NanoCom-U15

Intel Menlow COM Express CPU Module

Thermal Image Analysis Report

Report NO: 10E080002

2010/03/05	*Jansin Lee*	*Anderson Lin*
Issue Stamp	**Sr.Manager**	**Test Engineer**

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Thermal Image Analysis

Ⅰ. Model Name: NanoCom-U15 Rev:A1.2

Ⅱ. Description: Intel Menlow COM Express CPU Module

Ⅲ. Date: 2010/03/05

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Anderson Lin

Ⅵ.Equipment:

PR1000(TH-046)

Ⅶ. Simulation Environment:

- **Temperature: Component Side-1 : 26.6℃ , Component Side-2 : 26.4℃**
- **CPU : Intel(R) Atom(TM) CPU Z530 1.6GHz**
- **RAM : Onboard 1024MB Memory**
- **BIOS : COM-u15/NANO com-u15 bios rev 2.0 (01/11/2010)**
- **CF Card : N/A**
- **HDD : Onboard SST SSD 4GB**
- **Application Software: Run Prime95 under Windows XP Professional Service Pack 3**
- **Take Picture Time: After Power on 2 hours.**

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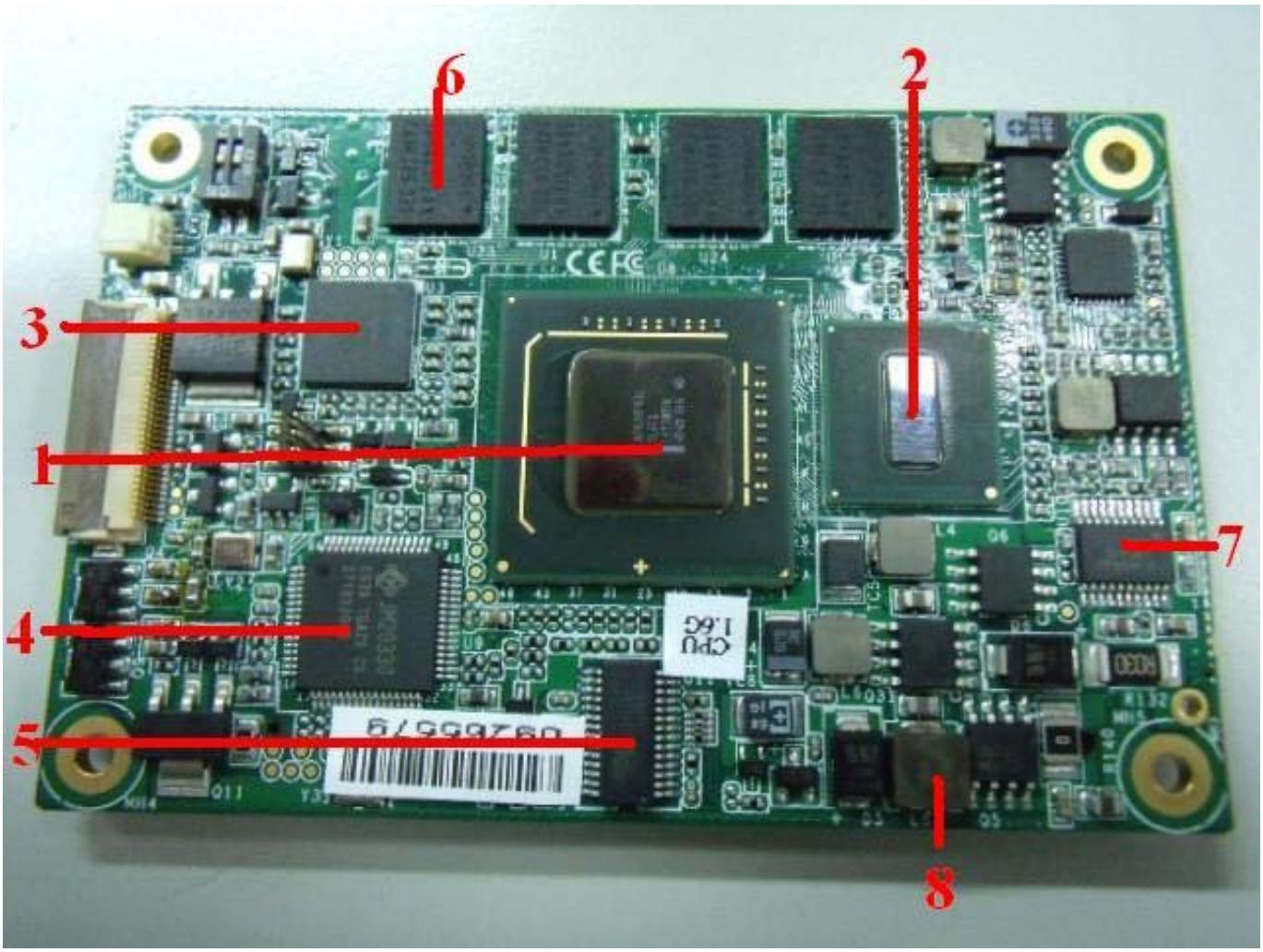
Temperature Profile Test:

Component Side-1:



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Point	Position	Describe	Tc (℃)*1	Tm*2 Measured Under		Note
				26.6℃	60℃	
1	U8	(TF)IC.SMD.Chipset SCH.Poulsbo.INTEL.AF82US15W SLGFQ	90	56.3	89.7	(*3)
2	U7	(TF)INTEL CPU.Silverthorne.1.6GHz/533.AC80566UE025DW SLB6P	90	61.0	94.4	(*3)
3	U3	(TF)IC.SMD.CP 132P.CoolRunner-II CPLD.USER NB:380A.Power Control.Xilinx.XC2C128-7CPG132C	115	59.2	92.6	
4	U9	(TF)IC.SMD.TQFP64P.SATAtoIDE/ATA Chip.JMicron.JM20330APC0-TGCA	115	65.6	99	
5	U11	(TF)IC.SMD.SSOP 28P.WatchDog.Fintek.F75111RG	115	60.4	93.8	
6	U23	(TF)IC.SMD.DDRII-SDRAM.128Mbx8(bit).800MHz.FBGA 60P.1.8V.SAMSUNG.K4T1G084QE-HCF7000	125	53.1	86.5	
7	U10	(TF)IC.TSSOP-20EP.Buck-Boost PWMController.NS.LM5118MHX	125	65.6	99	
8	L5	(TF)INDUCTOR.10uH.20%.SMD.5.18*5.49*3mm.DCR=146mOhm.Isat 4A.VISHAY.IHLP2020CZER100M01	155	56.0	89.4	

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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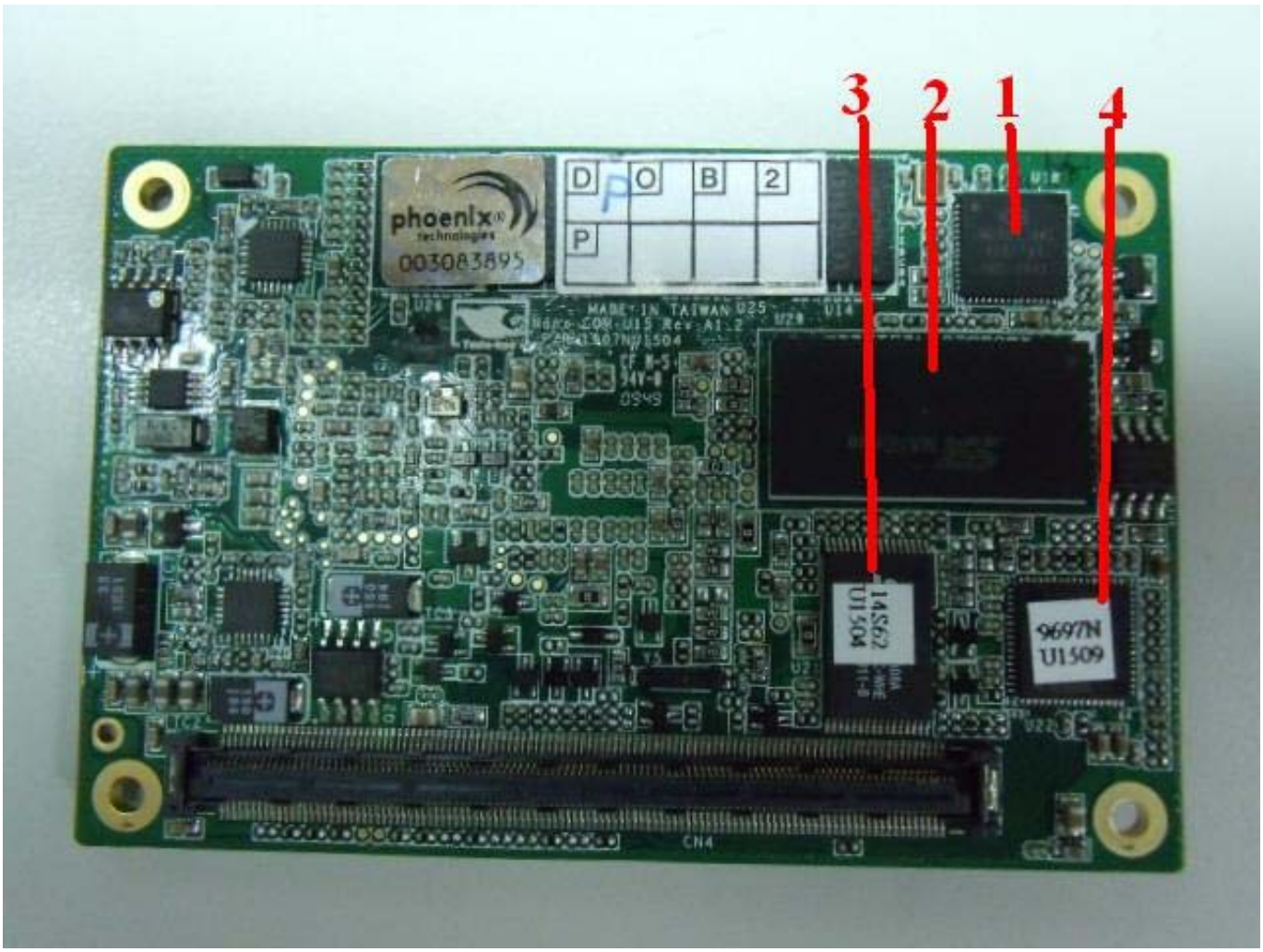
Component Side-2:



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Point	Position	Describe	Tc (℃)*1	Tm*2 Measured Under		Note
				26.4℃	60℃	
1	U18	(TF)IC.SMD.MLF 56P.Clock Generator.IDT.ICS9UMS9001AKLFT	100	59.2	92.8	(*3)
2	U29	(TF)IC.SMD.LBGA91P.PATASSD 4G.SST.SST85LD1004T-60-RI-LCTE	115	60.0	93.6	
3	U21	(TF)Flash PLCC BIOS.1024K.CS:F97Ch.COM-U15/NANO COM-U15.Rev.1.31.for Legacy Free.	115	61.6	95.2	
4	U22	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	100	62.2	95.8	(*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.

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