ReportNO: 10I080006

IMBI-QM57

Intel QM57 Advance Mini-ITX Board

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Four temperature point need improving**

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

Issue date	Approval	Test Engineer
2010 / 10 / 14	Jansin Lee	Allen Hsu

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Sample Configuration & Quantity Under Test

- **Model name : IMBI-QM57**
- **CPU Board: IMBI-QM57 Rev A0.3**
- **Carrier Board: N/A**
- **CPU: Intel Core I7 CPU 620M @2.67GHz / 32nm / PQI 2400 MHz**
- **Memory: DSL DDR3 SO-DIMM / 1066 2GB / ELPIDA J1108BDSE-DJ-F *2**
- **HDD: Seagate 3.5” SATA H.D 160GB / 7200 RPM / ST3160811AS**
- **BIOS : IMBI-QM57 A1.0 – 09/06/2010**
- **Test Software: Windows XP sp3 / Run Prime95 v26.01**
- **AT Power Supply: Delta ATX Power 350W GPS-350EB-102A**
- **Cooler:**

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Thermal Image Analysis

1. Test Date: 10/14/2010

2. Test Product: IMBI-QM57

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:
   1. GRAPHTEC midi LOGGER TYPE - GL200
   2. IR Scanner: Infrared Camera
      NIPPON AVIONICS CO., LTD.
      Model: TVS-100
      Date of Calibration: 08/10/2010
      Serial Number: 0179L2746

5. Test Condition:
   Component Side-1 (Test by TVS-100): 22.6℃ With cooler
   Component Side-2 (Test by TVS-100): 23.2℃ With cooler

6. Test Software:
   Windows XP sp3 / Run Prime 95 v26.01

7. Take Picture Time:
   After power on 2 hours

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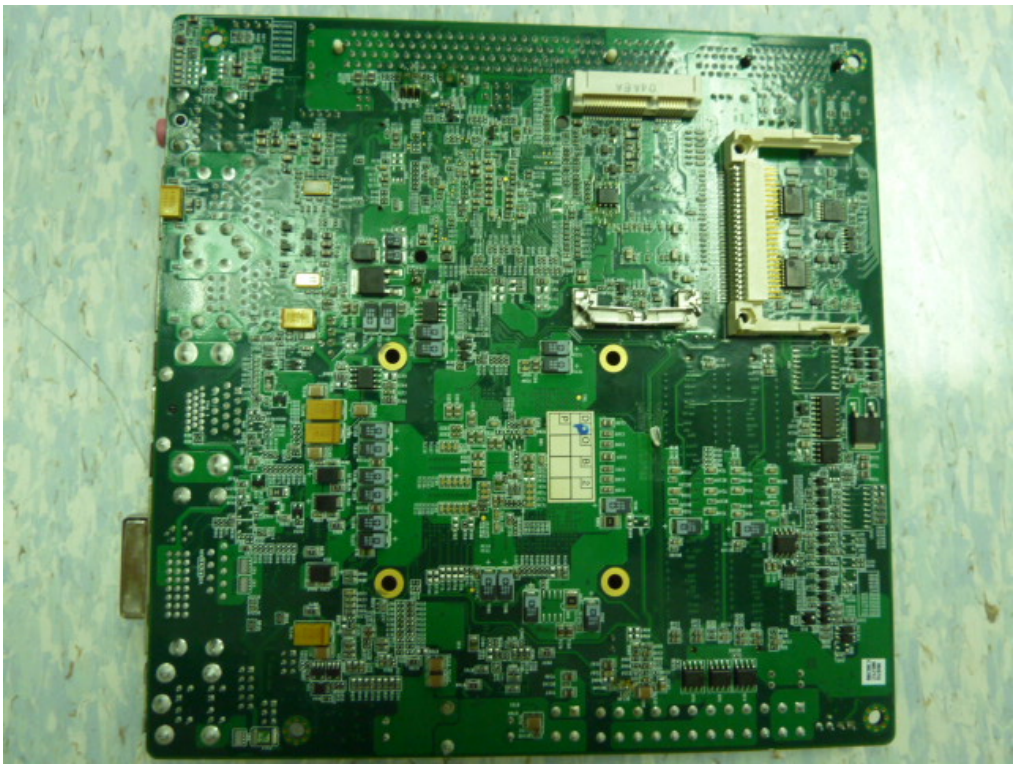
Temperature Profile Test:



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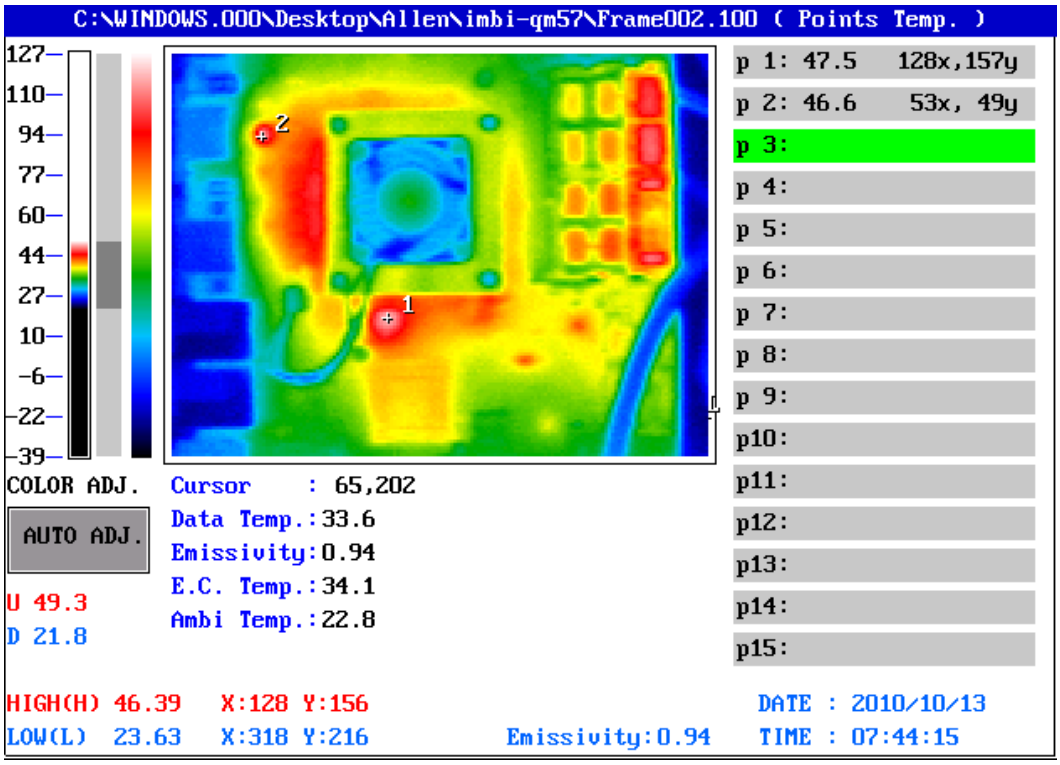
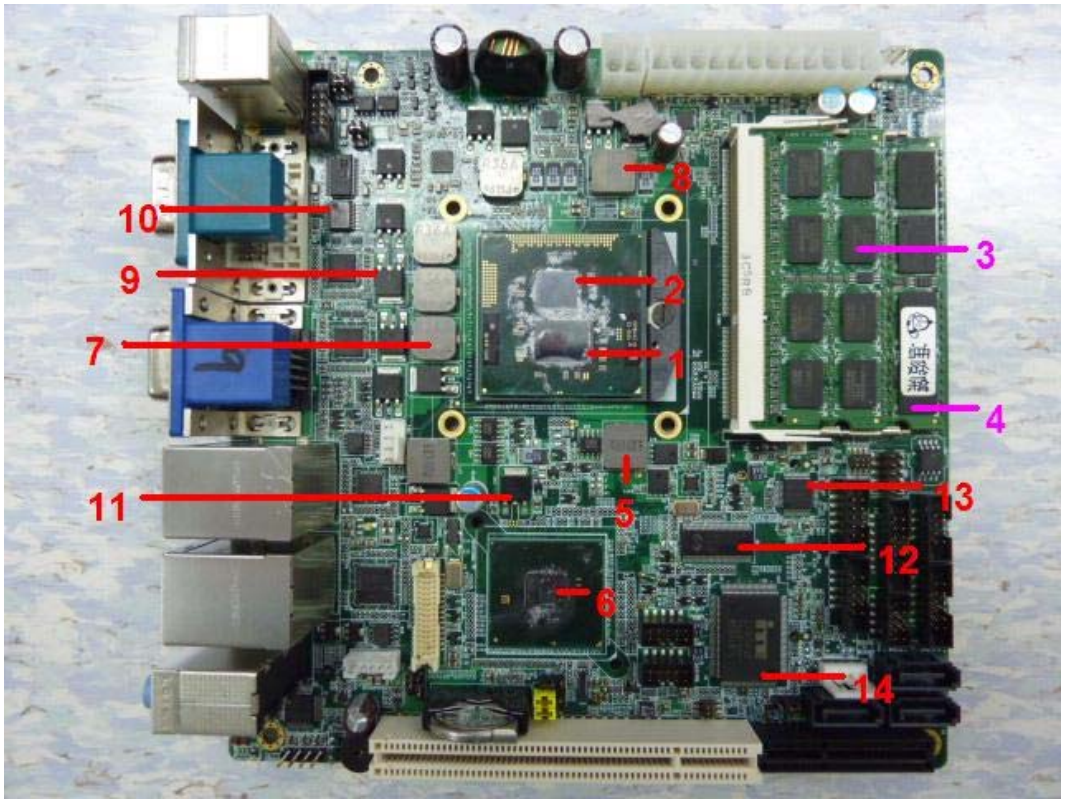
Component Side-1:





Red line – it's front side

Pink line – it's rear side

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Using GRAPHTEC midi LOGGER TYPE - GL200 test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				22.6℃	60℃	
1	CPU Core1	Intel Core I7 CPU 620M @2.67GHz / 32nm / PQI 2400 MHz	105	60.2	97.6	
2	CPU Core2	Intel Core I7 CPU 620M @2.67GHz / 32nm / PQI 2400 MHz	105	62.4	99.8	
3	RAM1	DSL DDR3 SO-DIMM / 1066 2GB / ELPIDA J1108BDSE-DJ-F	95	46.7	84.1	
4	RAM2	DSL DDR3 SO-DIMM / 1066 2GB / ELPIDA J1108BDSE-DJ-F	95	48.7	86.1	
5	L5	(TF)COIL.0.56uH.Irms=25A.Isat=40A.20%.SMD(11.5x10.3 x4.0).2pin.RDC=1.8m Ohm.GOTREND.GSTC104P-R56MN;EE-A061714;1211105 673;TWN	125	57.4	94.8	
6	U2	(TF)IC.SMD.Chipset PCH.INTEL.BD82QM57 SLGZQ;EE-A100524;14S4BD8200;TWN	125	44.2	81.6	
7	L16	(TF)COIL.0.36uH.Irms=34A.20%.MD(11.5x10x4.0).2pin.RD C=0.76m Ohm.Panasonic.ETQP4LR36AFC;EE-A100404;121110367 1;TWN	130	51.4	88.8	
8	L6	(TF)COIL.1uH.20%.SMD.11.5x10.3x4.0mm.DCR=3m ohm.Irms=18Amp.GOTREND.GSTC104P-1R0MN;EE-A07 0616;1211101064;TWN	125	42.6	80	
9	Q48	(TF)PWR.SMD TO-252.30V 58A.N-channel Power MOSFET.FAIRCHILD.FDD8880;EE-A061121;1315888010;T WN	150	41.2	78.6	
10	U29	(TF)IC.SMD SSOP.20Pin RS-232 Driver&Receivers.TI.GD75232DBR;EE-A010945;14S5A23 200;TWN	100	46.0	83.4	
11	U12	(TF)REG.SMD.TO-252 5A Linear Regulator.Diodes.AP1084DG-13;EE-A011431;1314108412 ;TWN	100	52.5	89.9	
12	U6	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR.SILEGO.SLG505YC264BTTR;EE-A081678;1 4S3050500;TWN	100	45.2	82.6	
13	U4	(TF)IC.SMD.LQFP 48P.PCI Express to.PATA Host Controller.JMicron.JMB368-LGGZ0A;EE-A090147;14S40 36800;TWN	100	43.8	81.2	
14	U5	(TF)IC.SMD.QFP128P.Super I/O w/4 COMs.ITE.IT8781F/AX-L;EE-A081754;14S4878100;TWN	100	48.7	86.1	

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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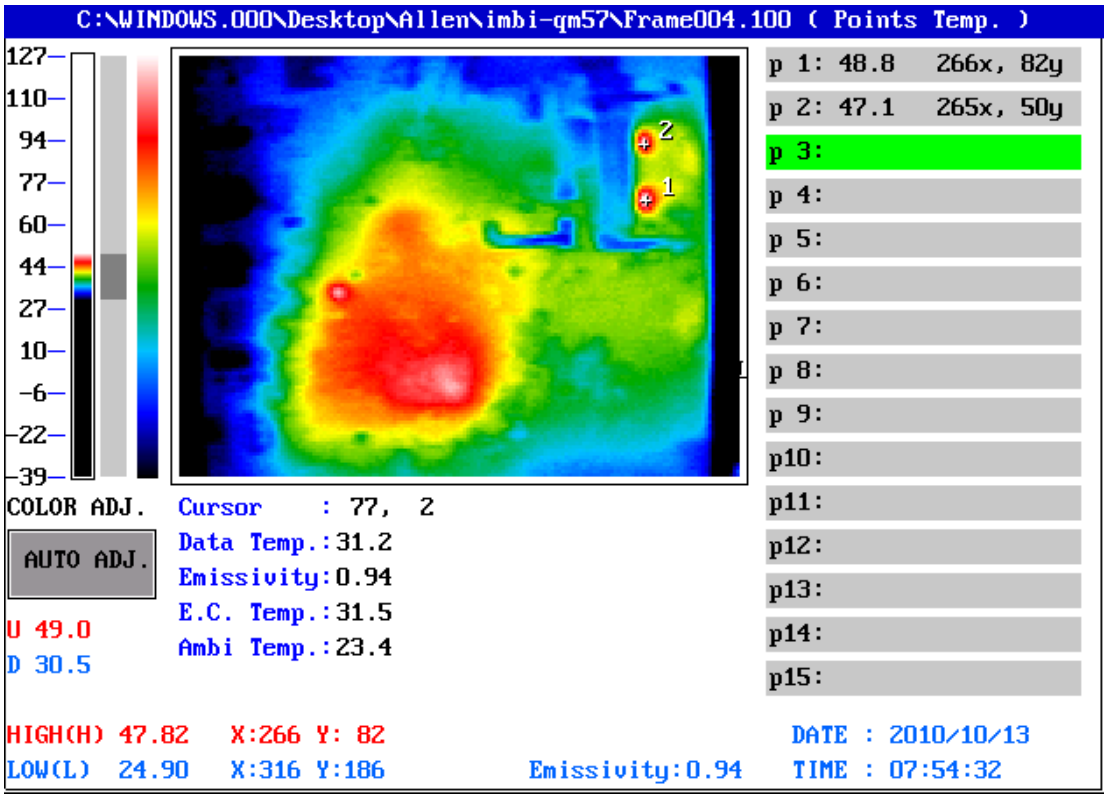
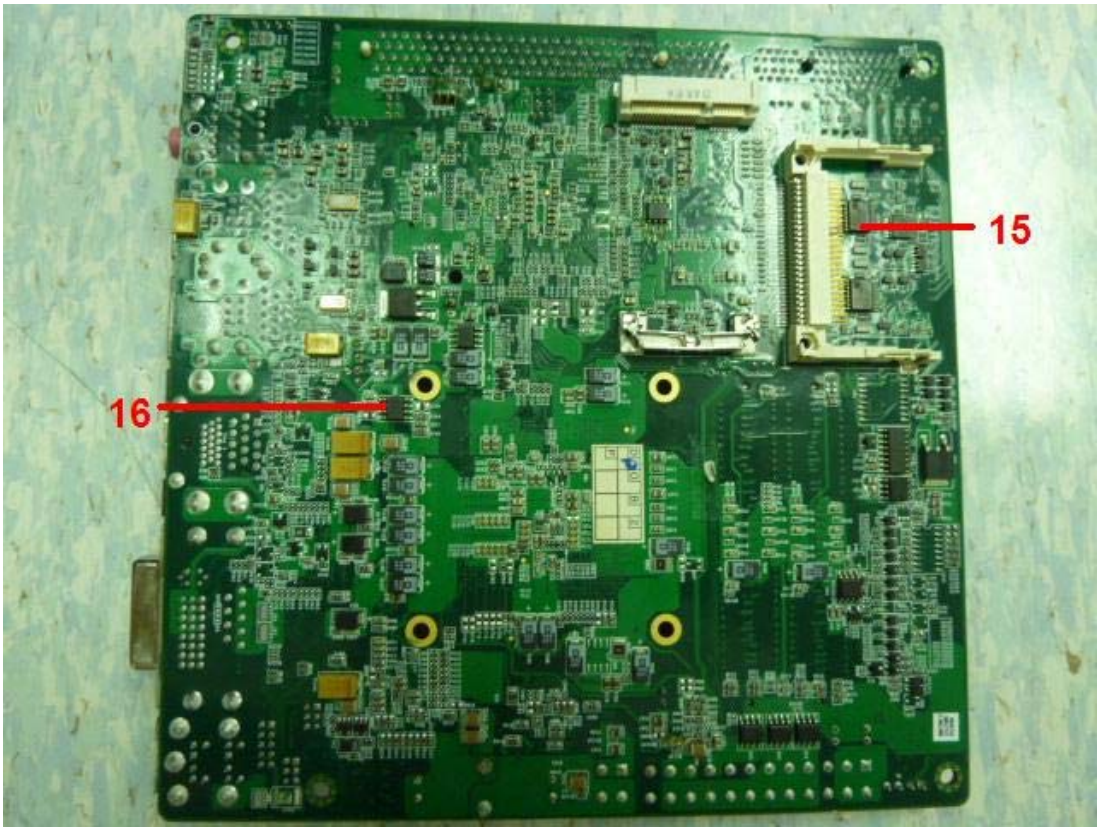
Component Side-2:





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Using GRAPHTEC midi LOGGER TYPE - GL200 test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				23.2℃	60℃	
15	U58	(TF)IC.SMD SSOP.20Pin RS-232 Driver&Receivers.TI.GD75232DBR;EE-A010945;14S5A23200;TWN	100	57.4	94.2	
16	U49	(TF)IC.SMD.SOIC 8Pin.MOSFET Drivers.INTERSIL.ISL6612ACBZ;EE-A061931;14S9661200;TWN	125	56.1	92.9	

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

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