**AAEON Technology INC.**
**ISO-9001/ISO-14001 Certified**
**Industrial Automation PCs**

# SBC-657 ATX A0.2
# Thermal Image Analysis Report

**Release Date: JAN.16, 2003**

| | | |
|---|---|---|
| 2003-01-16 | Wayne Chen | Rex Chang |
| **Issue Stamp** | **DV Manager** | **Test Engineer** |

# Thermal Image Analysis

**Ⅰ. Model Name:** **SBC-657 Rev.A0.2(BIOS:1.1 )**

**Ⅱ. Description:** **Half-size CPU Card**

**Ⅲ. Date:** **MAR. 13, 2002**

**Ⅳ. Measure Site:** **AAEON DV Dept.**

**Ⅴ. Issued by :** **Rex Chang**

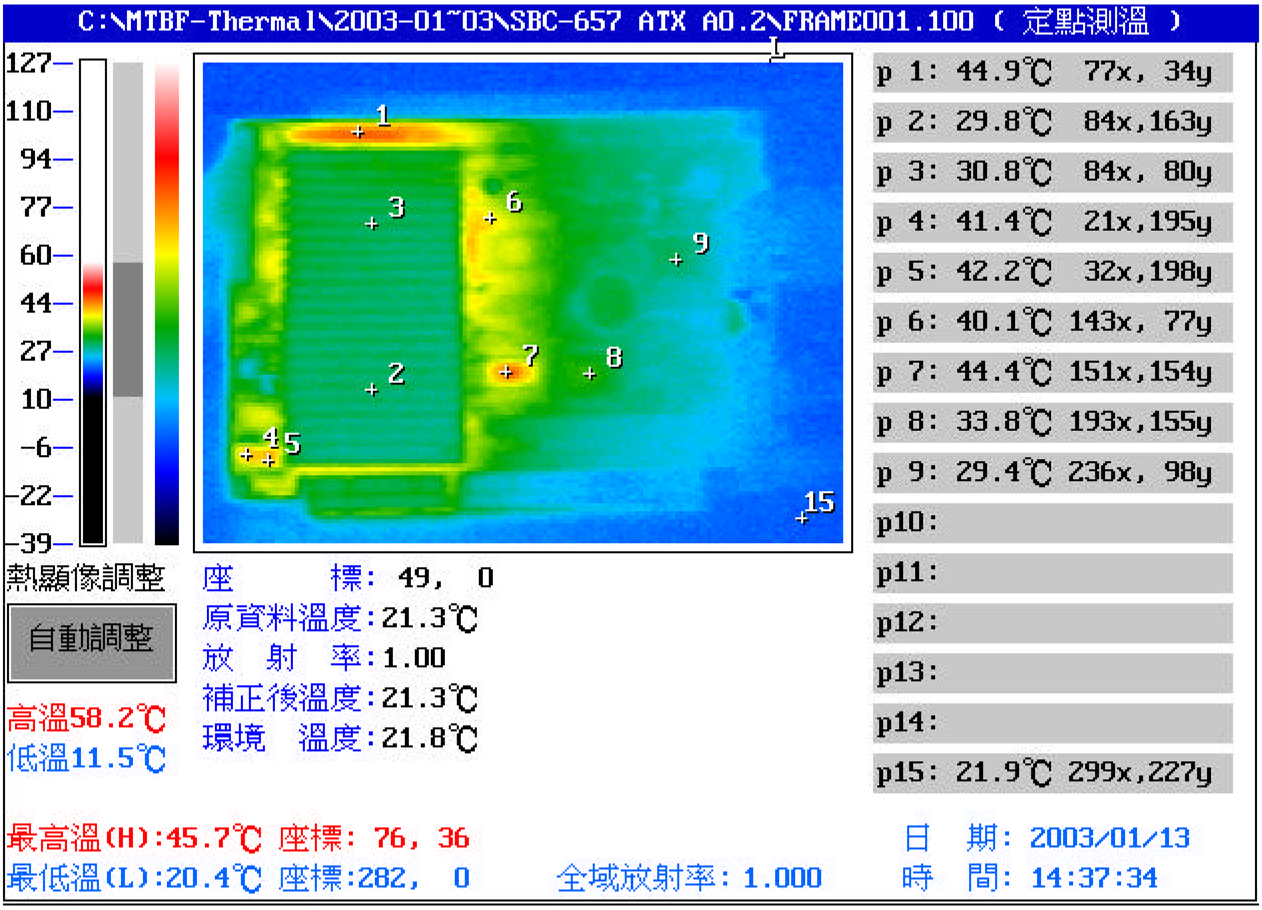
**Ⅵ.Equipment:** **TVS-100 series by NIPPON AVIONICS CO., LTD.**

**Ⅶ. Simulation Environment:**

- **Temperature: 21. 9degrees C**
- **CPU: VIA Eden C3 mobile EBGA 667MHz**
- **RAM: NEC D45128163G5-A80-9JF 128MB SO-DIMM(PC-100)**
- **Compact Flash : PQI 32MB**
- **Application Software: QAPlus5.5**
- **Take Picture Time: Power on 30 minutes after**

# Temperature Profile Test:

## Component Side:



C:\MTBF-Thermal\2003-01˜03\SBC-657 ATX A0.2\FRAME001.100 ( 定點測溫 )

| | | |
|---|---|---|
| p 1: | 44.9℃ | 77x, 34y |
| p 2: | 29.8℃ | 84x,163y |
| p 3: | 30.8℃ | 84x, 80y |
| p 4: | 41.4℃ | 21x,195y |
| p 5: | 42.2℃ | 32x,198y |
| p 6: | 40.1℃ | 143x, 77y |
| p 7: | 44.4℃ | 151x,154y |
| p 8: | 33.8℃ | 193x,155y |
| p 9: | 29.4℃ | 236x, 98y |
| p10: | | |
| p11: | | |
| p12: | | |
| p13: | | |
| p14: | | |
| p15: | 21.9℃ | 299x,227y |

高溫58.2℃
低溫11.5℃

座　　標: 49,　0
原資料溫度:21.3℃
放　射　率:1.00
補正後溫度:21.3℃
環境　溫度:21.8℃

最高溫(H):45.7℃ 座標: 76, 36
最低溫(L):20.4℃ 座標:282,　0
全域放射率: 1.000
日　期: 2003/01/13
時　間: 14:37:34

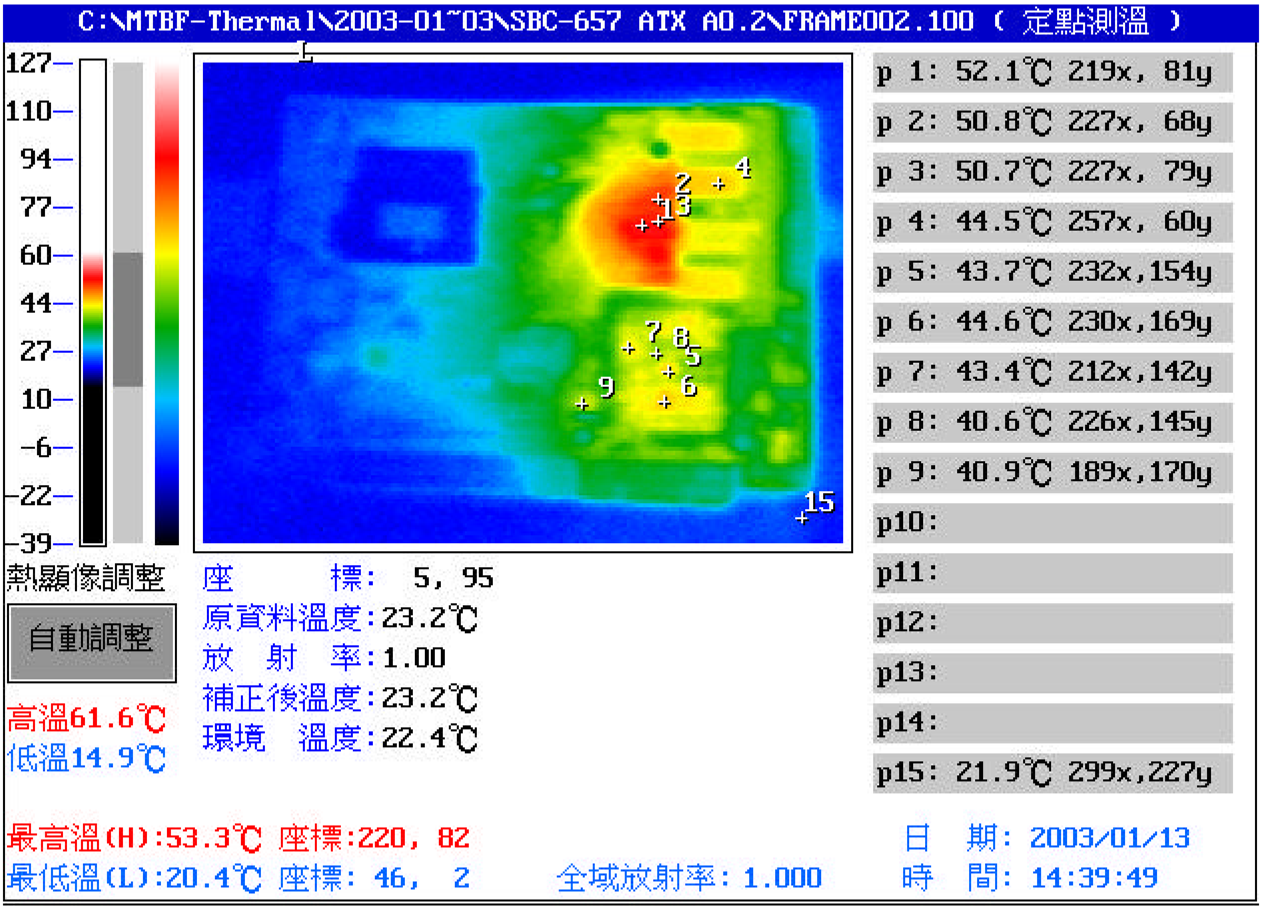
| Point | Position | Describe | Ts | Tm | Note |
|---|---|---|---|---|---|
| 1 | Open Sspec | Reversed side of PCB | | 44.9°C | |
| 2 | U1 | VIA CPU.EBGA 376P.Eden6000S 667MHz 1.1V | | 29.8°C | |
| 3 | U2 | IC.SMD.552P BGA North Bridge.VIA.VT8606 | | 30.8°C | |
| 4 | Q12 | PWR.SMD TO-252 N-Channel.MOSFET RDSon 11mΩ.CET.CEU6031L | | 41.4°C | |
| 5 | Q11 | PWR.SMD TO-252 N-Channel.MOSFET RDSon 11mΩ.CET.CEU6031L | | 42.2°C | |
| 6 | U25 | IC.SMD.SOIC 8P.Ultra Low Dropout Regulator.IR.IRU1150CS | | 40.1°C | |
| 7 | U13 | IC.SMD.SSOP 48P Clock Generator.PhaseLink.PLL202-01 | | 44.4°C | |
| 8 | U16 | IC.SMD.QFP 128P PCI Ethernet Chipset.Realtek.RTL8139C | | 33.8°C | |
| 9 | U29 | IC.SMD.128P QFP Super I/O.Winbond.W83977EF-AW | | 29.4°C | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | The Room Temperature | | 21.9°C | |

1. Operation Temperature (℃):

Ts = Defined by component specification ; Tm = Measured by DV

# Temperature Profile Test:

## Solder Side:



C:\MTBF-Thermal\2003-01~03\SBC-657 ATX A0.2\FRAME002.100 ( 定點測溫 )

p 1: 52.1℃ 219x, 81y
p 2: 50.8℃ 227x, 68y
p 3: 50.7℃ 227x, 79y
p 4: 44.5℃ 257x, 60y
p 5: 43.7℃ 232x,154y
p 6: 44.6℃ 230x,169y
p 7: 43.4℃ 212x,142y
p 8: 40.6℃ 226x,145y
p 9: 40.9℃ 189x,170y
p10:
p11:
p12:
p13:
p14:
p15: 21.9℃ 299x,227y

高溫61.6℃
低溫14.9℃

座標: 5, 95
原資料溫度:23.2℃
放射率:1.00
補正後溫度:23.2℃
環境溫度:22.4℃

最高溫(H):53.3℃ 座標:220, 82
最低溫(L):20.4℃ 座標: 46, 2
全域放射率: 1.000
日期: 2003/01/13
時間: 14:39:49

| Point | Position | Describe | Ts | Tm | Note |
|---|---|---|---|---|---|
| 1 | U2 | Reversed side of PCB (IC.SMD.552P BGA North Bridge.VIA.VT8606) |  | 52.1°C |  |
| 2 | C33 | SP CAP.47uF.6.3V.20%.D SMD.Panasonic.EEFCD0J470R |  | 50.8°C |  |
| 3 | C76 | MCC.0.01uF.50V.10%.0603 SMD |  | 50.7°C |  |
| 4 | Open Sspec | SO DIMM Memory (DIMM1) |  | 44.5°C |  |
| 5 | C83 | SP CAP.82uF.2.5V.20%.D.SMD.Panasonic.EEFCD0E820R |  | 43.7°C |  |
| 6 | C10 | SP CAP.47uF.6.3V.20%.D SMD.Panasonic.EEFCD0J470R |  | 44.6°C |  |
| 7 | C82 | SP CAP.220uF.2.5V.20%.D SMD.Panasonic.EEFUE0E221R |  | 43.4°C |  |
| 8 | U1 | Reversed side of PCB( VIA CPU.EBGA 376P.Eden6000S 667MHz 1.1V) |  | 40.6°C |  |
| 9 | Q13 | REG.SMD.TO-252 5A Linear Regulator.ATC.AP1084D-ADJ |  | 40.9°C |  |
| 10 |  |  |  |  |  |
| 11 |  |  |  |  |  |
| 12 |  |  |  |  |  |
| 13 |  |  |  |  |  |
| 14 |  |  |  |  |  |
| 15 |  | The Room Temperature |  | 21.9°C |  |

**1. Operation Temperature (℃):**

**Ts = Defined by component specification ; Tm = Measured by DV**