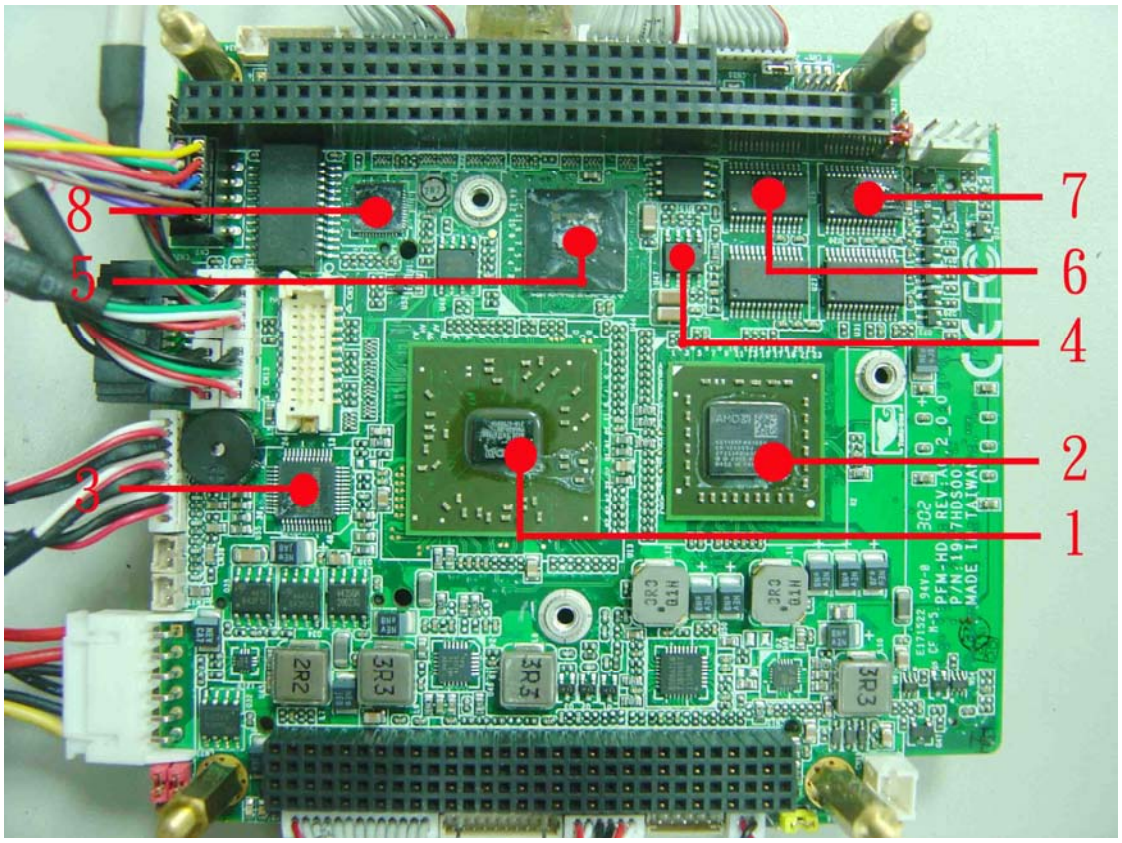
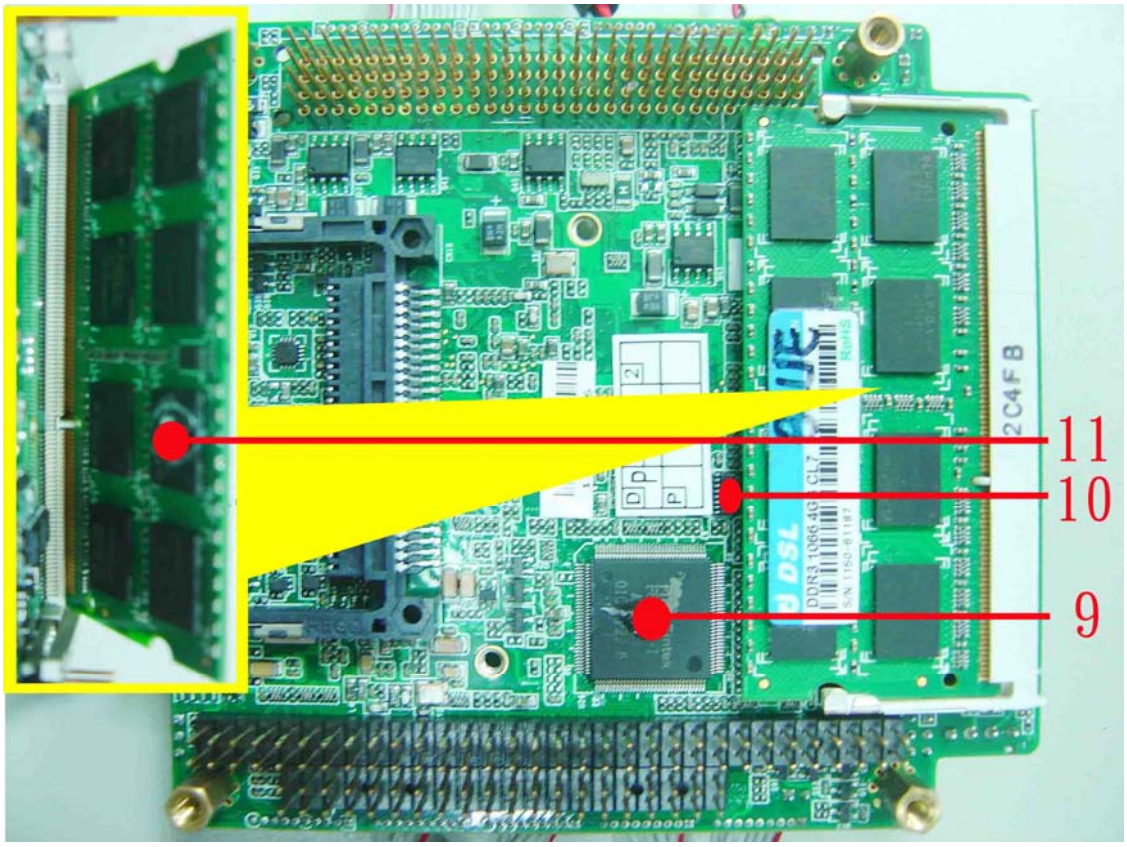
Terminal Recorder:

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
				25.1℃	60℃	
1	U13	(TF)AMD.A55E.100-CG2293	105	48.9	83.8	
2	U2	(TF)AMD APU.G-series.615MHz. GET16RFWB12GV.T16R	90	52.3	87.2	Note4
3	U55	(TF)Audio Codec.REALTEK.ALC892-GR	100.5	54.2	89.1	
4	U47	(TF)REG. LDO Regulator.UPI.UP0104PSU8	100	54.8	89.7	
5	U44	(TF)PCI to ISA Bridge Chip.ITE.IT8888G-L	85	51.0	85.9	Note4
6	U29	(TF)RS232 Driver ESD 15KV.AD.ADM213EARSZ	100	50.9	85.8	
7	U28	(TF)RS232 Driver ESD 15KV.AD.ADM213EARSZ	100	50.8	85.7	
8	U11	(TF)Gigabit Ethernet Chip.REALTEK.RTL8111E-VB-GR	85	47.4	82.3	Note4
9	U26	(TF) Super I/O.Fintek.F81866D-I	127	50.3	85.2	
10	U3	(TF) VGA ESD Protection Array. Amazing.AZC209-07P	85	50.2	85.1	Note4
11	-	Memory chipset	95	53.3	88.2	Note4

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. E120807LABD02

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