ReportNO: 11E080001

ETX-LN

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: <u>One temperature point need improving</u>**

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

Issue date	Approval	Test Engineer
2011 / 02 / 15	Jansin Lee	Allen Hsu

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Sample Configuration & Quantity Under Test

- **Model name : ETX-LN**
- **CPU Board: ETX-LN A0.2**
- **Carrier Board: ECB-902M A1.0**
- **CPU: Intel(R) Atom(TM) CPU D525 1.8GHz**
- **Memory: Kingston 4GB / SAMSUNG K4B2G0846B HCF8 / DDR3 SO-DIMM 1066**
- **HDD: SST SSD 4GB – SST85LD1004T**
- **BIOS : Bios Ver 0.48**
- **Test Software: Windows XP sp3 / Run Prime95 v25.6.2**
- **ATX Power : Delta ATX Power 350W GPS-350EB-102A**
- **Cooler:**

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Thermal Image Analysis

1. Test Date: 2011-02-15

2. Test Product:ETX-LN

3. Test Site: AAEON Internal Lab.

4. Temperature Measurement:

1. YOKOGAWA / DARWIN DA100-100-13-1D

2. IR Scanner: Infrared Camera

NIPPON AVIONICS CO., LTD.

Model: TVS-100

Date of Calibration: 2010/08/10

Serial Number: 0179L2746

5. Test Condition:

Component Side-1 (Test by DA-100): 22.5℃ With cooler

6. Take Picture Time:

After power on 2 hours

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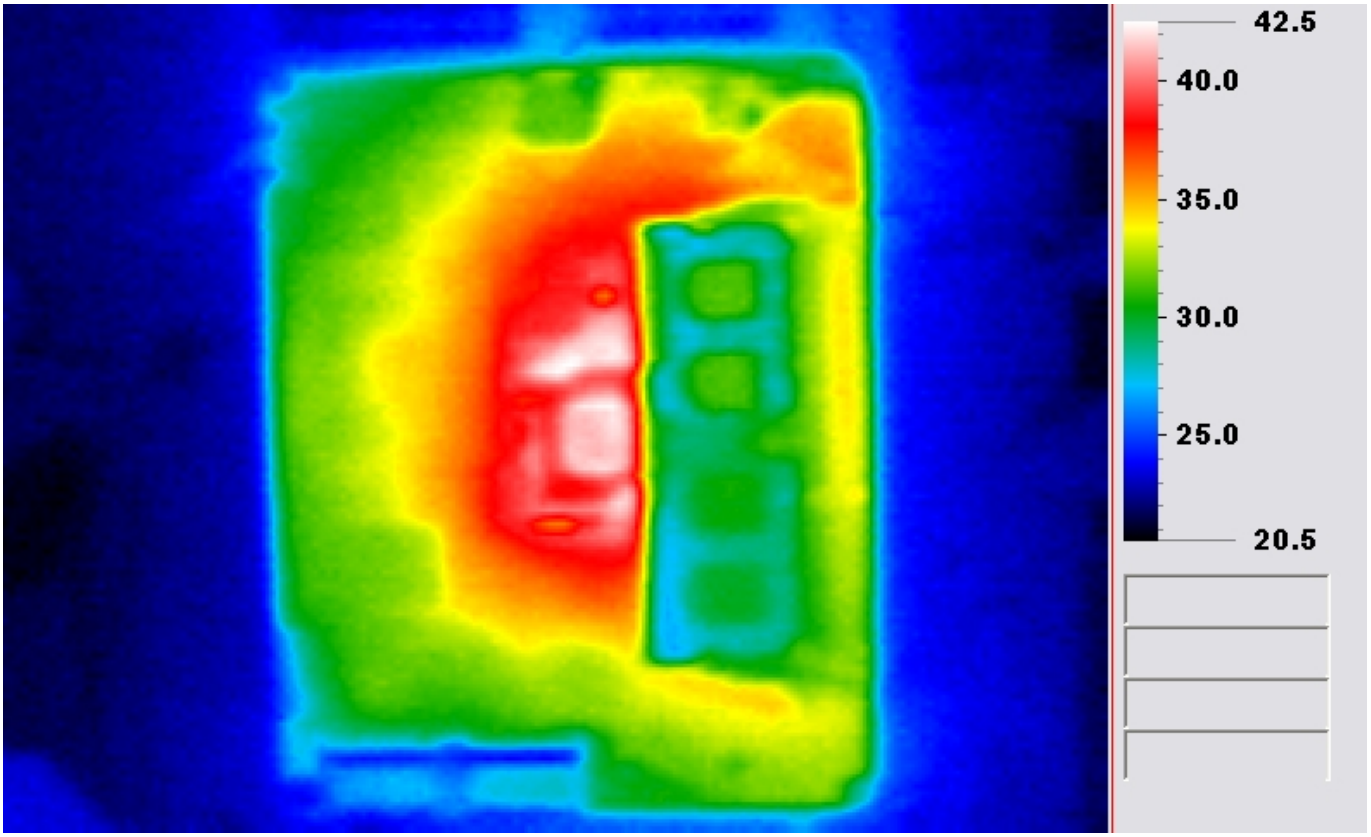
Temperature Profile Test:



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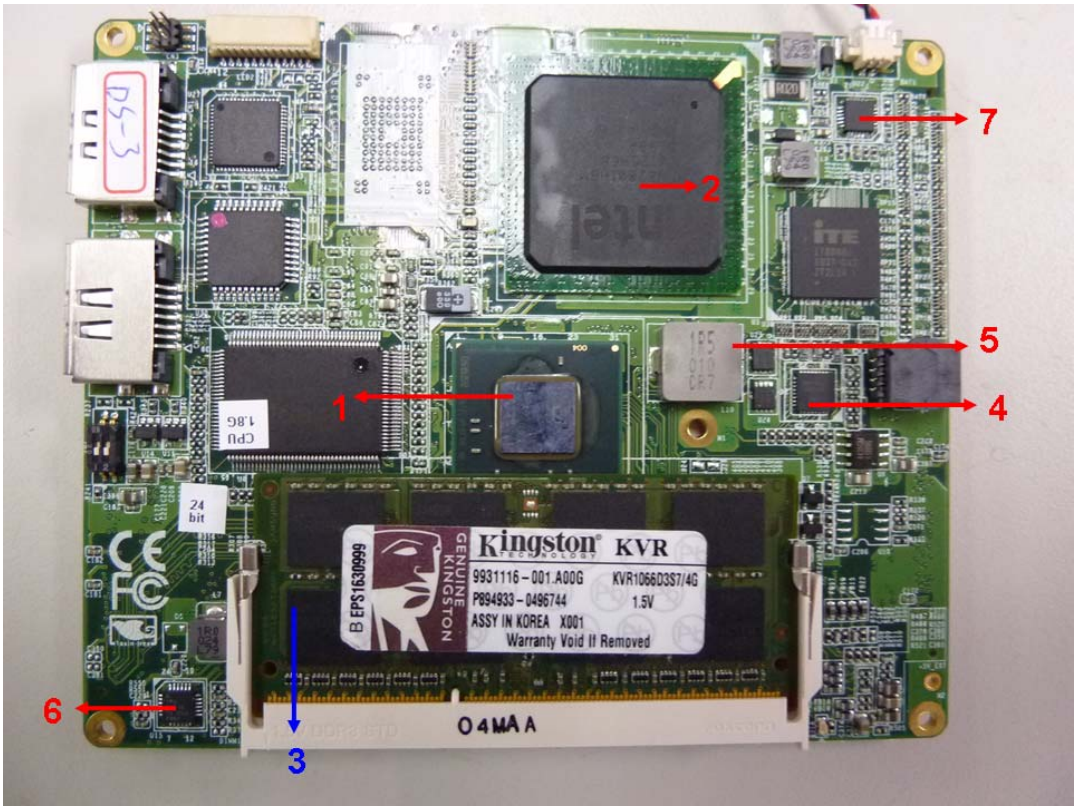

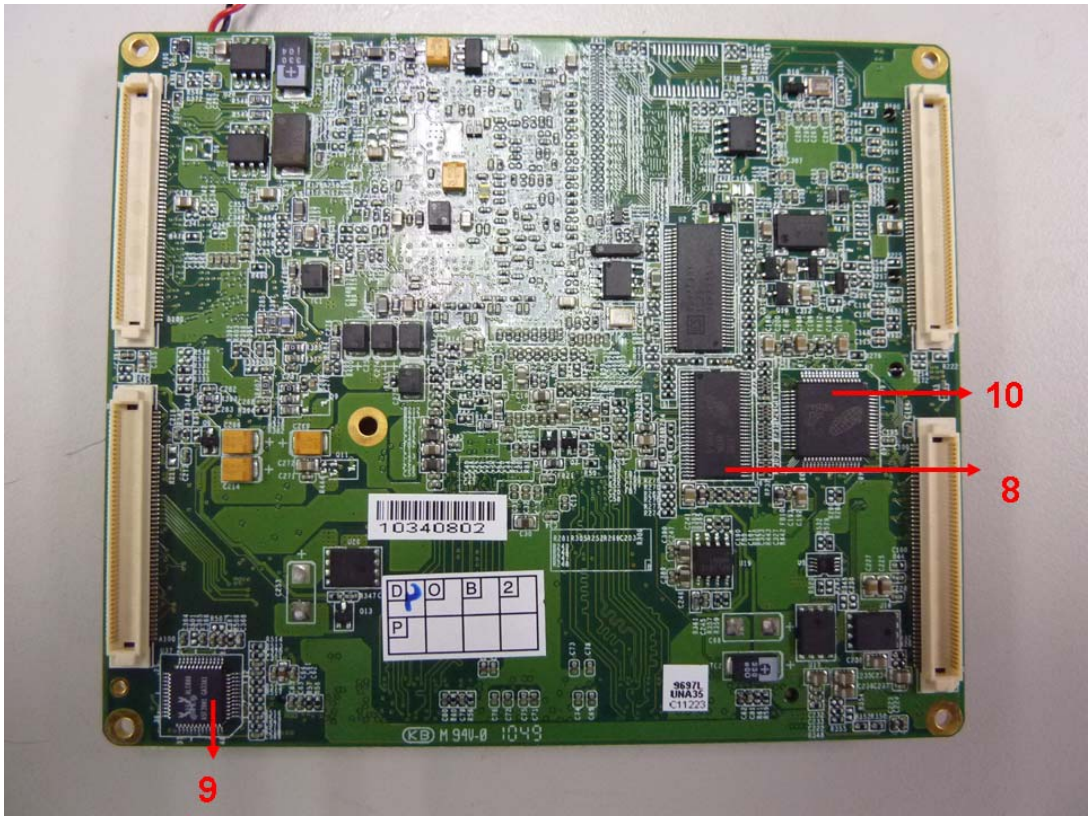

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Using YOKOGAWA / DARWIN DA100-100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				22.5℃	60℃	
1	U1	Intel CPU.Pinetrail D.DUAL CORE.D525.1.80GHz	100	41.7	79.2	
2	U3	IC.SMD.Chipset ICH8M.INTEL.NH82801HBM	105	30.3	67.8	
3	RAM	Kingston 4GB / SAMSUNG K4B2G0846B HCF8 / DDR3 SO-DIMM 1066	95	39.6	77.1	
4	U23	IC.SMD.QFN.32.VR11 Single Phase PWM.ON SEMI	100	44.8	82.3	
5	L10	COIL.1.5uH.20%.SMD.11.5x10.3x4.0mm.DCR=3.8m ohm	125	44.7	82.2	
6	U15	IC.SMD.VQFN 24P.DDR MEMORY POWER SOLUTION.SYNCHRONOUS BUCK CONTROLLER	110	37.5	75	
7	U22	IC.SMD.VQFN 24P.DUAL SYNCHRONOUS STEP-DOWN CON.TI	100	34.0	71.5	
8	U2	IC.SMD.TSSOP 64P.CLOCK GENERATOR.IDT	95	60.7	98.2	
9	U37	IC.SMD.LQFP 48P.7.1+2 Channel High Definition.Audio Codec.REALTEK	95	47.9	85.4	
10	U7	IC.SMD.LQFP 64Pin.3.3V.8~133MHz 10Bit LVDS.Transmitter	100	45.0	82.5	

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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