Report NO: 10E080014

EMB-9459T

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**
2010/09/29	**Jansin Lee**	**Anderson Lin**

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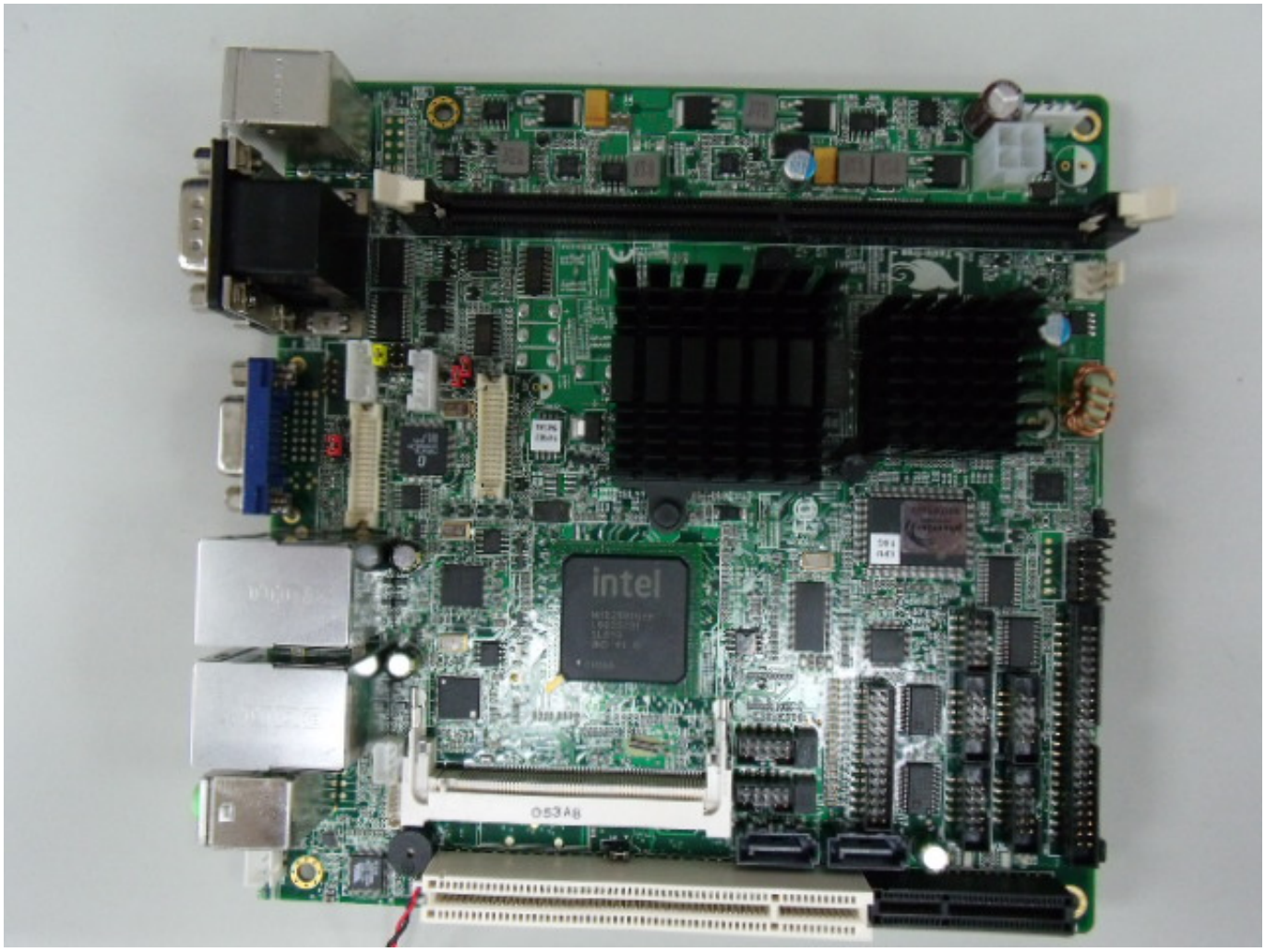
Sample Configuration & Quantity Under Test

- **CPU Board: EMB-9459T Rev:A2.0**
- **Carrier Board:N/A**
- **CPU: Intel Atom N270 1.60GHz**
- **Memory: Kingston 1GB DDR2 800(KVR800D2N6)**
- **HDD: WD 3.5" SATA3 H.D / WD6402AAEX**
- **BIOS : EMB-9459T-A20 BIOS Rev 2.0 (06/10/2010)**
- **Test Software: Windows XP sp3 / Run Prime95 v25.9**
- **AT Power Supply: ZECK ZKS-300W**
- **Cooler:**



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Thermal Image Analysis

1. Test Date: 09/29/2010

2. Test Product: EMB-9459T

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:
MR-1000(TH-046)

5. Test Condition:
Component Side-1: 25.9℃
Component Side-2: 26.4℃
Component Side-2: 24.1℃

6. Test Software:
Windows XP sp3 / Run Prime 95 v25.9

7. Take Picture Time:
After running Prime 95 for 2 hours

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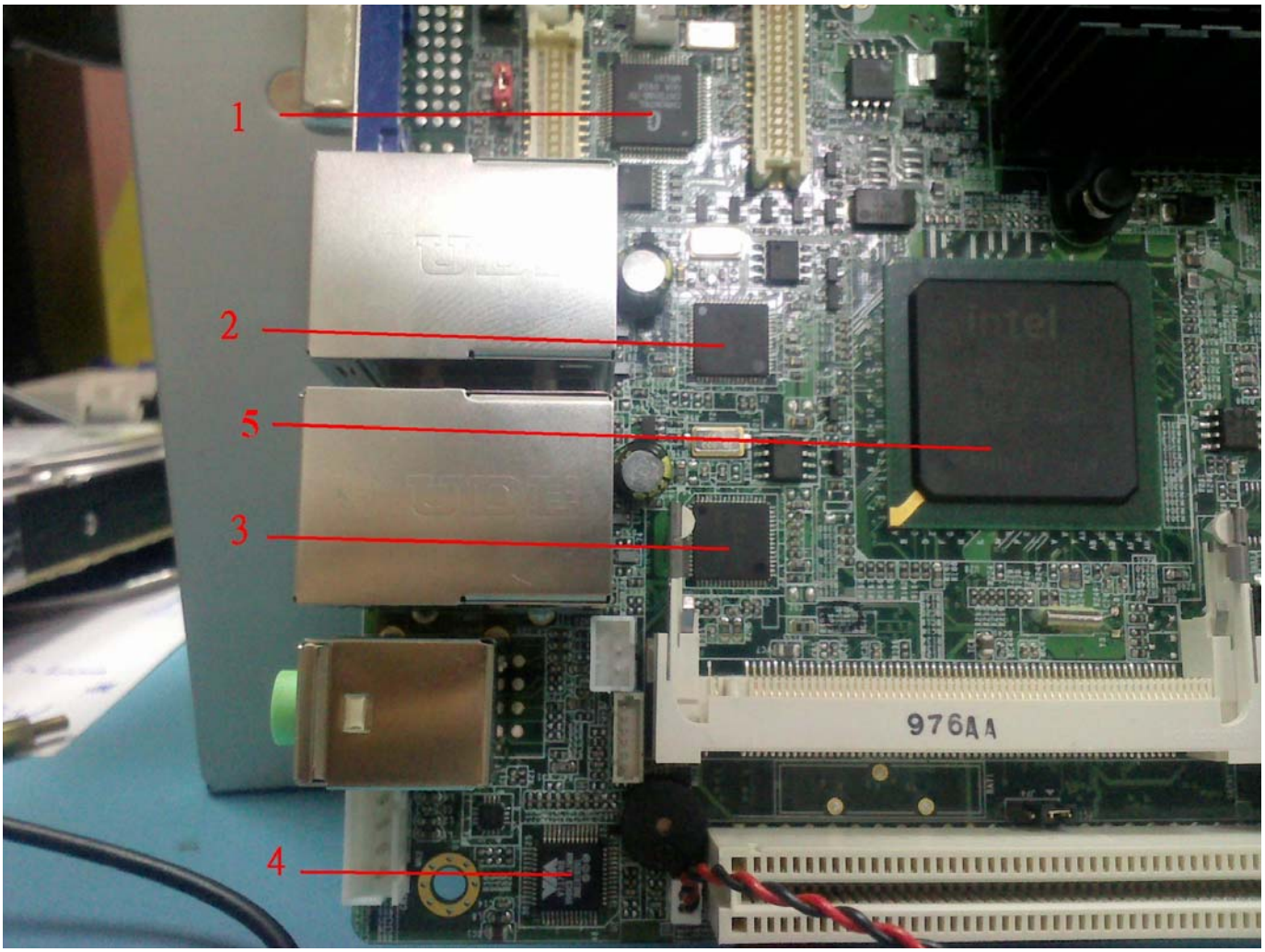
Temperature Profile Test:

Component Side-1:



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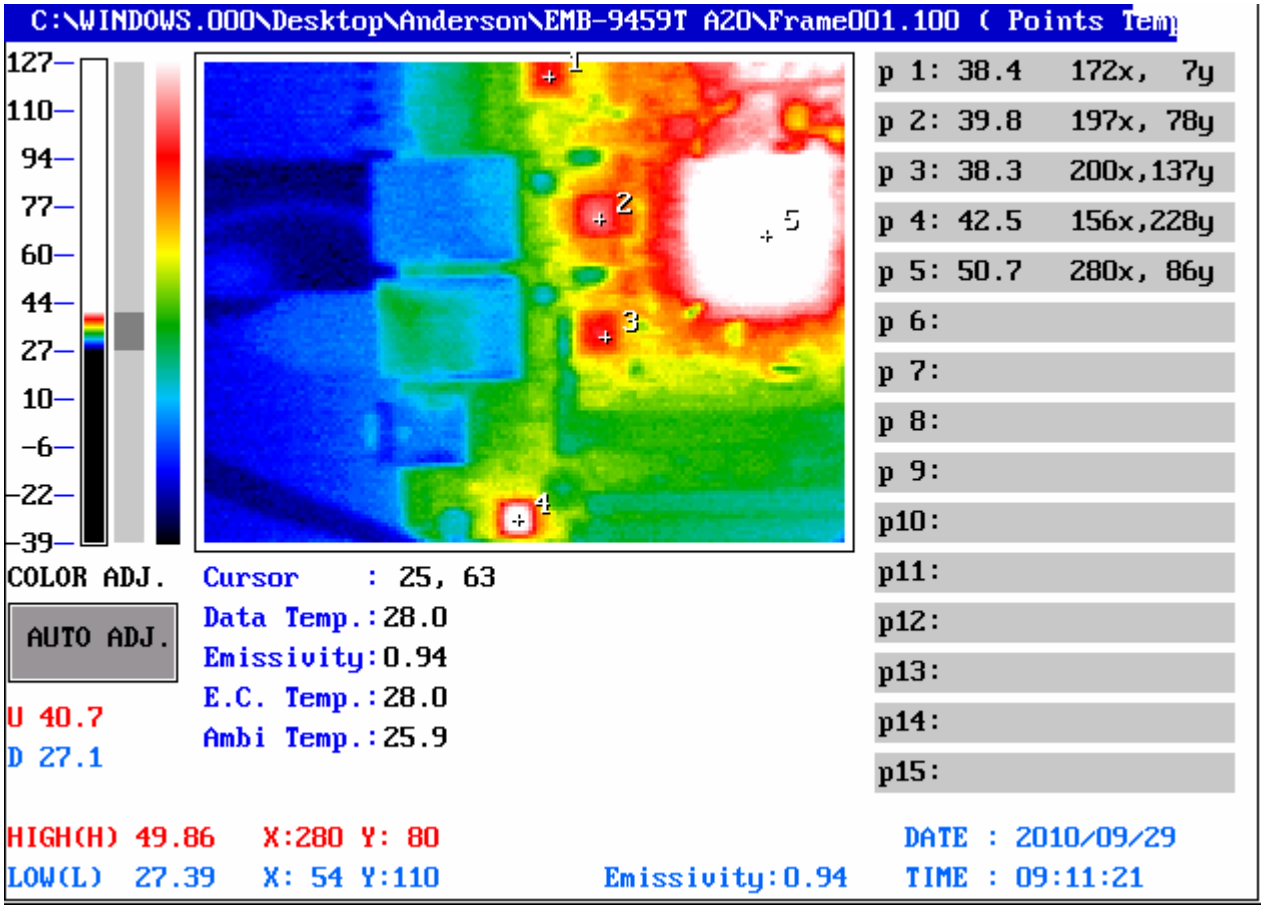

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.9℃	60℃	
1	U49	(TF)IC.SMD.LQFP 64Pin.LVDS Transmitter.CHRONTEL.CH7308B-TF	115	38.4	72.5	
2	U17	(TF)IC.SMD.QFN.64P.PCI-express.Gigabit Ethernet Chip.REALTEK.RTL8111C-VB-GR	100	39.8	73.9	
3	U18	(TF)IC.SMD.QFN.64P.PCI-express.GigabitEthernet Chip.REALTEK.RTL8111C-VB-GR	100	38.3	72.4	

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4	U2	(TF)IC.SMD.LQFP 48P.7.1Channel HD Audio Codec.VIA.VT1708B	85	42.5	76.6	
5	U28	(TF)IC.SMD.Chipset ICH7M.Intel.NH82801GBM SL8YB	100	50.7	84.8	

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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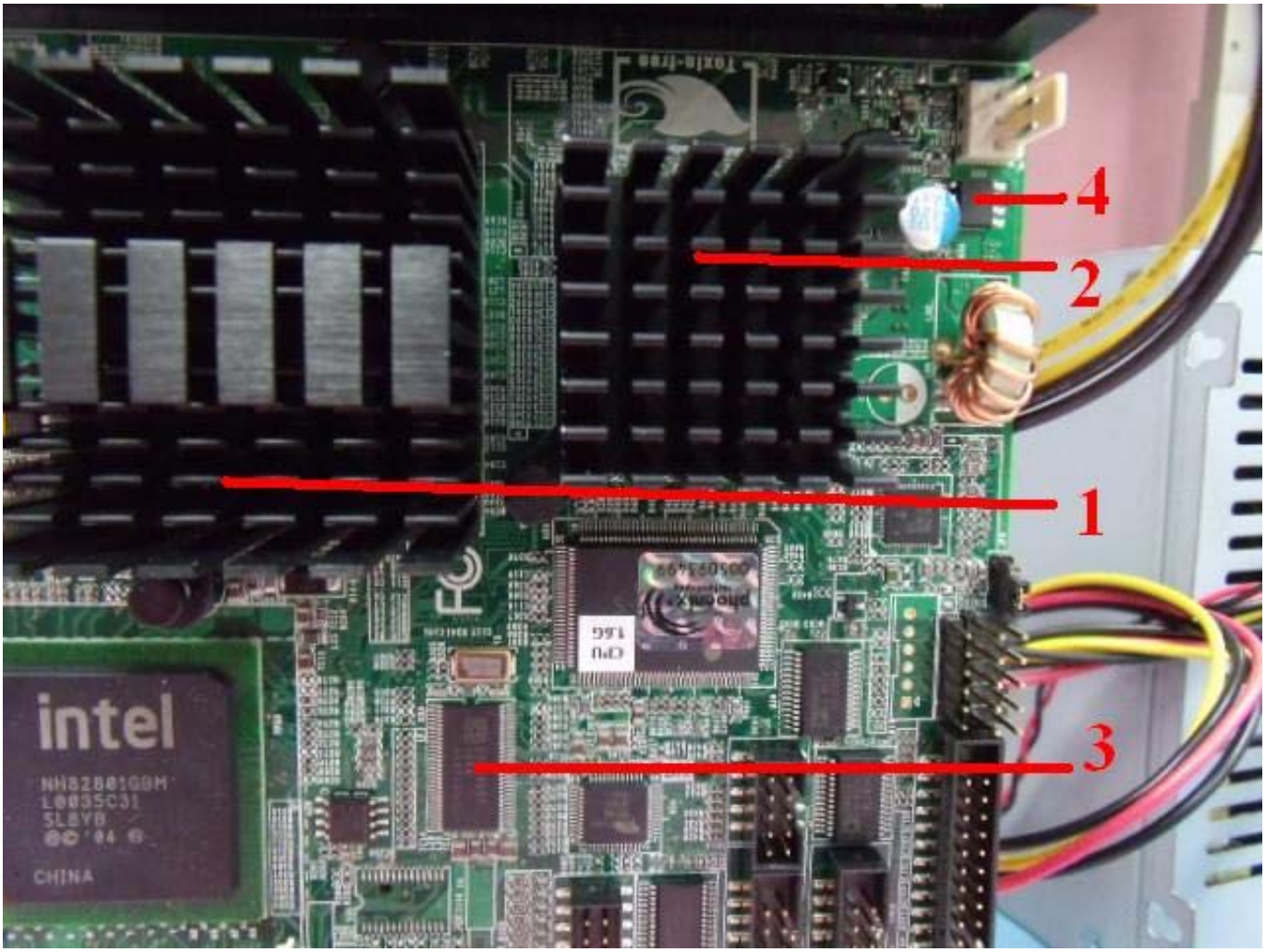
Component Side-2:



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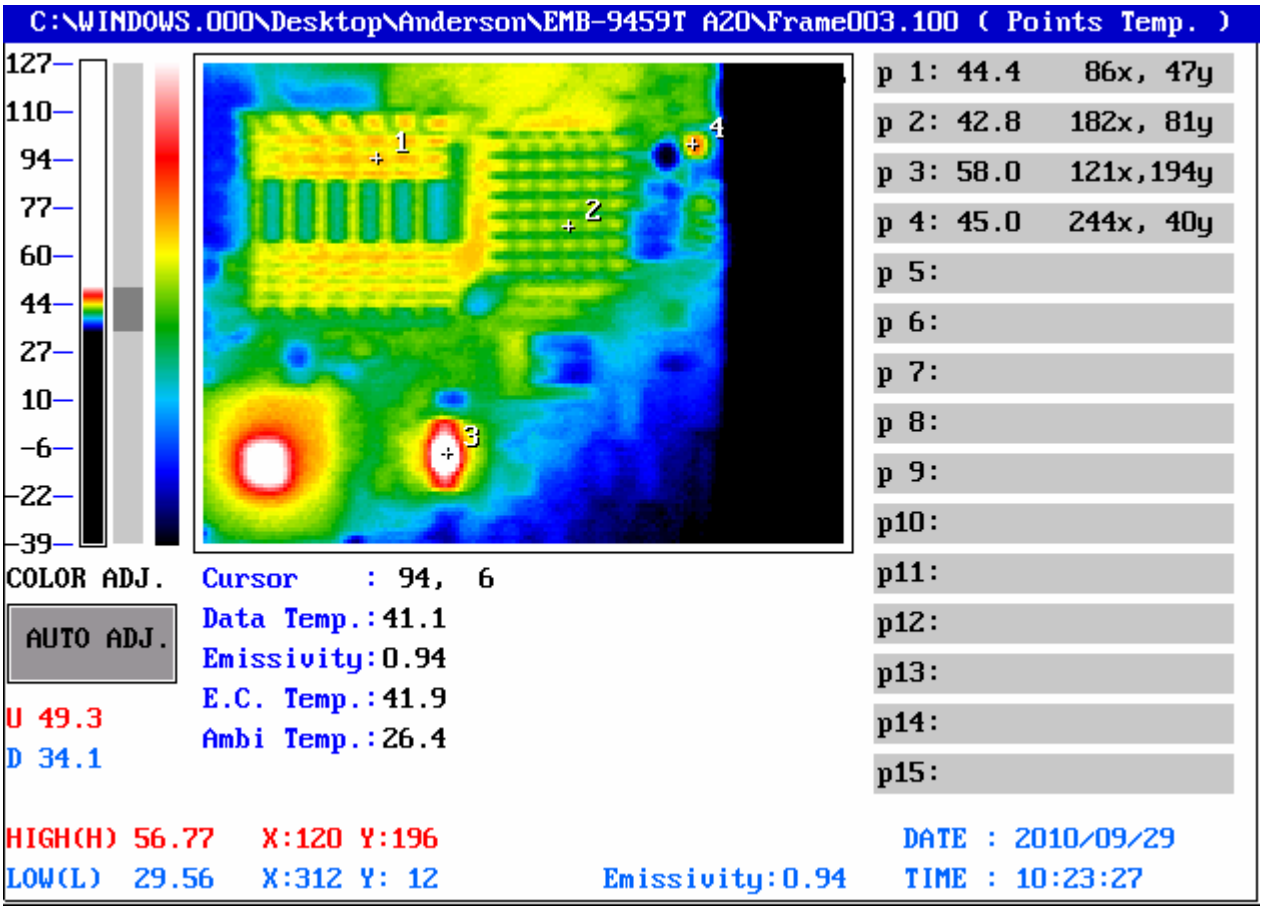

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				26.4℃	60℃	
1	U30(NB)	(TF)IC.SMD.Intel 945GSE Express Chipset.Intel.QG82945GSE SLB2R	105	44.4	81.6	
2	U38(CPU)	(TF)Intel CPU.Diamondville.N270.1.6GHz/FSB 533MHz.FCBGA8.437Pins.STEPPING CODE:SLB73.AU80586GE025D	90	42.8	76.4	
3	U33	(TF)IC.SMD.TSSOP 56P.CLOCK GENERATOR.ICS.ICS954226AGLF	115	58.0	91.6	
4	Q66	(TF)Dual N-Channel.SO-8.SMD.Vds=60V.Vgs=(+/-)25V.Ids=7/5A.Rds=21/27mohm.APEC.AP9975GM	125	45.0	78.6	

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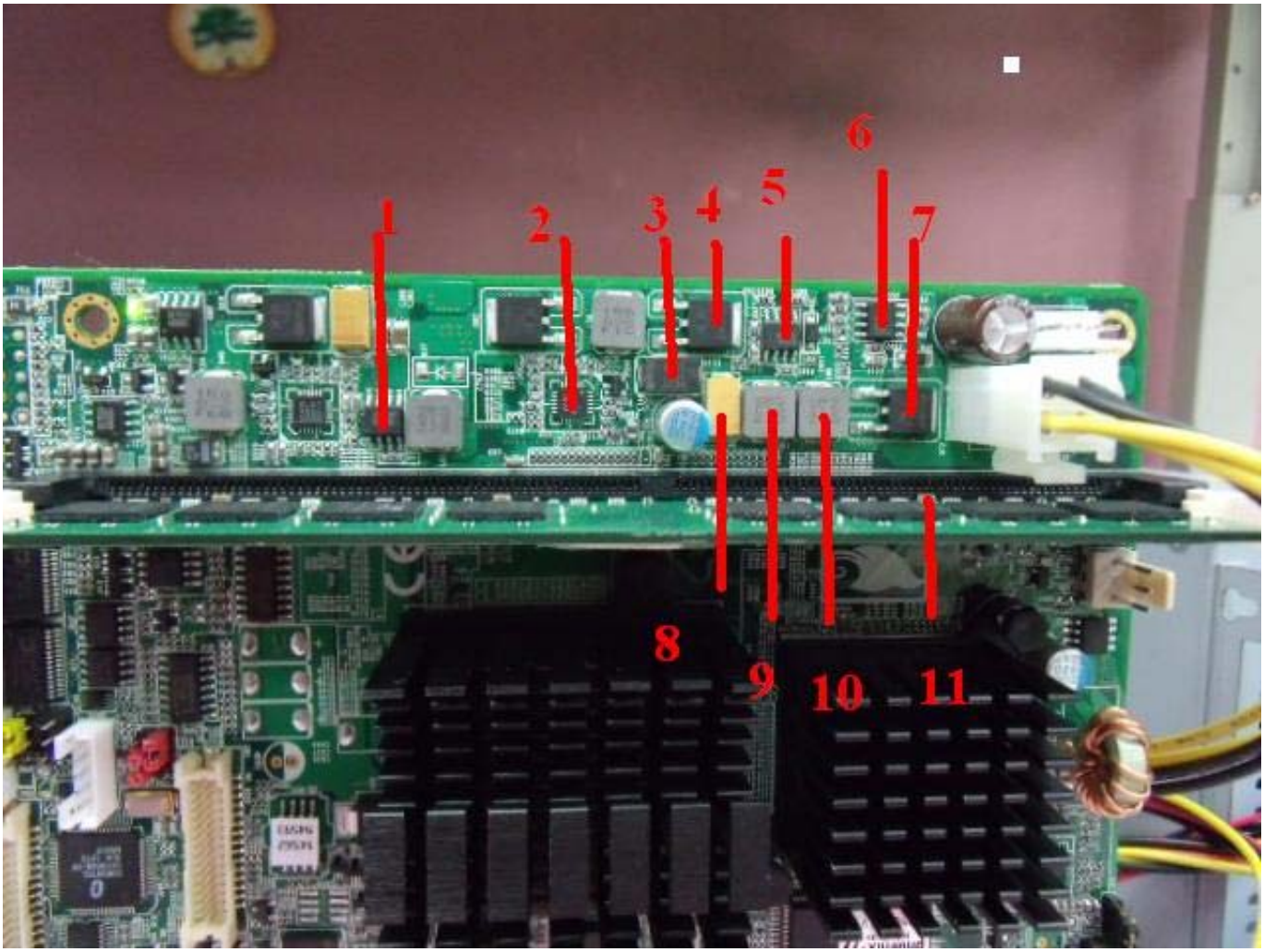
- **Margin** : Tc+5℃ > Tm > Tc-10℃; The measured value is within specification with margin. For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

Component Side-3:



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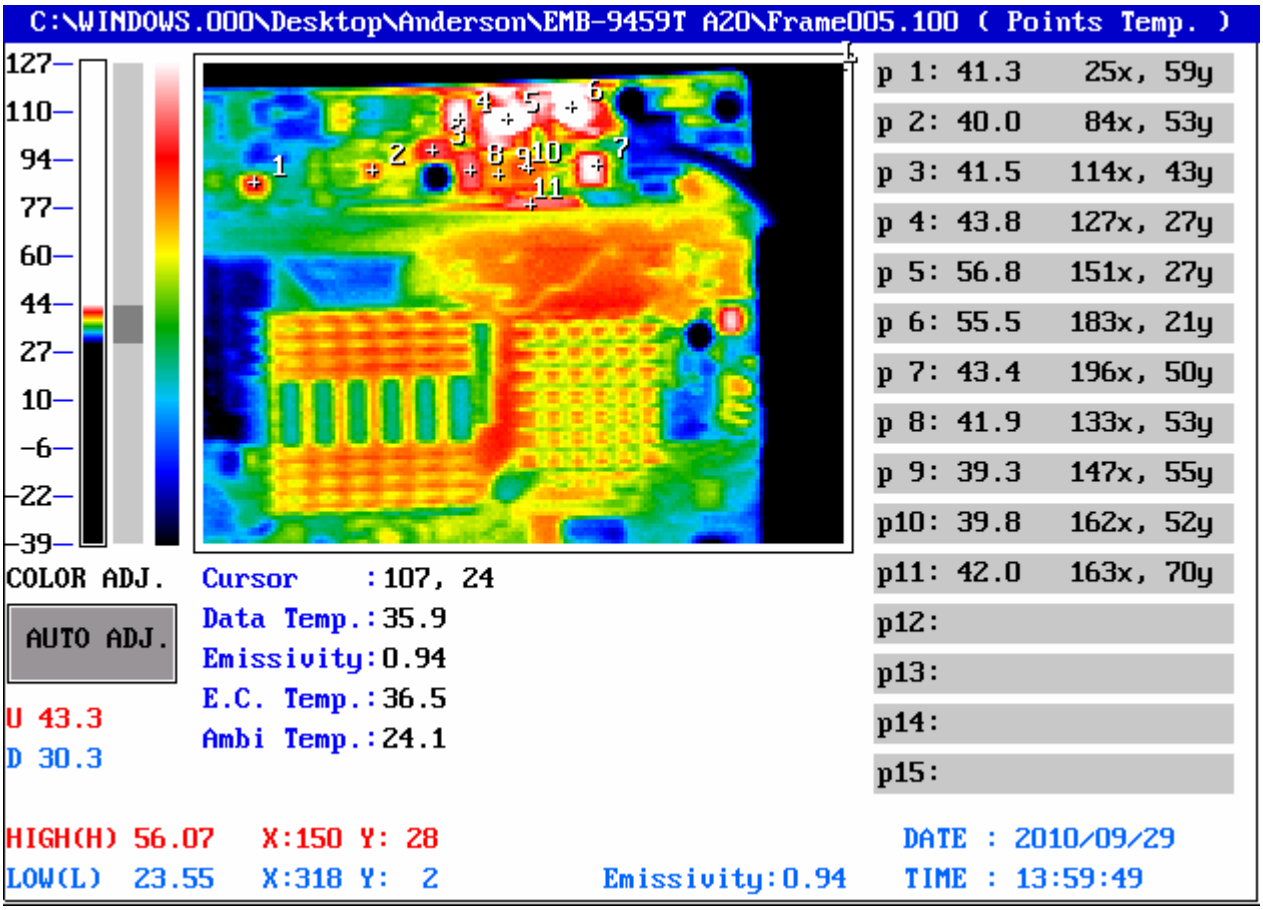

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				24.1℃	60℃	
1	U27	(TF)IC.SMD MLPQ-24.Dual Synchronous Buck Control.Semtech.SC415MLTRT	100	41.3	77.2	
2	U53	(TF)IC.SMD MLPQ-24.DDR1/2/3 Memory Power Supply.Semtech.SC488MLTRT	125	40.0	75.9	
3	D46	(TF)D Schottky.SMD SOT-23.PHILIPS.BAT54C	100	41.5	77.2	
4	EC19	(TF)SP CAP.150uF.6.3V.20%.D(7.3*4.3*2.8mm).18mOhm SMD.Panasonic.ECGUD0J151ER	105	43.8	79.7	
5	U52	(TF)IC.SMD.SOP 8P.Switching PWM Controller.Richtek.RT9214PS	125	56.8	92.7	
6	U55	(TF)IC.SMD.SOP 8P.Switching PWM Controller.Richtek.RT9214PS	125	55.5	91.4	
7	Q72	(TF)PWR.SMD.TO-252.30V 94A.N-channel Power MOSFET.FAIRCHILD.FDD8896_NL	150	43.4	79.3	
8	EC5	(TF)KO-CAP.220uF.6.3V.20%.D(7.3*4.3*1.9mm).40mOhm SMD.KEMET.T520V227M006AS	135	41.9	77.8	

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9	L66	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28m ohm.Irms=6Amp.GOTREND.GSTC063P-3R3MN	155	39.3	75.2	
10	L80	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28m ohm.Irms=6Amp.GOTREND.GSTC063P-3R3MN	155	39.8	75.7	
11	DIMM1	Kingston 1GB DDR2 800(KVR800D2N6)	----	42.0	77.9	

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