Report NO:10E080005

EPIC-QM57

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
2010/04/27	Jansin Lee	Anderson Lin

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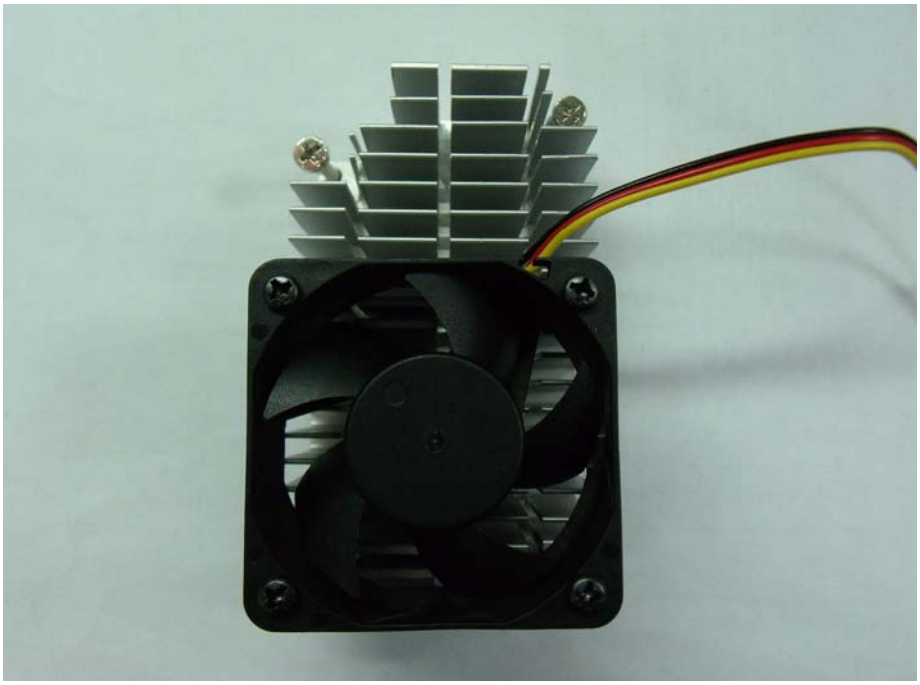
Sample Configuration & Quantity Under Test

- **CPU Board: EPIC-QM57 Rev.A0.2**
- **Carrier Board:N/A**
- **CPU: Intel ® Core™ i7-620M Processor (4M Cache, 2.66 GHz)**
- **Memory: SAMSUNG 2GB SODIMM DDR3-1066 (SEC 816 HCF8 K4B1G0846D)**
- **HDD: FUJITSU 2.5 SATA H.D MHY2080BH 80GB**
- **BIOS : EPIC-QM57 BIOS Rev 4.6.3.7 (04/01/2010)**
- **Test Software: Windows XP sp3 / Run Prime95 v25.9**
- **AT Power Supply: EMACS SP2-4400F**
- **Cooler:**



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Thermal Image Analysis

1. Test Date: 04/27/2010

2. Test Product: EPIC-QM57

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:
   1. 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: 24.9℃
   Component Side-2: 25.1℃
   Component Side-3: 24.1℃

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

7. Take Picture Time:
   After power on 2 hours

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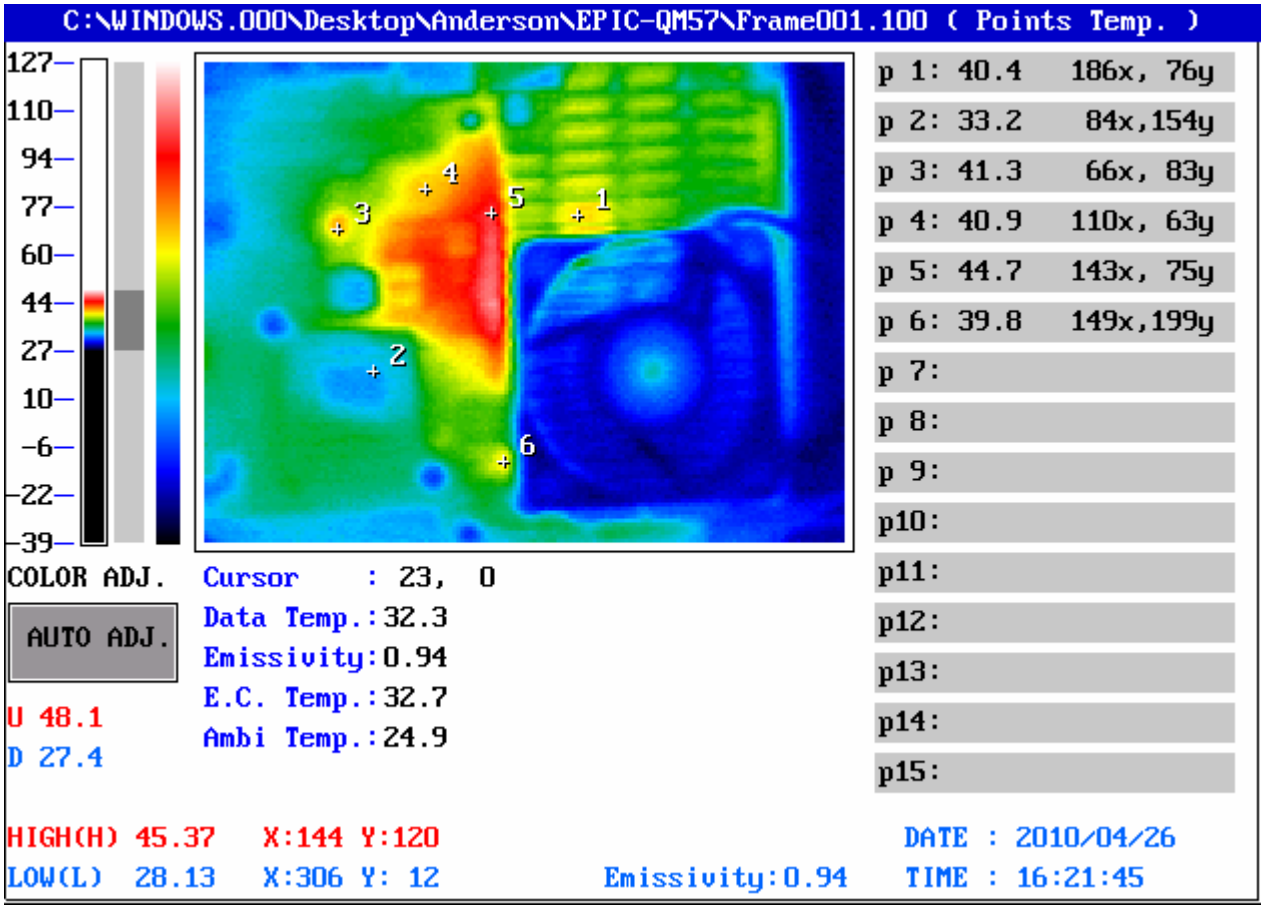
Temperature Profile Test:

Component Side-1:



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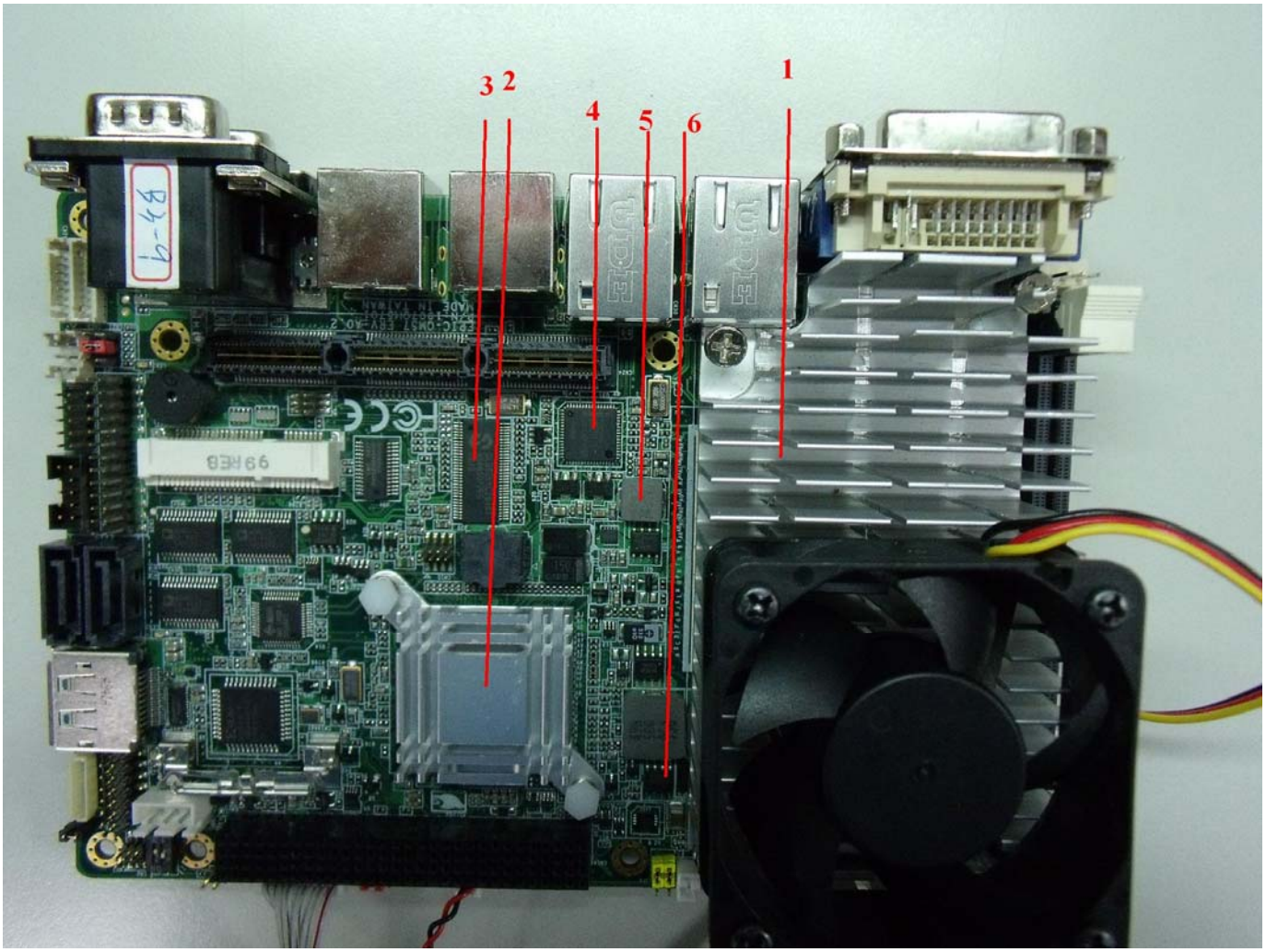

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Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				24.9℃	60℃	
1	U23	(TF)ZIF mPGA989M SKT.989P.for Arrandale.FOXCONN.DWG-PZ98927-3641-01F	105	40.4	75.5	
2	U11	(TF)IC.SMD.Chipset PCH.INTEL.BD82QM57 SLGZQ	120	33.2	68.3	
3	U30	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR.SILEGO.SLG505YC264BTTR	100	41.3	76.4	
4	U33	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	109	40.9	76	
5	L7	TF)COIL.4.7uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=37mohm.Irms= 5.5Amp.GOTREND.GSTC063P-4R7MN	155	44.7	79.8	
6	Q11	(TF)PWR.SMD.SOT-323.N-Channel.Mosfet.Vgs=± 20V,Ids=340mA.Rds=1.6/2.5ohm.ON.2N7002WT1G	125	39.8	74.9	

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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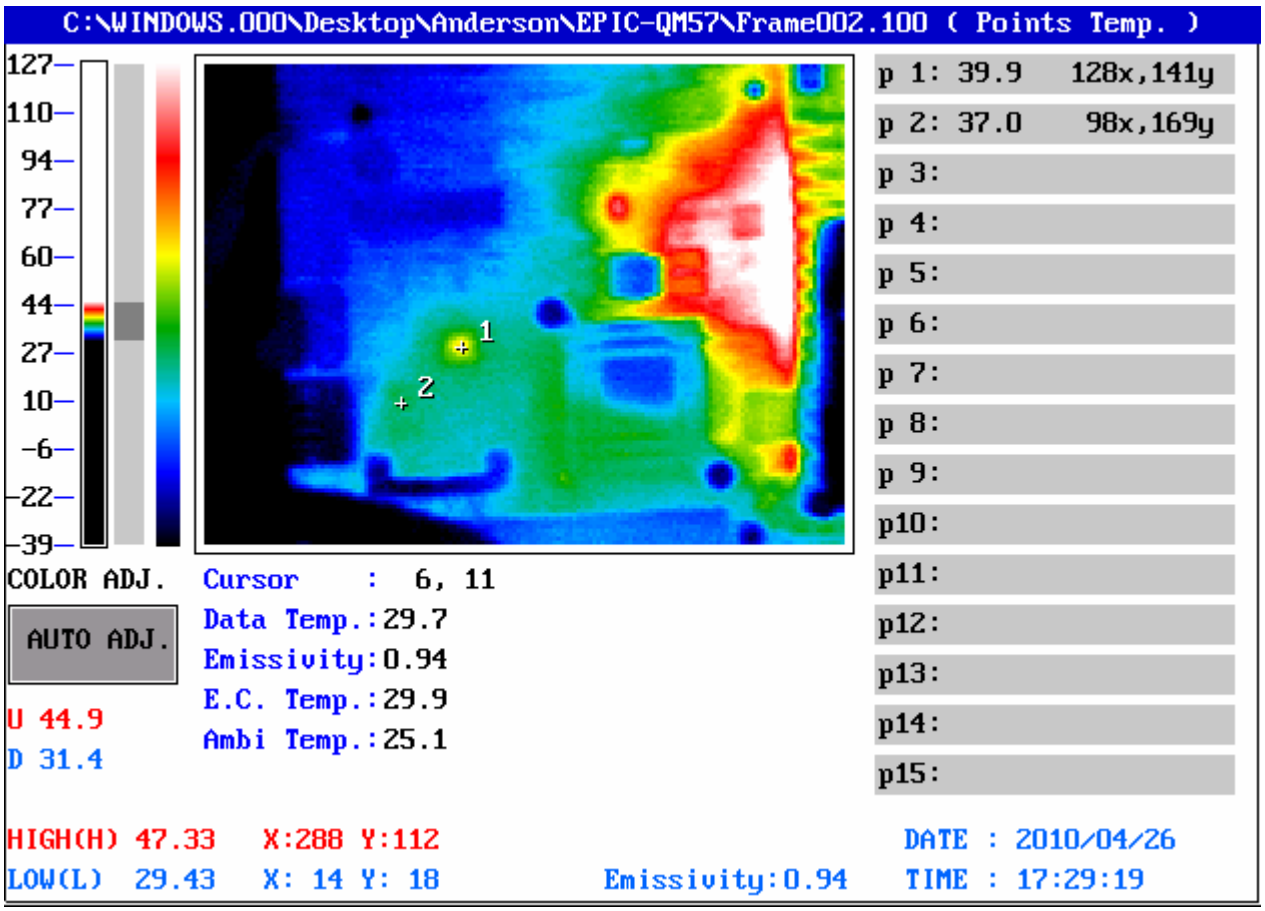
Component Side-2:



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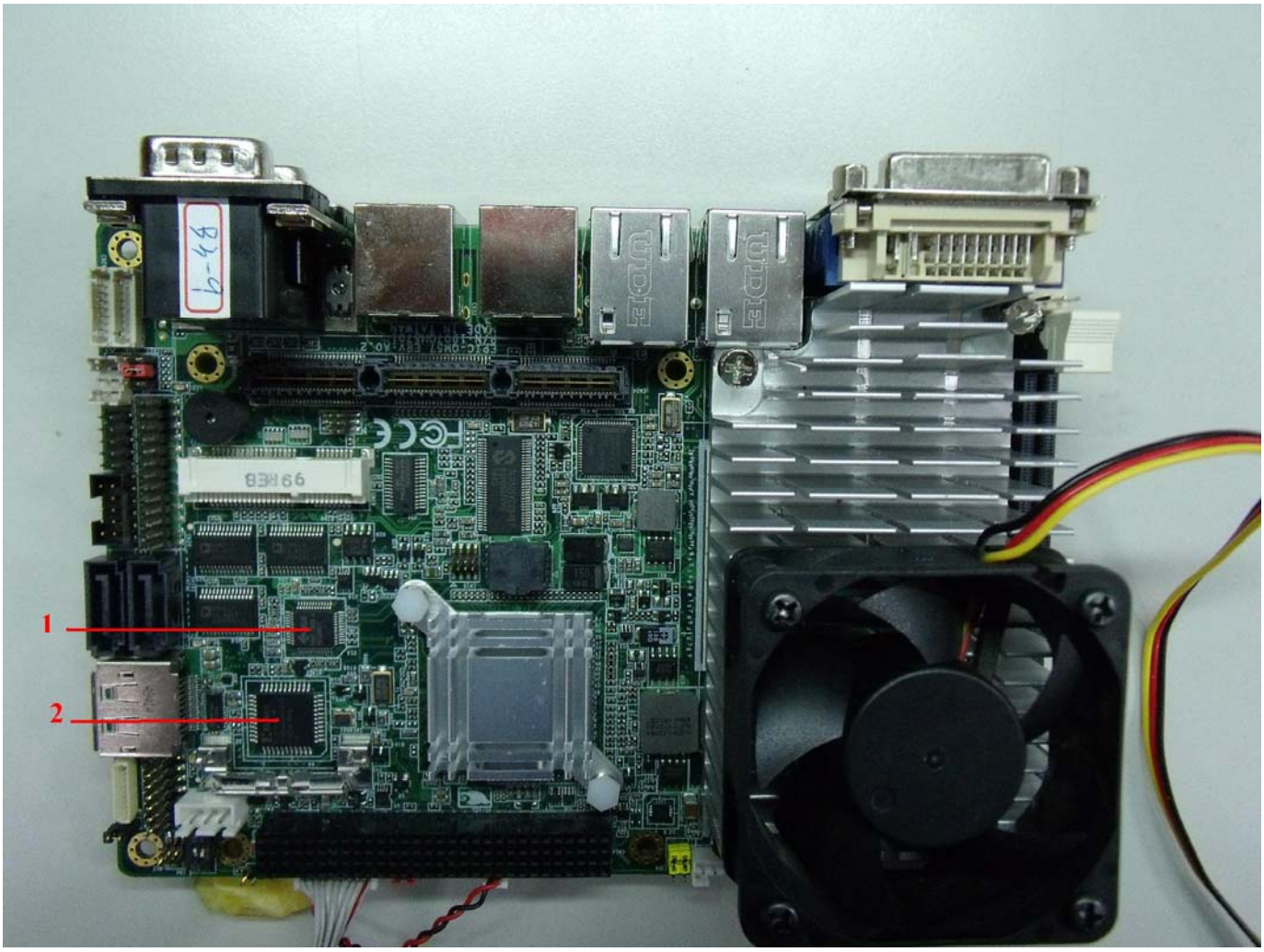

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25.1℃	60℃	
1	U14	(TF)IC.SMD.LQFP 48P.PCI Express to.PATA Host Controller.JMicron.JMB368-LGGZ0A	100	39.9	74.8	
2	U10	(TF)IC.SMD.VQ 44P.CoolRunner-II CPLD.Xilinx.XC2C64A-7VQG44C	125	37.0	71.9	

Note(*):
1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.
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3. Judgment Criteria:
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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.
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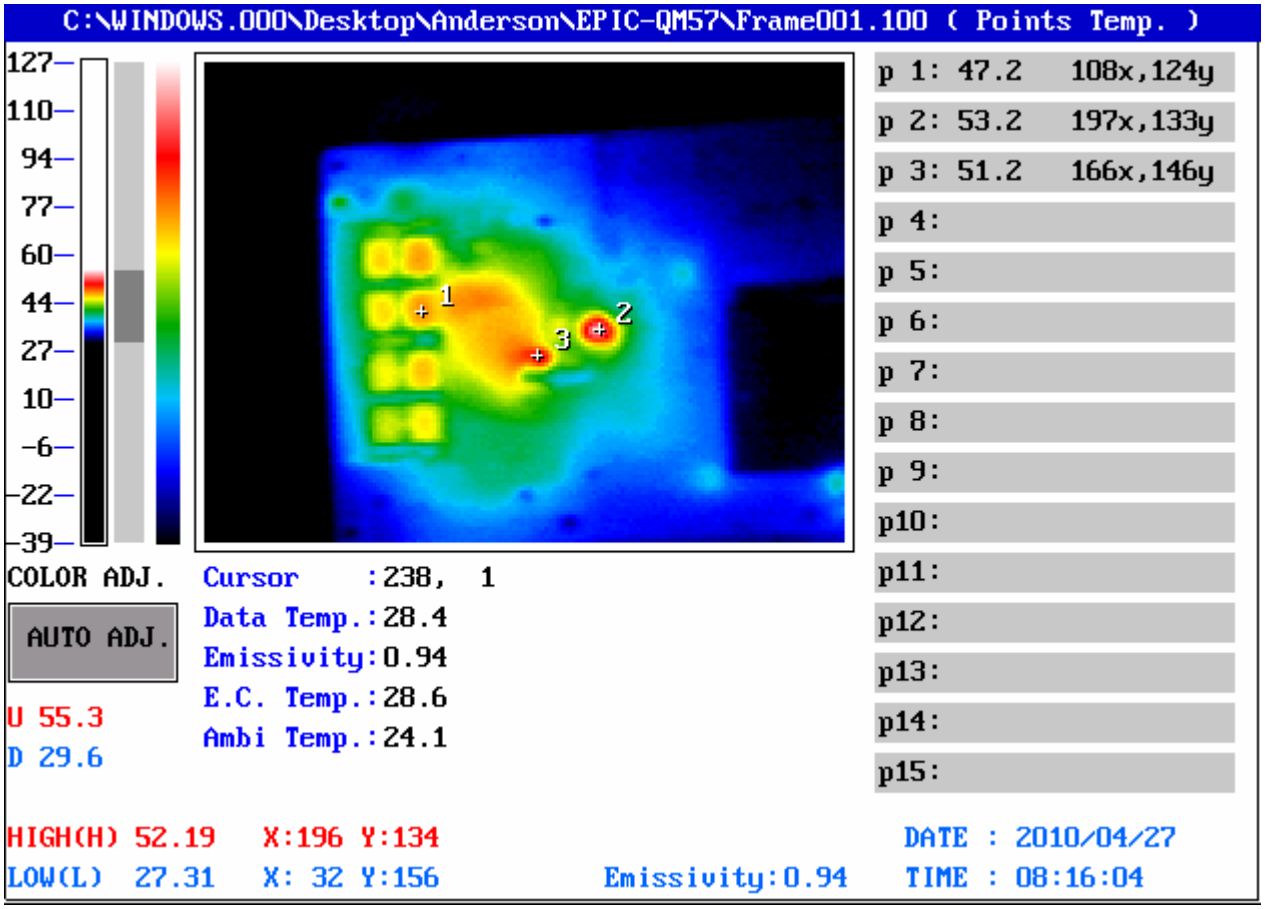
Component Side-3:



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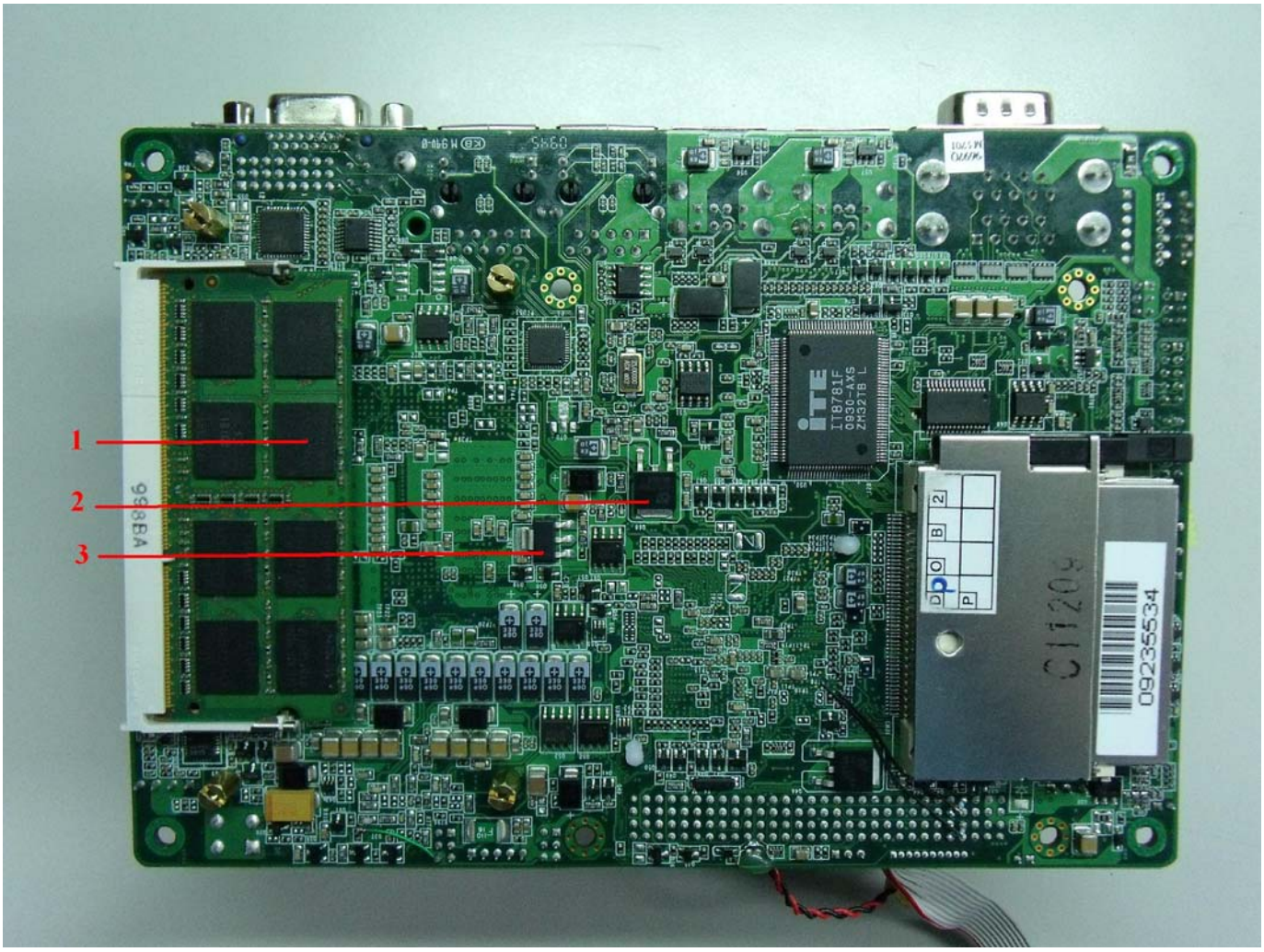

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				24.1℃	60℃	
1	CN37	Memory		47.2	83.1	
2	Q68	(TF)REG.SMD.TO-252.5A linear Regulator.ANPEC.APL1084-UC-TRL	125	53.2	89.1	
3	Q62	(TF)REG.SMD SOT223.1A Adjustable Linear Regulator.ANPEC.APL1117-VC-TRL	125	51.2	87.1	

Note(*):
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3. Judgment Criteria:
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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.
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