NanoCOM-CV

B1.0

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature at 8 components were estimated to be in marginal temperature points in comparion with components datasheets.**

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	8
Defect Unsolved	0	0	0	8

Issue date	Approval	Test Engineer
2012 / 11 / 12	Tom Lin	Clement Chien

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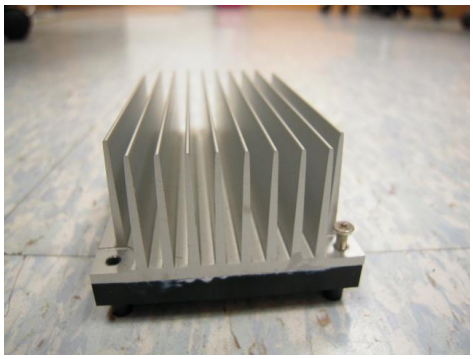
Sample Configuration & Quantity Under Test

- **Model name :** NanoCOM-CV
- **CPU :** Intel Cedarview CPU N2600 / 1.6GHz
- **Chipset :** NM10 Express Chipset INTEL CG82NM10 SLGXX
- **Memory :** DDR3-SDRAM.256Mx8.1.5V.SAMSUNG.K4B2G0846D-HCH9
- **SATA HDD :** Seagate 5VGBKCDQ 2.5” 160GB
- **BIOS :** NanoCOM-CV R0.4
- **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: 2012-11-09

2. Test Product: NanoCOM-CV

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

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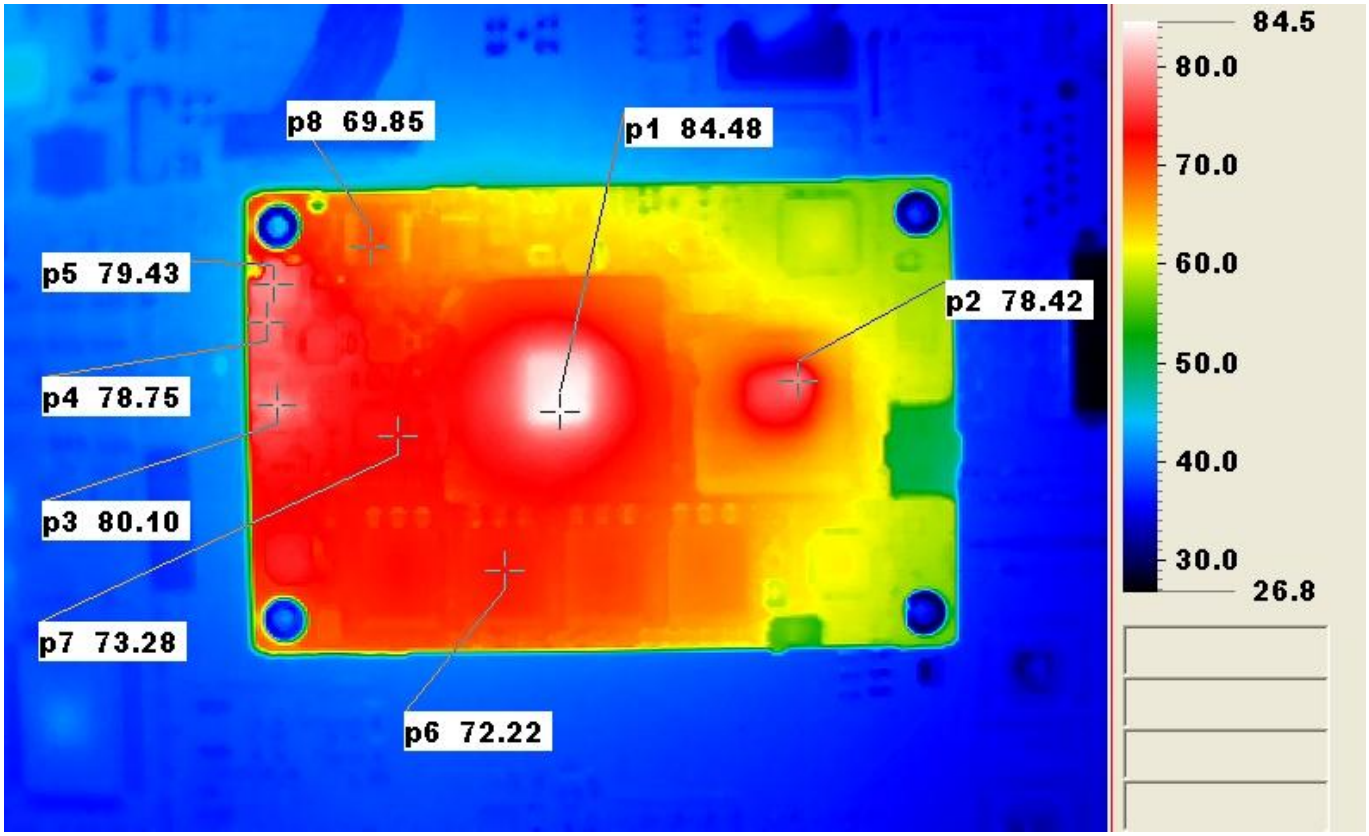
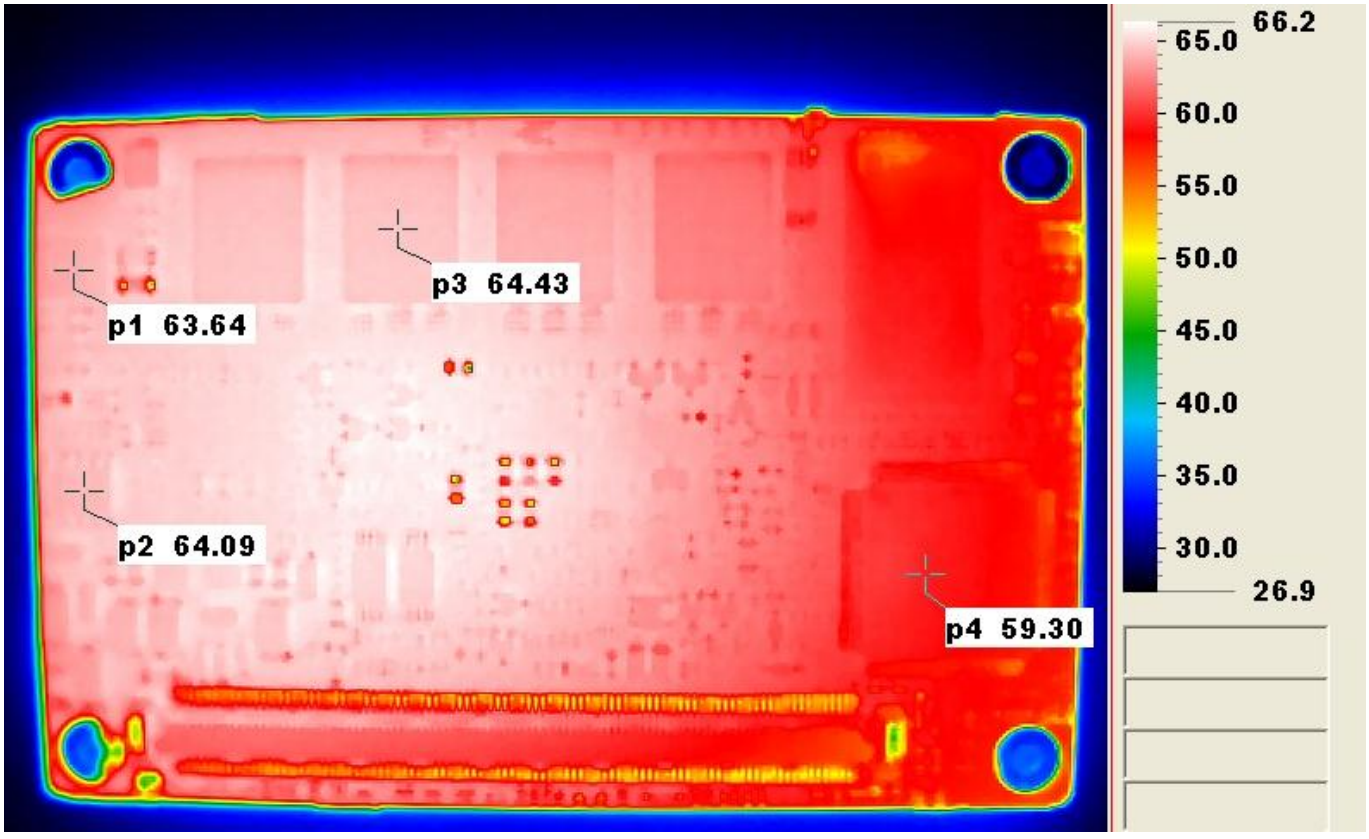
Temperature Profile Test:

Component Side:





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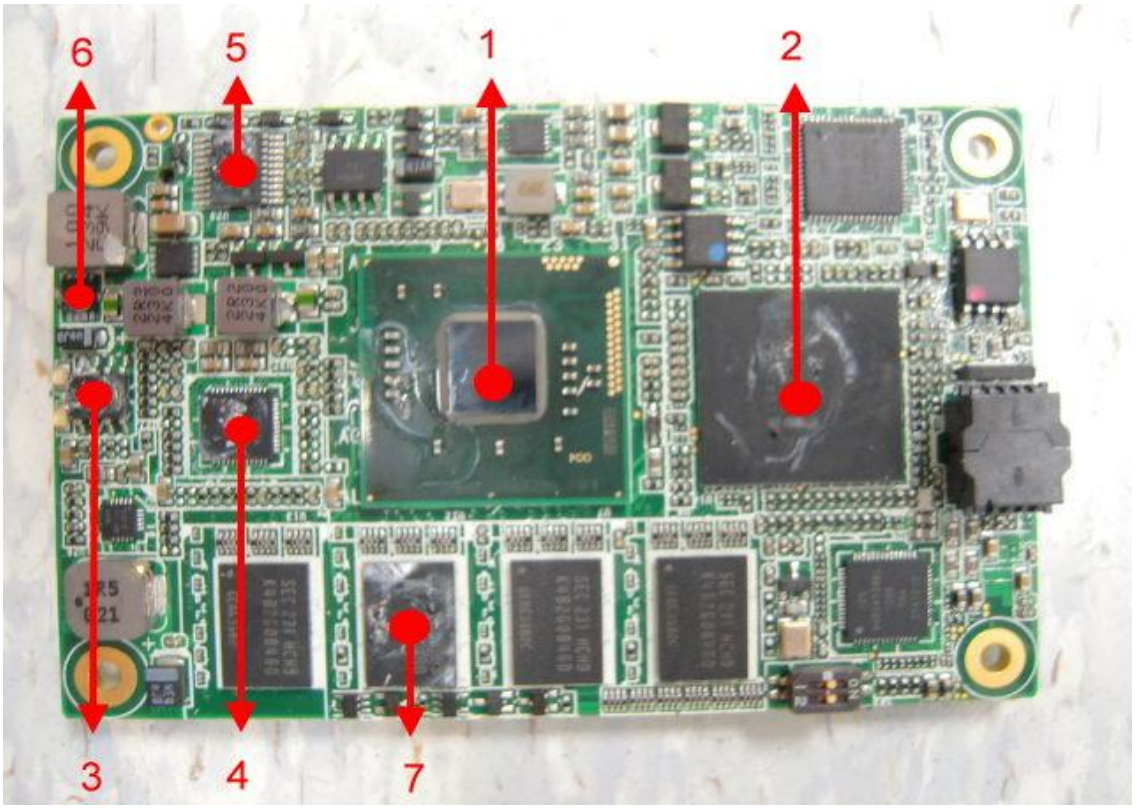
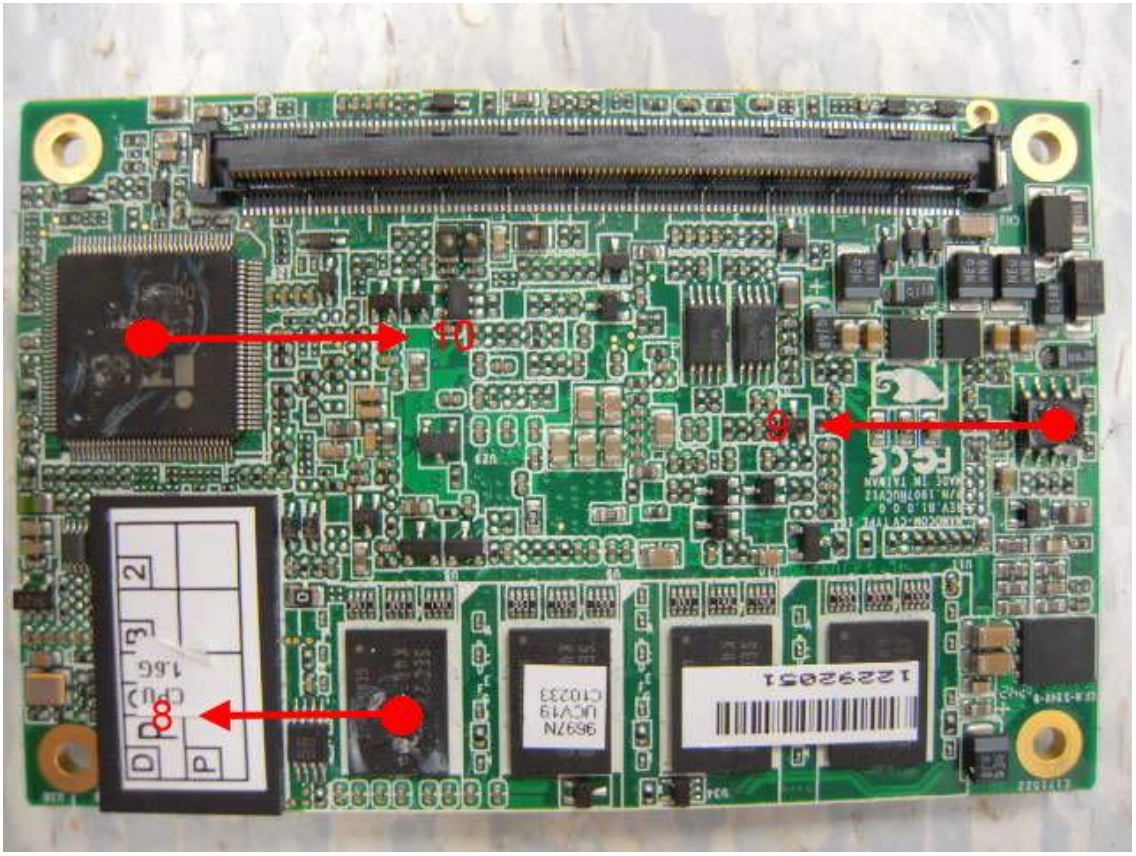
Terminal Recorder:

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℃	55℃	
1	CPU	(TF)INTEL.Cedarview CPU.1.6GHz.N2600.	100	57.4	92.4	
2	U1	(TF)NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	55.5	90.5	
3	U27	(TF)4A.0.33V.Low dropout Linear Regulator.GMT.G9731F11U	100	61.6	96.6	
4	U32	(TF) 6x6.IMVP7.Dual Single-Phase PWM.Richtek.RT8167AGQW	100	61.1	96.1	
5	U28	(TF) PWM Controller.TSSOP-20EP.TI.LM25118MHX	100	59.2	94.2	
6	D25	(TF)D Schottky.VDC=40V.3A. Barrier Rectifiers.Willas.SK34A	100	61.4	96.4	
7	Memory	(TF)DDR3-SDRAM.256Mx8.1.5V.SAMSUNG.K4B2G0846D-HCH9	95	50.9	85.9	
8	Memory	(TF)DDR3-SDRAM.256Mx8.1.5V.SAMSUNG.K4B2G0846D-HCH9	95	52.1	87.1	
9	Q22	(TF)PWR.P-Channel.-12V.-11A.25mΩ.MOSFET.AOS.AO4437	125	63.2	98.2	
10	U21	(TF)Embedded Controller.ITE.IT8518E-L	100	59.8	94.8	

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.

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