PFM-CVS

A0.2

Thermal Image Analysis Report

Summary	☑ **Pass** ☐ **Fail** ☐ **Pass with Deviation** **Comment: Temperature at 6 components were estimated to be in marginal temperature points in comparion with component datasheets.**

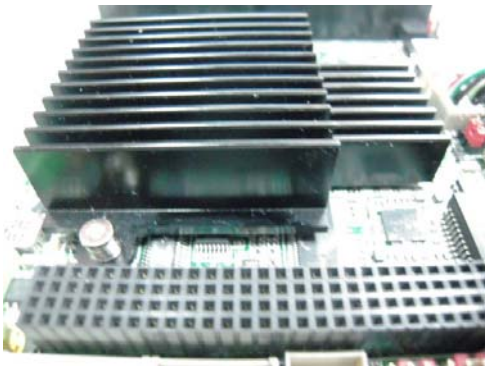
Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	6
Defect Unsolved	0	0	0	6

Issue date	Approval	Test Engineer
2012 / 03 / 30	Wayne Chen	Clement Chien

Sample Configuration & Quantity Under Test

- **Model name :** PFM-CVS
- **CPU :** Intel Atom N2600 / 1.6GHz
- **Chipset :** Intel CedarView+NM10
- **Memory :** DSL 2G DDR3 1333 CL9 wide temp.
- **HDD :** TOSHIBA 2.5” SATA 2 160G- MK1665GSX
- **BIOS :** PFM-CVS PFCVAT0A
- **Test Software :** Windows 7 / Run PassMark Burn In Test 7.0
- **Power :** AT Power
- **Heat Sink:**



Thermal Image Analysis

1. Test Date: 2012-03-29

2. Test Product: PFM-CVS

3. Test Site: AAEON Internal Lab.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 YOKOGAWA Inc,

4.2.2 Model: DA100-13-1D

Date of Calibration: 2011/10/12

Serial Number: 12A323190

4.2. IR Scanner: Infrared Camera

4.2.1 NIPPON AVIONICS CO., LTD.

4.2.2 Model: TVS-100

Date of Calibration: 2011/07/11

Serial Number: 0179L2746

5. Test Condition:

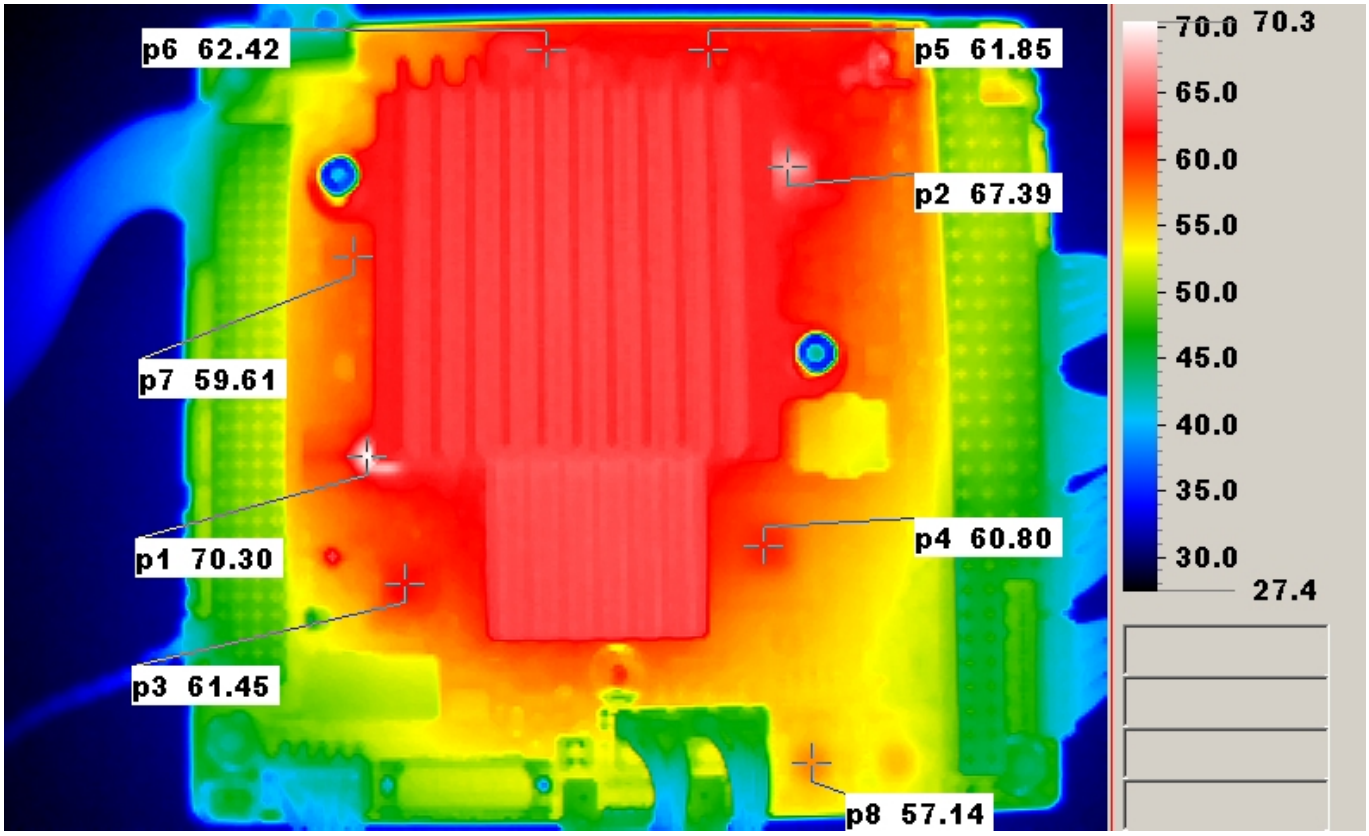
Component Side-1 (Test by DA-100): 25.0℃ With Heat Sink

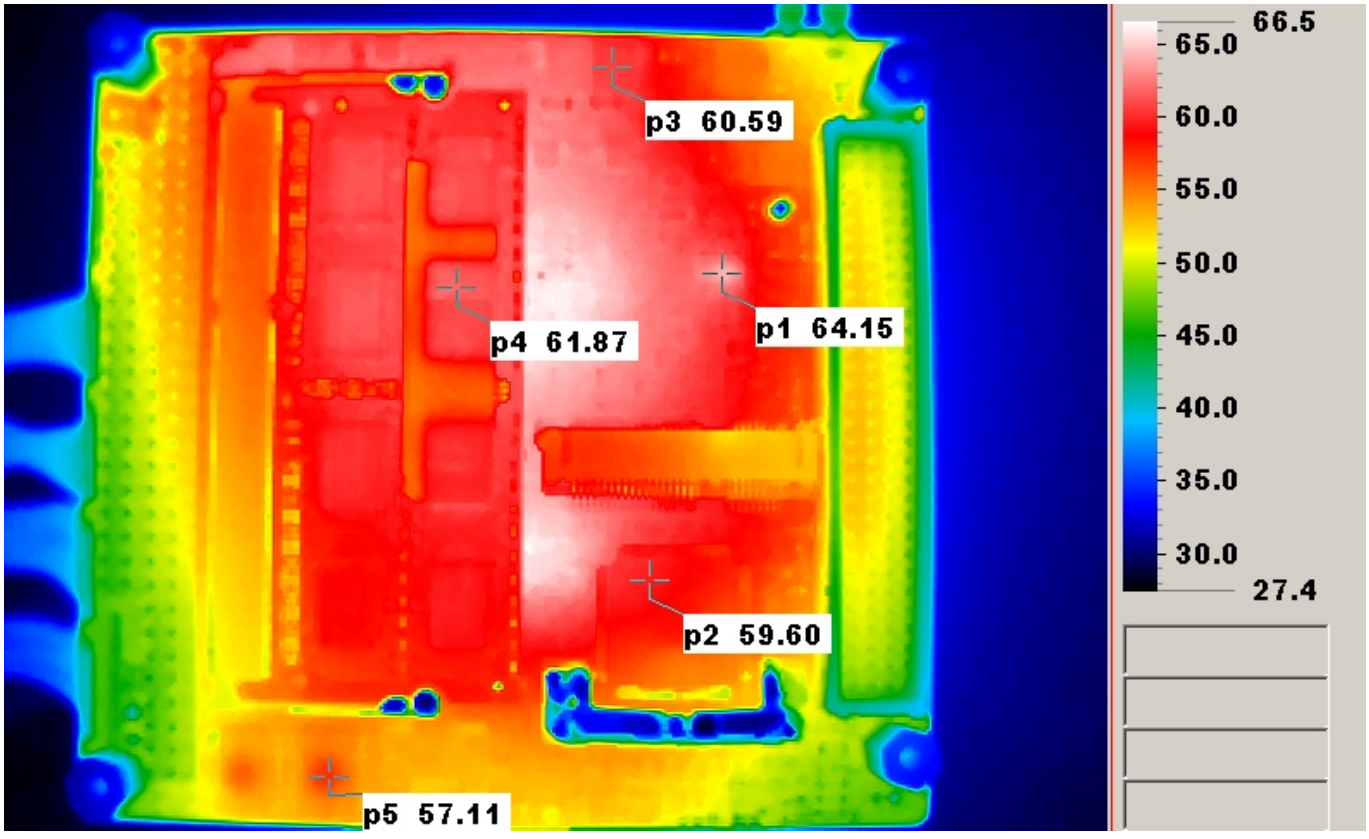
6. Take Picture Time:

After power on 2 hours

Temperature Profile Test:

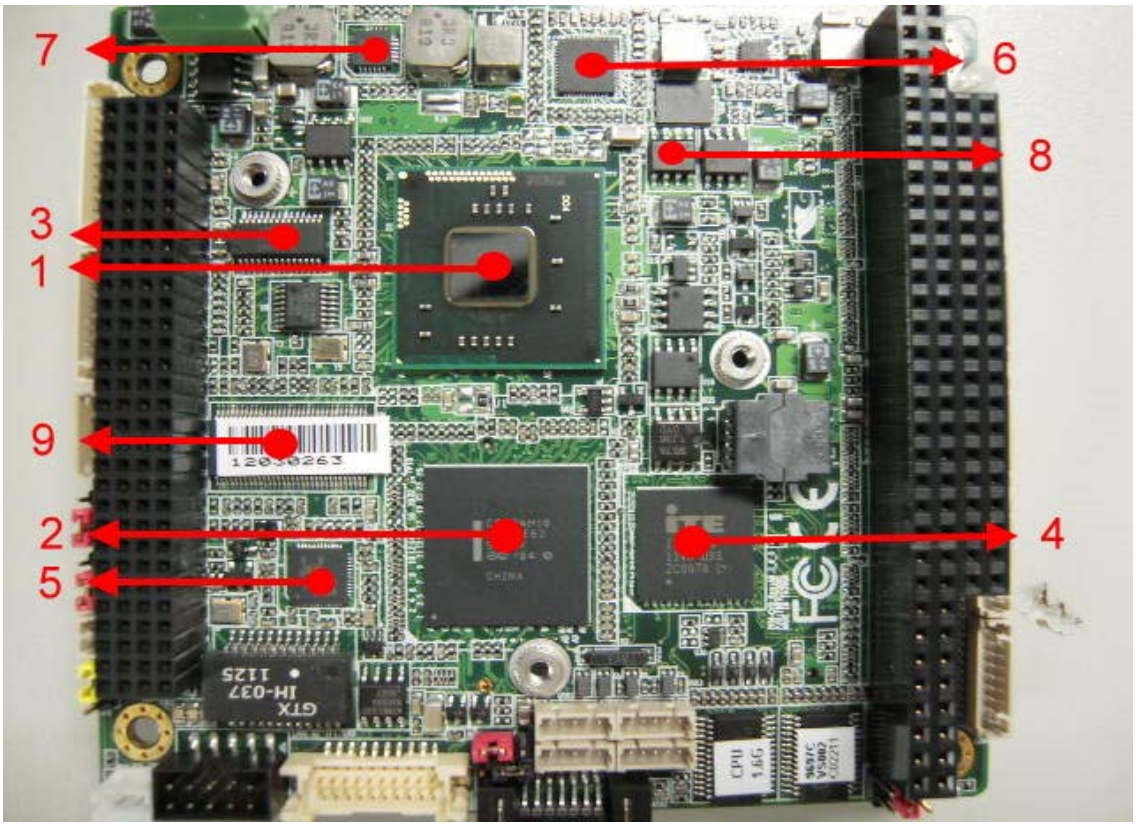
Component Side:

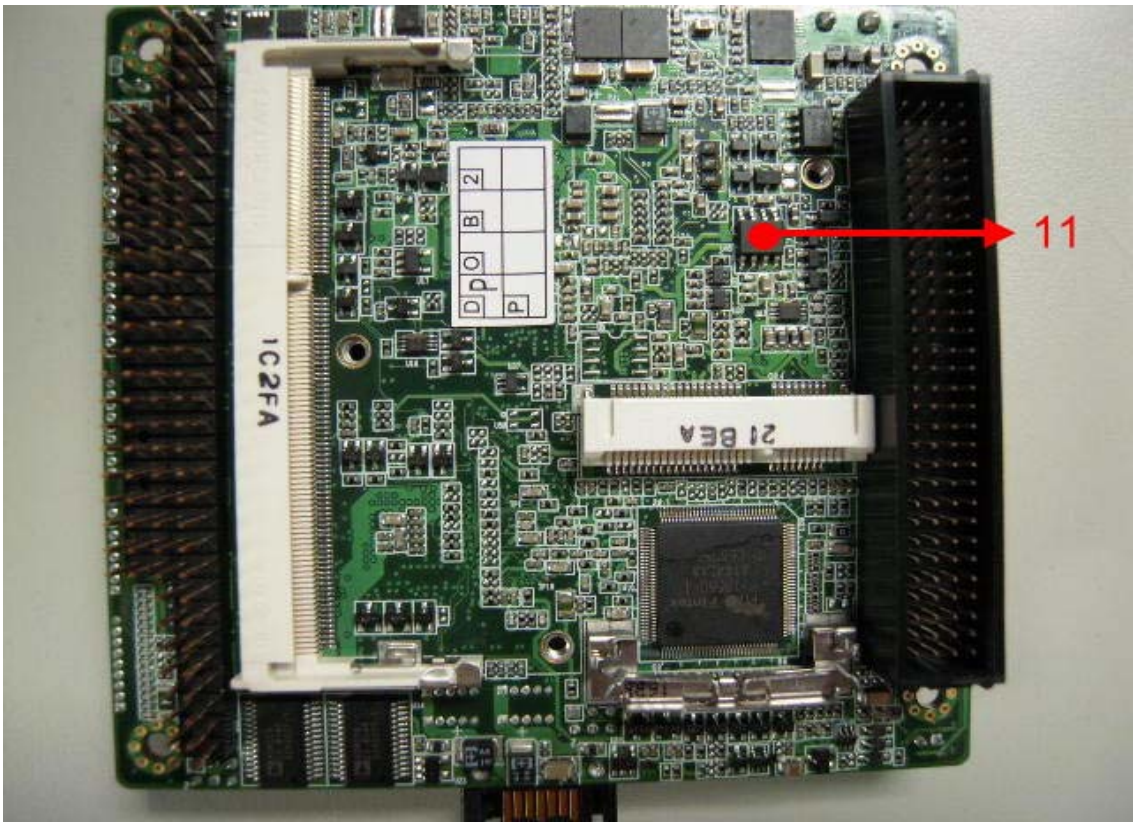




Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	60℃	
1	U1	(TF)INTEL.Cedarview CPU.FCBGA 559 pin.1.6Ghz.N2600.	100	58.3	93.3	
2	U2	(TF)NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	66.6	101.6	
3	U25	(TF)Extended PCI Arbiter Buffer.ITE.IT8209R	85	54.0	89.0	
4	U58	(TF)PCI to ISA Bridge Chip.ITE.IT8888G-L	85	54.3	89.3	
5	U56	(TF)PCI-express.Gigabit Ethernet Chip.REALTEK.RTL8111E-VB-GR	85	50.9	85.9	
6	U47	(TF)IMVP7.Dual Single-Phase PWM.Richtek.RT8167AGQW	100	54.9	89.9	
7	U38	(TF)DUAL SYNCHRONOUS STEP-DOWN CON.TI.TPS51123RGER	100	50.5	85.5	
8	U44	(TF)PWR.P-Channel.-12V.-11A.25mΩ.MOSFET.AOS.AO4437	105	57.0	92.0	
9	U4	(TF)CLOCK GENERATOR.IDT.9LPRS501PGLF	115	63.0	98.0	
10	Memory	DSL DDR3 1066 2GB CL9 wide temp.	95	58.8	93.8	
11	U45	(TF)Low dropout Linear Regulator.GMT.G9731F11U	100	56.3	91.3	

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.