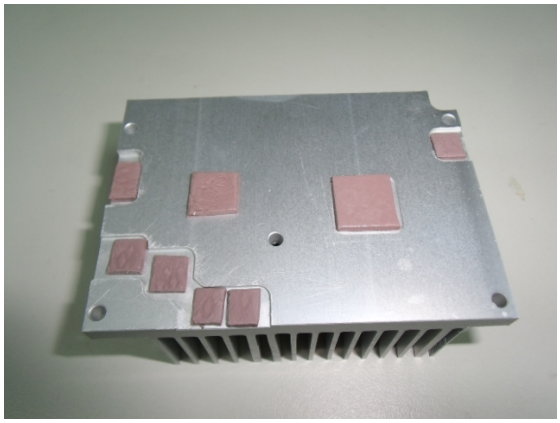
GENE-9315

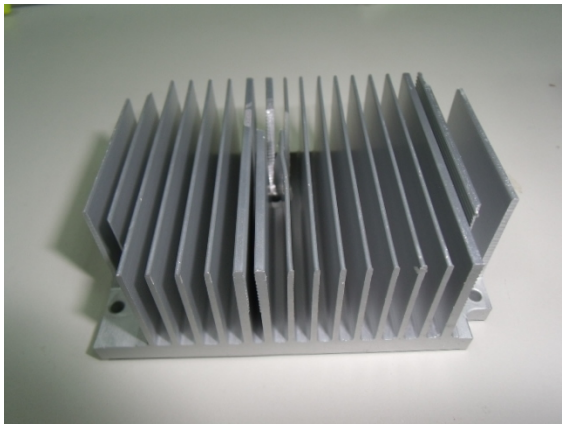
Thermal Image Analysis Report

Report NO: 09E080028

Sample Configuration & Quantity Under Test

- CPU Board: GENE-9315 A0.2
- CPU: Intel(R) Atom(TM) CPU N270 1.6GHz
- Memory: Kingston DDR2-667 KVR667D2S5/2G 2GB (ELPIDA E1108ACBG-6E-E)
- HDD: Seagate ST3160815AS 160GB
- BIOS : GENE-9315 BIOS Rev.1.0 (11/05/2009)
- Test Software: Windows XP / Run Prime95
- ATX Power Supply: AOpen FSP300
- Cooler:





Test Result Summary

☐ **Pass**

☐ **Fail**

☑ **Pass with Deviation**

Comment: Please refer U15 and U29.

2009/11/17	*Wenyuan Yang*	*Eva Yeh*
Issue Stamp	**Manager**	**Test Engineer**

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Thermal Image Analysis

1. Test Date: 11-17-2009

2. Test Product: GENE-9315 A0.2

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:

1. GAAPHTEC 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 GL200): 24.8℃ (With cooler)
Component Side-2 (Test by TVS-100):25.2℃ (Without cooler)
Component Side-3 (Test by TVS-100):25.7℃ (Without cooler)

6. Test Software:

Windows XP / Run Prime 95

7. Take Picture Time:

After power on 2 hours

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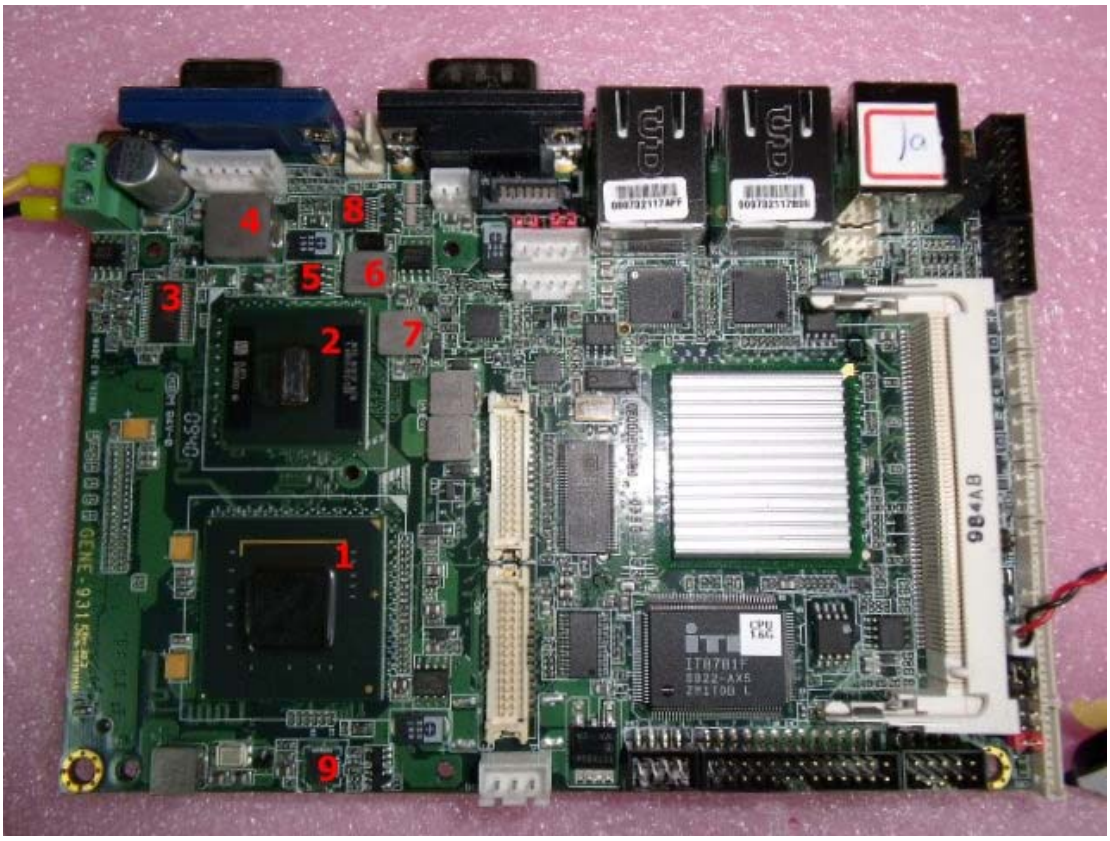
Temperature Profile Test:

Component Side-1:



Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				24.8℃	60℃	
1	U10	(TF)IC.SMD.Intel 945GSE Express Chipset.Intel.QG82945GSE SLB2R;EE-A081310;14S4294503;TWN	105	49.2	84.4	
2	U15	(TF)Intel CPU.Diamondville.N270.1.6GHz/FSB 533MHz. FCBGA8.437Pins.STEPPING CODE:SLB73.AU80586GE025D; EE-A081317;14S4160020;TWN	90	52.4	87.6 (*3)	
3	U22	(TF)IC.SMD.eTSSOP-28.Dual Synchronous Controller.NS.LM5642XMH;EE-A091655;14S1564201;TWN	100	49.9	85.1	
4	L8	(TF)COIL.2.2uH.20%.SMD.11.5x10.3x4.0mm.GOTREND.GSTC104P-2R2MN.DCR=7m ohm.Irms=12Amp; EE-A081705;121110226E;TWN	125	47.4	82.6	
5	U26	(TF)PWR.SMD SO-8.P-Channel MOSFET.ANPEC. APM4463KC-TRL;EE-A041711;1315446310;TWN	125	49.6	84.8	
6	L7	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN;EE-A081766;121110226C; TWN	125	50.5	85.7	
7	L6	(TF)COIL.1.5uH.Irms=9A.Isat=18A.20%.SMD(7.3x6.8x3.0).2pin.RDC=15m Ohm.GOTREND.GSTC063P-1R5MN;EE-A061612; 121110156A;TWN	125	49.9	85.1	
8	U29	(TF)IC.SMD.QSOP 16P.VGA ESD Protection Array.CMD.CM2009-02QR;EE-A041548;14S2200900;TWN	85	46.8	82.0 (*3)	
9	U2	(TF)IC.SMD MLPQ-24.DDR1/2/3 Memory Power Supply.Semtech.SC488MLTRT;EE-A081706;14S2048800;TWN	125	50.8	86.0	

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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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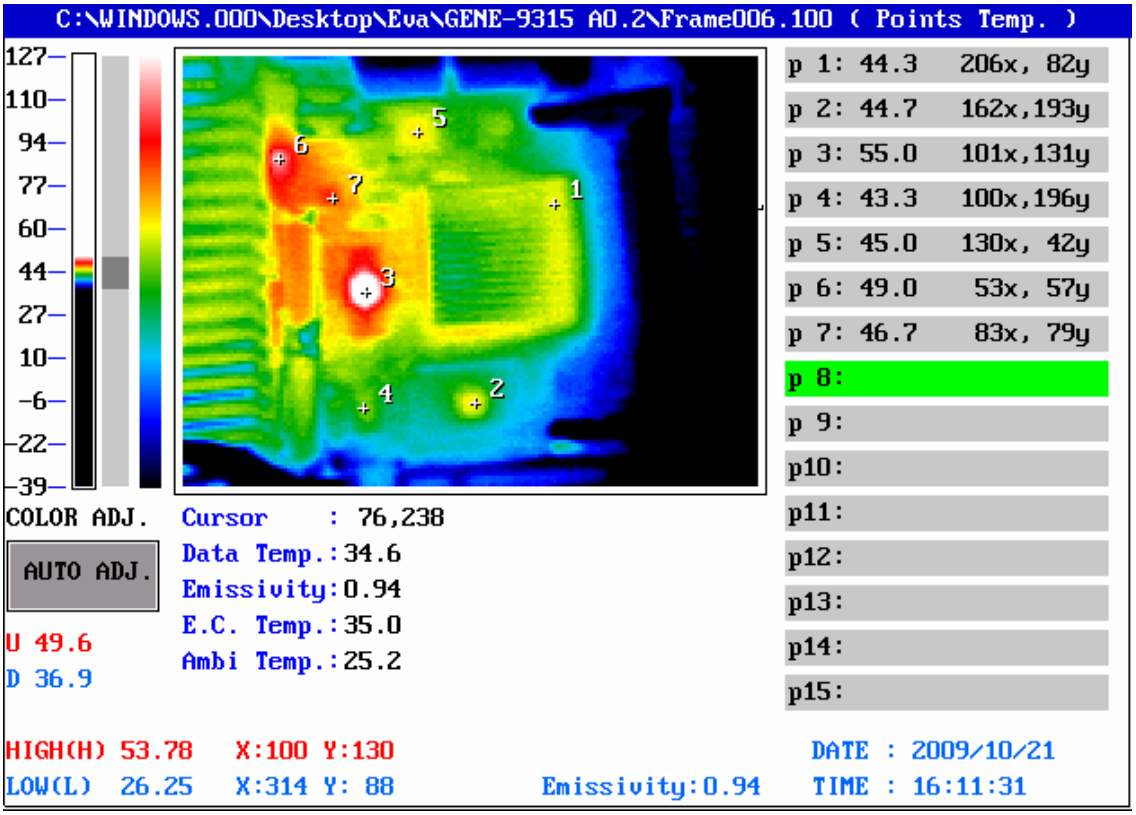
Component Side-2:



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Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.2℃	60℃	
1	U14	(TF)IC.SMD.Chipset ICH7M.Intel.NH82801GBM SL8YB;EE-A060320;14S428010D;TWN	99	44.3	79.1	
2	U6	(TF)IC.SMD.QFP128P.Super I/O w/4 COMs.ITE.IT8781F/AX-L;EE-A081754;14S4878100;TWN	100	44.7	79.5	
3	U12	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR. IDT.9LPRS501PGLF;EE-A081777;14S3050100;TWN	100	55.0	89.8	
4	U7	(TF)IC.SMD TSSOP28.Trusted Platform Module.Infineon. SLB9635TT1.2;EE-A071258;14S4963500;TWN	100	43.3	78.1	
5	U24	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset. Intel.WG82574L SLBA8;EE-A081303;14S4825740;TWN	109	45.0	79.8	
6	U20	(TF)IC.SMD.MLP5x5-32P.IMVP6 Single Phase PWM.SEMTECH.SC454MLTRT;EE-A090042;14S2045400;TWN	100	49.0	83.8	
7	U16	(TF)IC.SMD MLPQ-24.Dual Synchronous Buck Control.Semtech.SC415MLTRT;EE-A071927;14S2041500;TWN	100	46.7	81.5	

Note(*):

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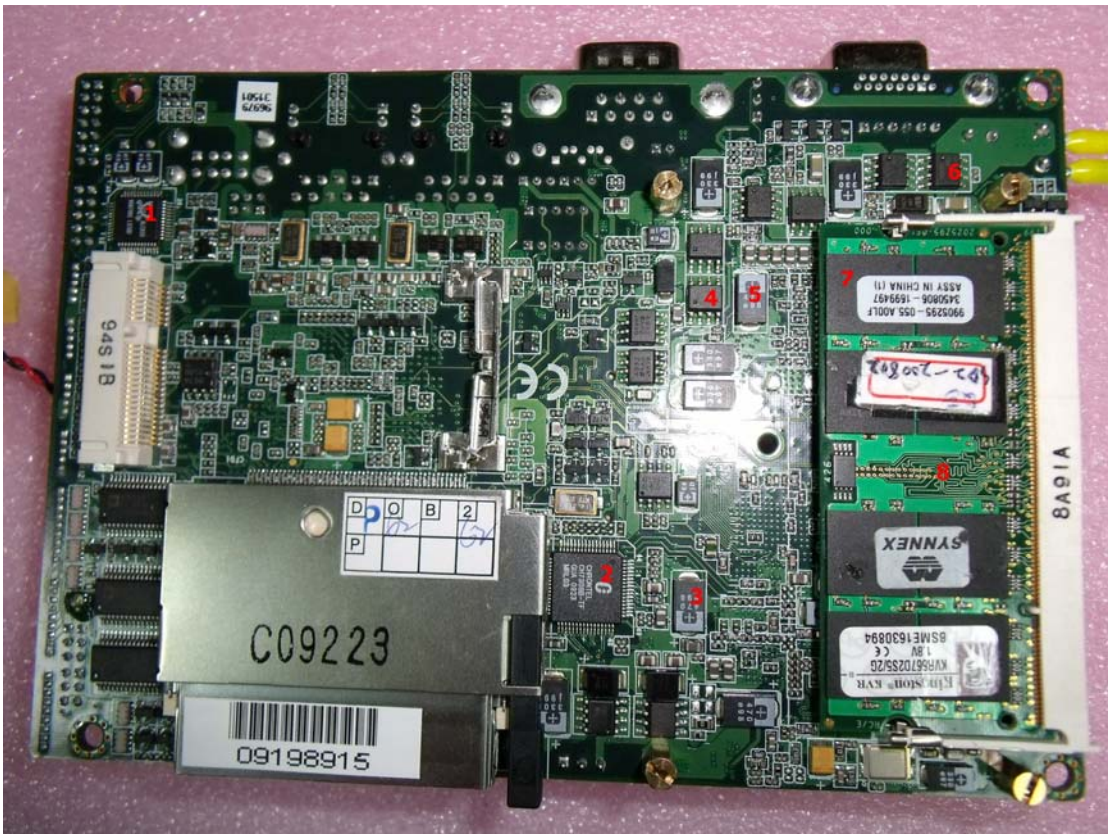
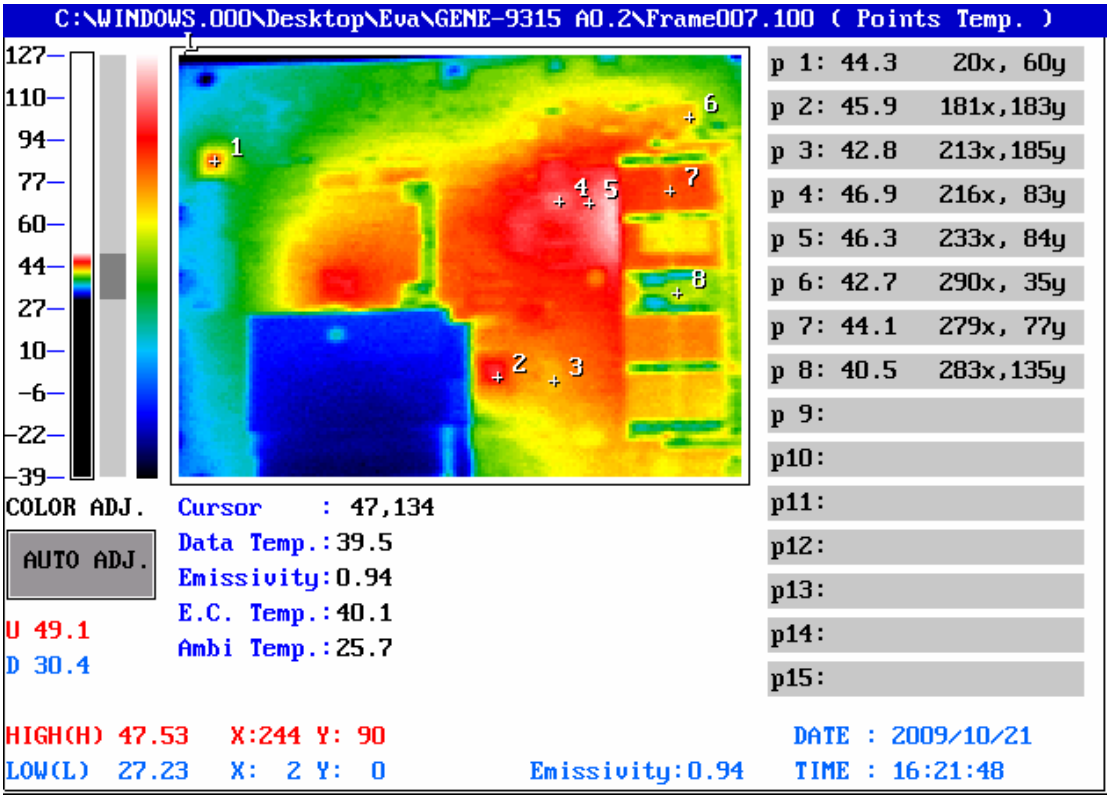
Component Side-3:





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Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.7℃	60℃	
1	U55	(TF)IC.SMD LQFP 48Pin.6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF;EE-A040125;14S3065500;TWN	100	44.3	78.6	
2	U43	(TF)IC.SMD.LQFP 64Pin.LVDS Transmitter.CHRONTEL. CH7308B-TF;EE-A070801;14S4730802;TWN	125	45.9	80.2	
3	TC17	(TF)POSCAP.[68,100,150,220,330,470,680,1000]uF.[2.5,4.0,6.3,10.0]V.20%.[9,12,15,18,25,35]mohm.SMD.SANYO.TPE series;EE-A060324;11896*****;TWN	105	42.8	77.1	
4	U52	(TF)PWR.SMD SO8.N-Channel MOSFET 30V 15A.FAIRCHILD.FDS8896;EE-A070070;1315889611;TWN	125	46.9	81.2	
5	TC27	(TF)POSCAP.[68,100,150,220,330,470,680,1000]uF.[2.5,4.0,6.3,10.0]V.20%.[9,12,15,18,25,35]mohm.SMD.SANYO.TPE series;EE-A060324;11896*****;TWN	105	46.3	80.6	
6	U58	(TF)PWR.SMD.SOP8.30V.11A.Single N-Channel.FAIRCHILD.FDS6690A;EE-A071202;1315669000;TWN	125	42.7	77.0	
7	Memory	Kingston DDR2-667 KVR667D2S5/2G 2GB (ELPIDA E1108ACBG-6E-E)	95	44.1	78.4	
8	Memory	Kingston DDR2-667 KVR667D2S5/2G 2GB (ELPIDA E1108ACBG-6E-E)	95	40.5	74.8	

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