Report NO: 10E080015

EMB-LN9T

Thermal Image Analysis Report

Summary	☑ **Pass** ☐ **Fail** ☐ **Pass with Deviation** **Comment:** _____

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	Approval	Test Engineer
2010/10/7	Jansin Lee	Nisam Jone

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Sample Configuration & Quantity Under Test

- **CPU Board: EMB-LN9T A0.2**
- **Carrier Board:N/A**
- **CPU: Intel Atom D510 1.66GHz**
- **Memory: A-DATA DDR2 800 SODIMM 1GB (A-DATA AD29608A8A-25EG)**
- **HDD: WD(Western Digltal) WD WD800AAJS 80GB**
- **BIOS : AMI 4.6.3.7 ELN9T 1.10 x64 09/09/2010**
- **Test Software: Windows XP sp3 / Run Prime95 v25.11**
- **ATX Power Supply: Seventeam ST-350BKV 350W**
- **Cooler:**

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Thermal Image Analysis

1. Test Date: 10/07/2010

2. Test Product: EMB-LN9T

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:
   1. GRAPHTEC midi LOGGER TYPE - GL200
   2. IR Scanner: Infrared Camera
      NIPPON AVIONICS CO., LTD.
      Model: TVS-100
      Date of Calibration: 09/17/09
      Serial Number: 0179L2746

5. Test Condition:
   Component Side-1 (Test by TVS-100 & TH-046): 25.6℃ With cooler
   Component Side-2 (Test by TVS-100): 25.6℃ With cooler

6. Test Software:
   Windows XP sp3 / Run Prime 95 v25.11

7. Take Picture Time:
   After power on 2 hours

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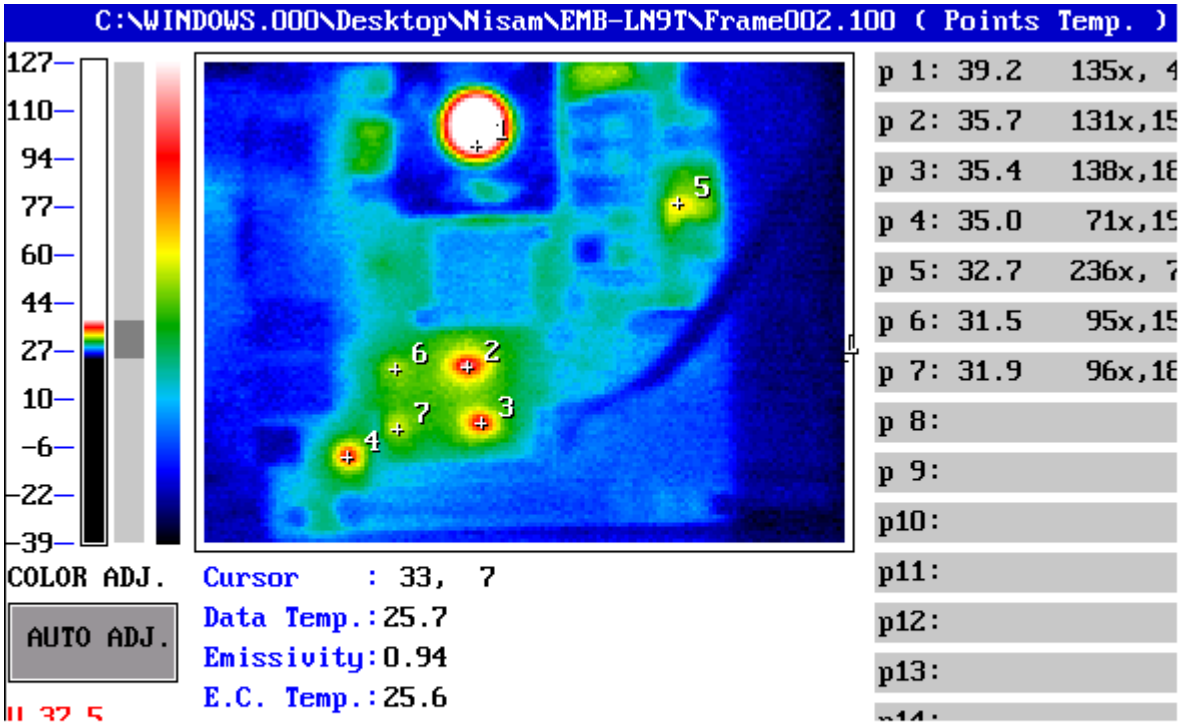
Temperature Profile Test:

Component Side-1:



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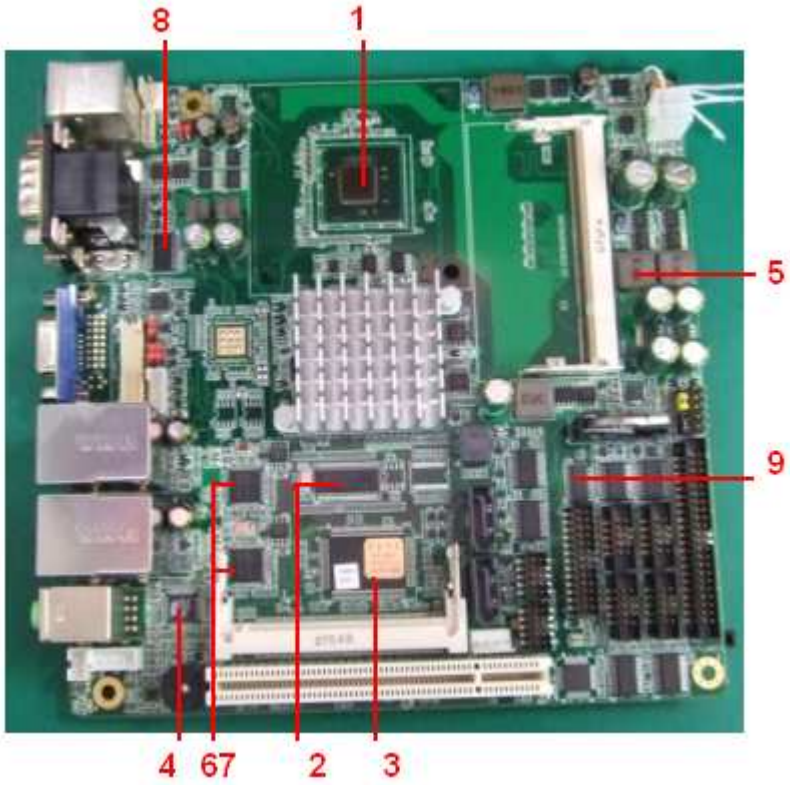

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.6℃	60℃	
1	U28	(TF)Intel CPU.Pineview D.DUAL CORE.D510.1.66GHz.Micro-FCBGA8.559Pins.AU80610004392A A SLBLA;EE-A100346;14S4166012;TWN	125	55.8	90.2	
2	U26	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR.IDT.9LPRS501PGLF;EE-A081777;14S3050100;TW N	100	38.4	72.8	
3	U27	(TF)IC.SMD.PQFP 128P.LPC Super I/O.Winbond.W83627UHG	100	39.2	73.6	
4	U9	(TF)IC.SMD.LQFP 48P.7.1Channel HD Audio Codec.VIA.VT1708B	105	32.8	67.2	
5	L39	(TF)COIL.3.3uH.20%.SMD.11.5x10.5x4.0mm.DCR=10.8m ohm.Idc=10Amp.ZenithTek.ZPWM-1040MB-3R3M	155	35.4	69.8	
6,7	U16,U17	(TF)IC.SMD.QFN.64P.PCI-express.Gigabit Ethernet Chip.REALTEK.RTL8111C-VB-GR	100	33.0	67.4	
8	U6	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ	115	31.9	66.3	
9	U39	(TF)IC.SMD.QSOP 28P.IEEE 1284 Termination Network.CMD.PACSZ1284-04QR	115	31.9	66.3	

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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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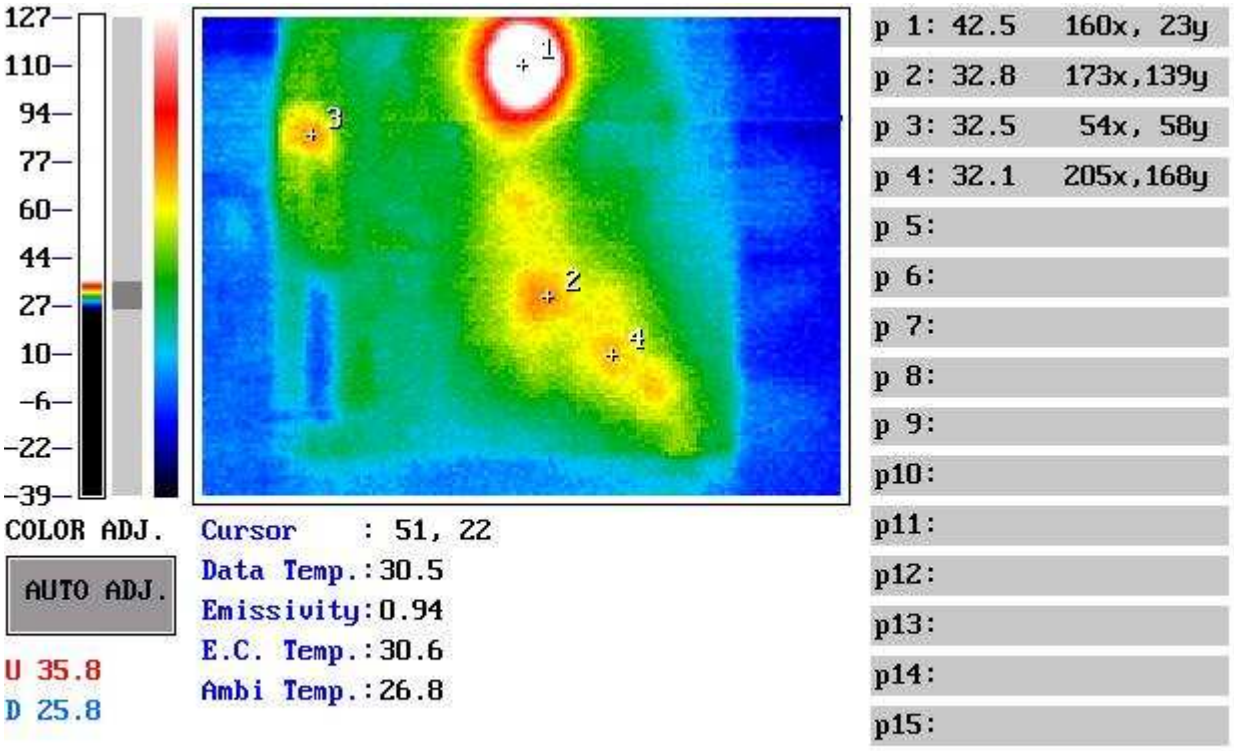
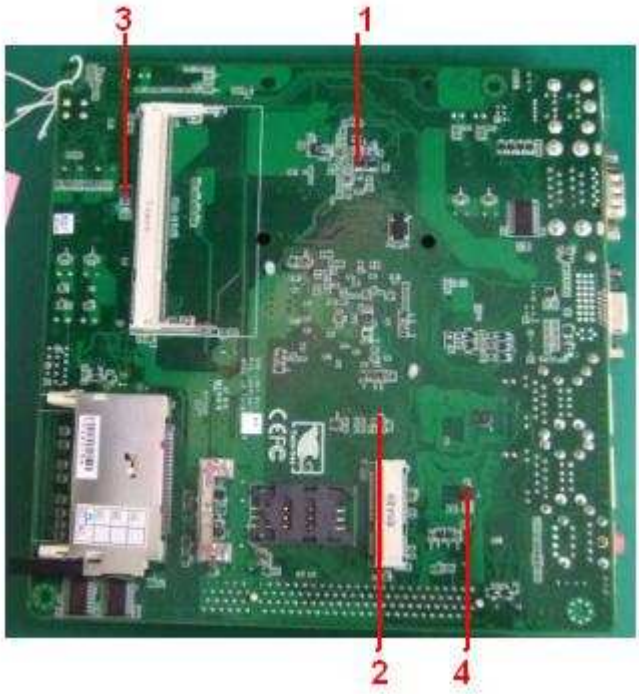
Component Side-2:





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Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.6℃	60℃	
1	C452	(TF)POSCAP.330uF.2.5V.20%.C2(6*3.2*1.8).12mohm.3300mA.SMD.SANYO.2R5TPE330MCC2	135	42.5	76.9	
2	C427	(TF)MCC.10uF.10V.20%.X5R 0805.SMD	115	32.8	67.2	
3	C572	(TF)POSCAP.330uF.2.5V.20%.C2(6*3.2*1.8).12mohm.3300mA.SMD.SANYO.2R5TPE330MCC2	135	32.5	66.9	
4	L44	(TF)COIL.4.7uH.20%.SMD.3.85x3.85x1.8mm.DCR=146Ω IDC=1.1A.ZenithTek.ZSJ-3020S-4R7M	135	32.1	66.5	

Note(*):

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3. Judgment Criteria:

- **Fail** : Tm > Tc+5℃; The measured value is over specification plus margin.
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- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

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