ETX-945GSE A0.2

Thermal Image Analysis Report

Report Number: 09E080029

Sample Configuration & Quantity Under Test

- CPU Board: AAEON ETX-945GSE A0.2
- CPU: Intel CPU N270/1.6GHz/FSB533MHz
- Memory: Kingston DDR2-667 KVR667D2S5/2G 2GB (7KEI2 D9HNL)
- HDD: Western Digital WD / 80GB
- Test Software: Windows XP / Run Prime95
- ATX Power Supply: Seventeam
- Cooler:

Test Result Summary

☑ **Pass**

☐ **Fail**

☐ **Pass with Deviation**

Comment: _____

_____

2009-12-02	Wenyuan Yang	Jerry Tsai
Issue Stamp	**Manager**	**Test Engineer**

A. IR Image – Ho Spot Checking

1. Test Date: 02-12-2009

2. Test Product: ETX-945GSE

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:

IR Scanner: Infrared Camera

NIPPON AVIONICS CO., LTD.

Model: TVS-100

Date of Calibration: 09/17/09

Serial Number: 0179L2746

5. Test Condition:

1. Ambient temperature: Component Side-1: 24.1 ℃, Solder Side: 23.1℃
2. ETX-945GSE without cooler

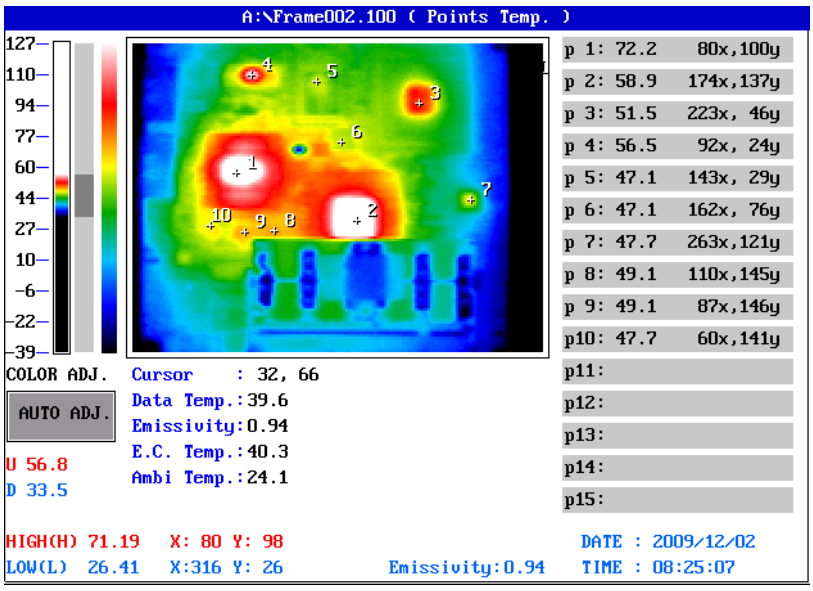
6. Test Software:

Windows XP / Run Prime 95

7. Take Picture Time:

After power on 2 hours

8. Infrared Image:



PIC 1. TOP view -1

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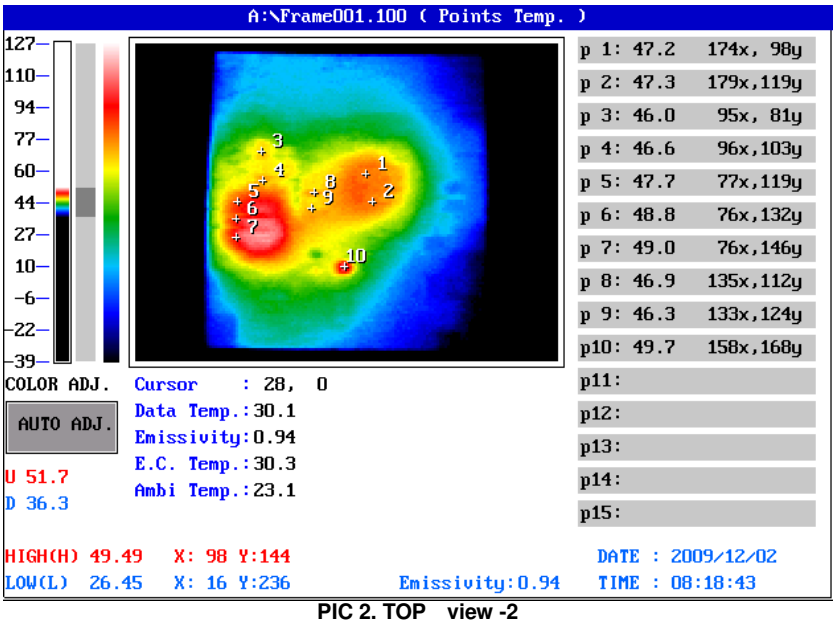

PIC 2. TOP view -2

B. Thermal Couple Measurement

1. Test Date: 02-12-2009

2. Test Product: ETX-945GSE

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:

40 Channel Thermal Recorder:

YOKOGAWA Inc,

Model: DA100-13-1D

Date of Calibration: 12/13/08

Serial Number: 12A323190

5. Test Condition:

Ambient temperature: 24dC

ETX-945GSE with cooler

6. Test Software:

Windows XP / Run Prime 95

7. Take down Temperature Time:

After power on 2 hours

8. Measurement Spots of Terminal Couple

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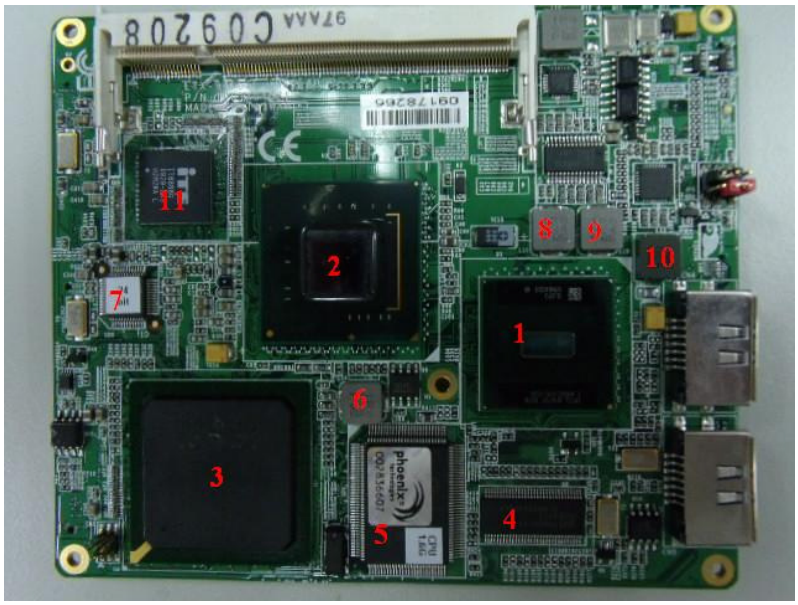
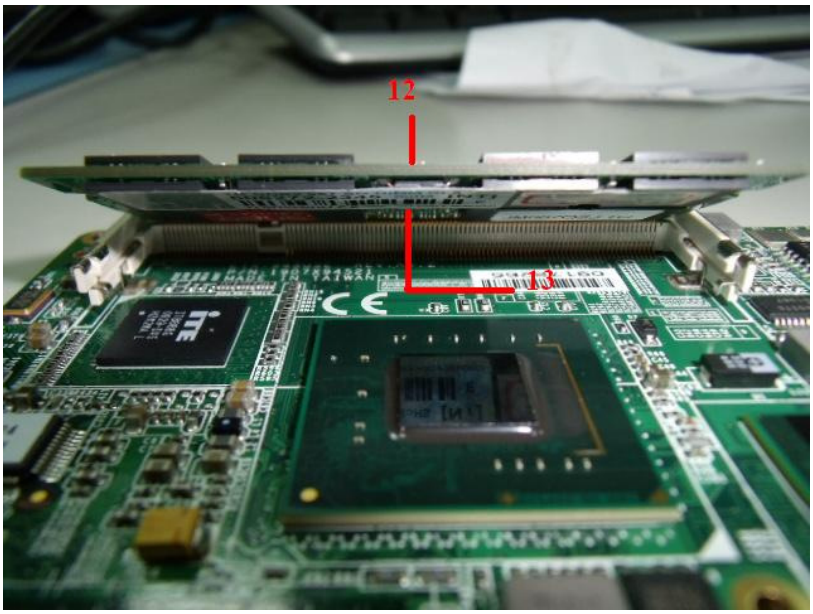


PIC 3. Thermal Couple Location on Component Side



PIC 4. Thermal Couple Location on DIMM

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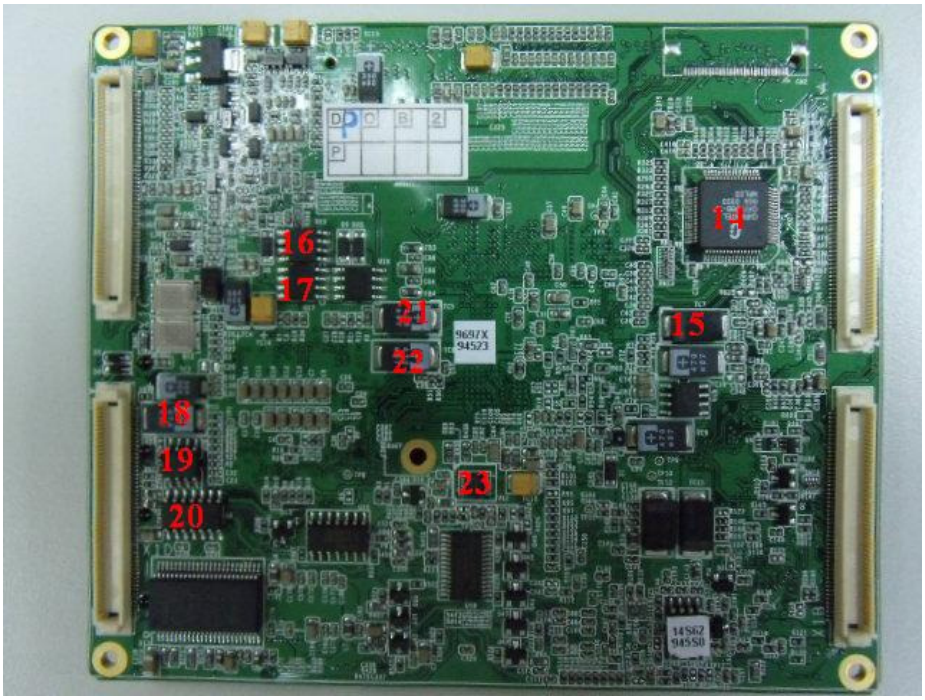

PIC 5. Thermal Couple Location on Solder Side

9. Thermal profile data:

Point	Designator	Description	Tc *1 (℃)	Tm *2 (℃) Measured Under	
				24.0℃	60℃
01	U1	(TF)IntelCPU.Diamondville.N270.1.6GHz/FSB533MHz.FCBGA8.437Pins.STEPPING CODE:SLB73.AU80586GE025D	95	46.3	82.3
02	U3	(TF)IC.SMD.Intel 945GSE Express Chipset.Intel.QG82945GSE SLB2R	105	53.7	89.7
03	U4	(TF)IC.SMD.Chipset ICH7M.Intel.NH82801GBM SL8YB	100	44.8	80.8
04	U9	(TF)IC.SMD.TSSOP64P.CLOCKGENERATOR.IDT.9LPRS501PGLF	100	56.5	92.5
05	U24	(TF)IC.SMD.PQFP 128Pin.LPC Super I/O.Winbond.W83627HG-AW A version	100	51.5	87.5
06	L14	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN	125	57.5	93.5
07	U26	(TF)IC.SMD LQFP 48Pin.6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF	100	53.6	89.6
08	L11	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN	125	58.9	94.9
09	L10	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN	125	59.5	95.5

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10	L13	(TF)COIL.0.33uH.Irms=20A.Isat=30A.20%.SMD(7.3x6.8x3.0).2pin. RDC=3.9m Ohm.GOTREND.GSTC063P-R33MN	125	56.4	92.4
11	U29	(TF)IC.SMD TFBGA.160P.PCI to ISA Bridge Chip.ITE.IT8888G-L	100	49.5	85.5
12	DDR	Kingston DDR2-667 KVR667D2S5/2G 2GB (7KEI2 D9HNL)	85	49.5	85.5
13	DDR	Kingston DDR2-667 KVR667D2S5/2G 2GB (7KEI2 D9HNL)	85	52.7	88.7
14	U27	(TF)IC.SMD.LQFP 64Pin.LVDS Transmitter.CHRONTEL.CH7308B-TF	115	50.2	86.2
15	TC7	(TF)SP CAP.220uF.2V.-35~+10%.D(7.3*4.3*1.9mm).9mOhm SMD.Panasonic.EEFSX0D221EY	105	50.5	86.5
16	U15	(TF)Dual N-Channel.SMD SO-8.2.5V MOSFET.APEC.AP9926GM	125	46.6	82.6
17	U17	(TF)PWR.MOSFET.N-Channel 30V SO-8.VISHAY.Si4420DY-T1-E3	125	47.6	83.6
18	TC1	(TF)POSCAP.470uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SM D.SANYO.2R5TPE470M9	135	53.6	89.6
19	U28	(TF)IC.SMD.SOIC-8P.2K Serial EEPROM.ATMEL.AT24C02BN-SH-T	125	52.7	88.7
20	U8	(TF)IC.SMD SO.14Pin.PHILIPS.74LVC07AD-T	125	51.5	87.5
21	TC5	(TF)POSCAP.470uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SM D.SANYO.2R5TPE470M9	135	47.3	83.3
22	TC6	(TF)POSCAP.330uF.2.5V.20%.C2(6*3.2*1.8).12mohm.3300mA.SMD .SANYO.2R5TPE330MCC2	135	46.9	82.9
23	U12	(TF)IC.SMD MLPD-10.PWM BUCK CONTROLLER.IR.IR3624MTRPBF	125	50.7	86.7

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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