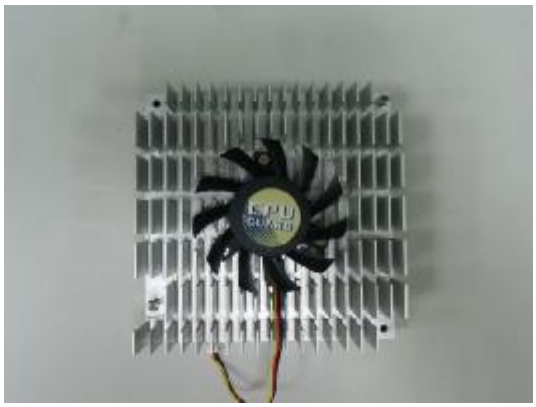
COM-LN

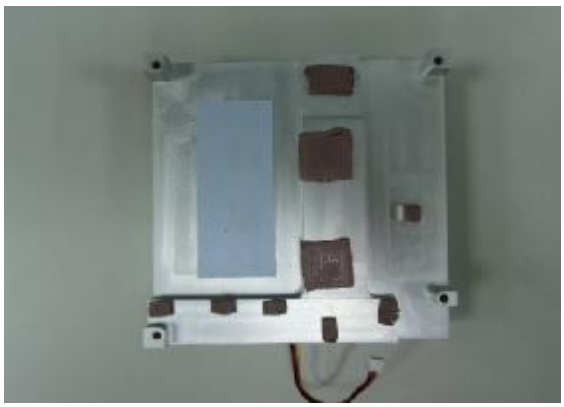
Thermal Image Analysis Report

Report NO: 10E080003

Sample Configuration & Quantity Under Test

- CPU Board: COM-LN Rev.A0.3
- Carrier Board:ECB-916M Rev.A0.2
- CPU: Onboard Intel Atom D510 Processor 1.66GHz
- Memory: Transcend DDR2 SO-DIMM 667 2GB & Apacer DDR2 SO-DIMM 667 2GB
- HDD: Seagate 2.5 SATA H.D / ST9120823AS /120GB /RPM:7200
- BIOS : CLN_D 0.92 x64
- Test Software: Windows XP sp3 / Run Prime95 v25.11
- ATX Power Supply: Delta 350W GPS-350EB-102A
- Cooler:





Test Result Summary

☐ **Pass**

☐ **Fail**

☑ **Pass with Deviation**

Comment: Please refer to U1

2010/03/15	*Jansin Lee*	*Allen Hsu*
Issue Stamp	**Manager**	**Test Engineer**

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Thermal Image Analysis

1. Test Date: 11-17-2009

2. Test Product: COM-LN

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:

1. YOKOGAWA PR1000(TH-046)

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): 25.1 ℃ With cooer

Component Side-2 (Test by TVS-100): 25.2 ℃ 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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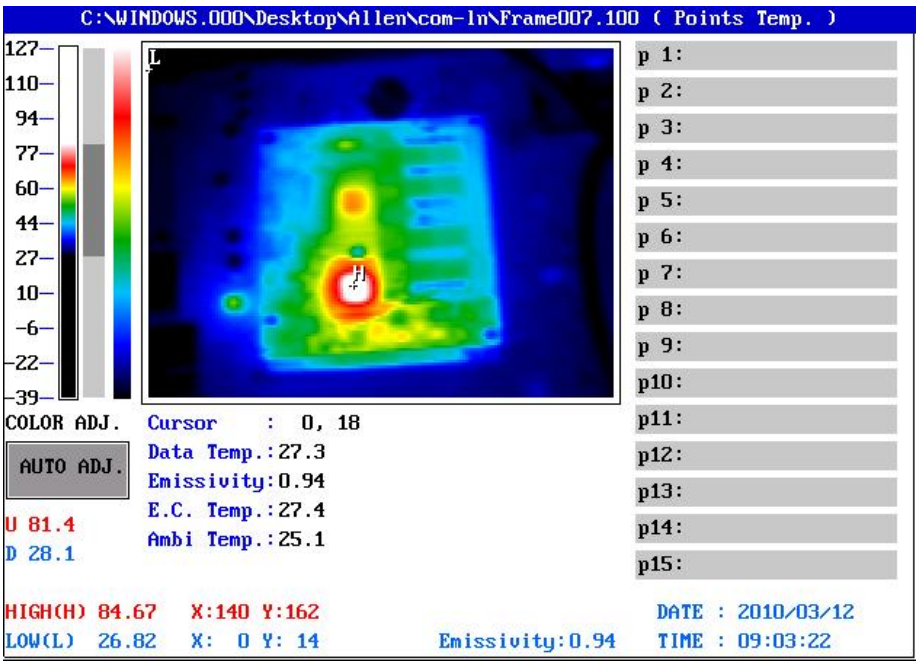
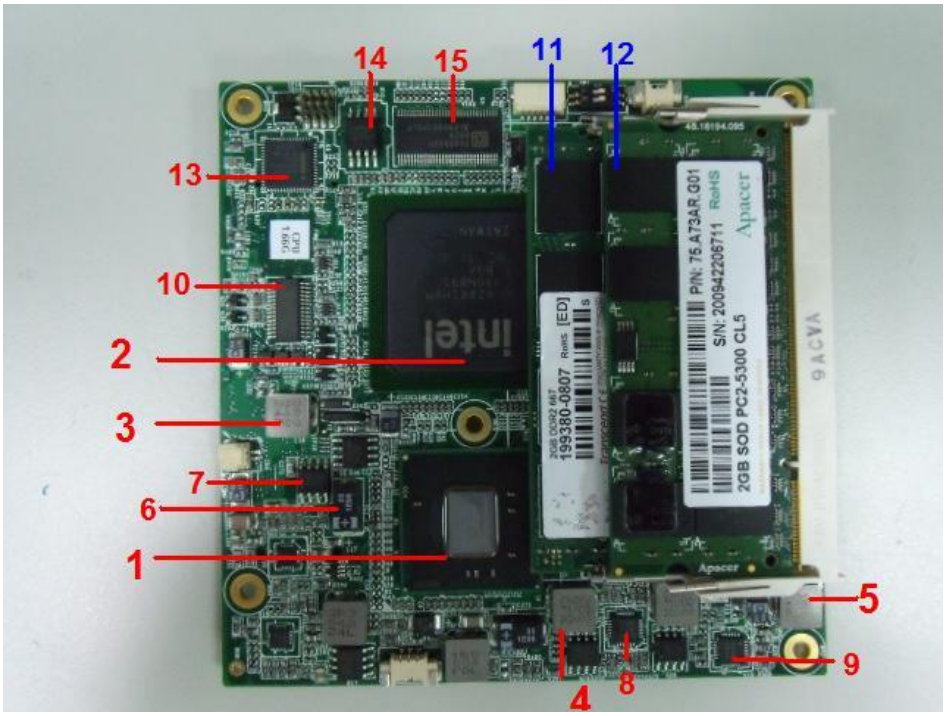
Temperature Profile Test:

Component Side-1:





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Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.1℃	60℃	
1	U1	(TF)Intel CPU.Pineview D.DUAL CORE.D510.1.66GHz.Micro-FCBGA8.559Pins.AU80610004392AA SLBLA;EE-A100346;14S4166012;TWN	100	63.9	98.8(*3)	
2	U5	(TF)IC.SMD.Chipset ICH8M.INTEL.NH82801HBM.SLB9A;EE-A081571;14S4280121;TWN	---	46.3	81.2	
3	L16	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28mohm.Irms=6Amp.GOTREND.GSTC063P-3R3MN;EE-A061509;121110336L;TWN	125	38.6	73.5	
4	L21	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN;EE-A081766;121110226C;TWN	125	42.7	77.6	
5	L18	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN;EE-A061520;1211000180;TWN	125	44.9	79.8	
6	TC7	(TF)POSCAP CAP.(15~47)uF.(16,20,25)V.20%.D2(7.3*4.3*1.9mm).SMD.SANYO.TQC Series;EE-A040664;118*6*****;TWN	105	52.8	87.7	
7	Q29	(TF)Dual N-Channel.SO-8.SMD.Vds=60V.Vgs=(+/-)25V.Ids=7/5A.Rds=21/27mohm.APEC.AP9975GM;EE-A071463;1315997510;TWN	125	51.9	86.8	
8	Q20	(TF)Dual N-Channel.SO-8.SMD.Vds=60V.Vgs=(+/-)25V.Ids=7/5A.Rds=21/27mohm.APEC.AP9975GM;EE-A071463;1315997510;TWN	125	61.5	96.4	
9	U18	(TF)IC.SMD MLPQ-24.DDR1/2/3 Memory Power Supply.Semtech.SC488MLTRT;EE-A081706;14S2048800;TWN	125	53.1	88.0	
10	U13	(TF)IC.SMD.SSOP 28P.WatchDog.Fintek.F75111RG;EE-A061692;14S4751100;TWN	115	41.7	76.6	
11	SO-DIM M2	Transcend DDR2 SO-DIMM 667 2GB - SEC 752 HCEG K4T1G08400	----	45.0	79.9	
12	SO-DIM M1	Apacer DDR2 SO-DIMM 667 2GB - Micron 9EE12 D9HNM	----	47.4	82.3	
13	U6	(TF)IC.SMD.QFN 56P.GigaBit Ethernet PHY.INTEL.WG82567V SLAW7;EE-A100374;14S4256701;TWN	115	34.3	69.2	
14	U10A	(TF)IC SKT.SMD.8Pin.SOIC.LOTES.ACA-SPI-004-K01;EE-A071654;1651900860;TWN	115	36.9	71.8	
15	U4	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR.IDT.9LPRS501PGLF;EE-A081777;14S3050100;TWN	125	35.2	70.1	

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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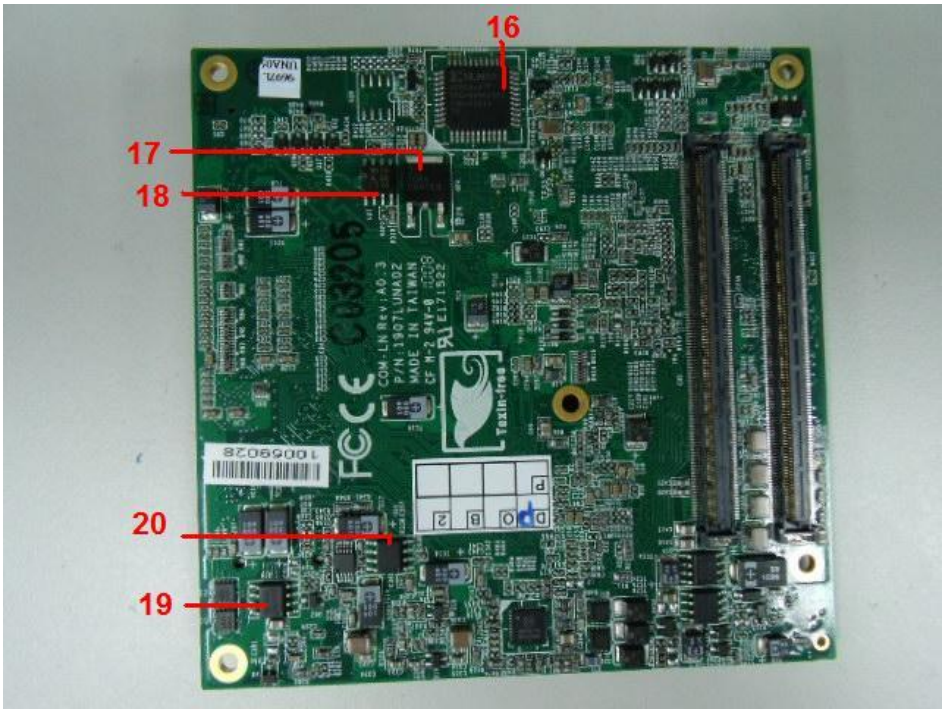
Component Side-2:



Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.2℃	60℃	
1	U9	(TF)IC.SMD.VQ44P.CoolRunner-II CPLD.Xilinx.XC2C64A-7VQG44C;EE-A091817;14S82C6400;TWN	120	39.5	74.3	
2	Q24	(TF)REG.SMD.TO-252 5A Linear Regulator.Diodes.AP1084DG-13;EE-A011431;1314108412;TWN	100	42.8	77.6	
3	U27	(TF)IC.SO8 SMD.Voltage Detecting.System Resetting IC.MITSUBISHI.M51957A;EE-A060753;14S4195710;TWN	----	41.1	75.9	
4	Q26	(TF)PWR.SMD SO-8.P-Channel 30V MOSFET.APEC.AP4435GM;EE-A030006;1315443510;TWN	125	45.0	79.8	
5	Q30	(TF)Dual N-Channel.SO-8.SMD.Vds=60V.Vgs=(+/-)25V.Ids=7/5A.Rds=21/27mohm.APEC.AP9975GM;EE-A071463;1315997510;TWN	125	51.8	86.6	

Note(*):

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- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

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