EMB-900M

Compact Board. Intel(R) Pentium(R) 4 CPU 3.20GHz(200x16.0)

Thermal Image Analysis Report

Report No: 05E080021

Release Date: JUL 29, 2005

2005/07/29	Wenyuan Yang	YY Lin
Issue Stamp	Manager	Test Engineer

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Thermal Image Analysis

Ⅰ. Model Name :EMB-900M-A0.2

Ⅱ. Description: ASS'Y.EMB-900M.Rev.A0.2
(BIOS Rev: 0.g for 18Bit LVDS (05/19/2005))

Ⅲ. Date: Jul 29, 2005

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : YY Lin

Ⅵ.Equipment:

1. TVS-100 series by NIPPON AVIONICS CO., LTD.

Ⅶ. Simulation Environment:

- **Temperature: Component Side (1)： 24.2 ℃**
  Component Side (2)： 24.2 ℃
  Solder Side (3) ： 25.0 ℃
- **CPU: Intel(R) Pentium(R) 4 CPU 3.20GHz(200x16.0)**
- **RAM-DDRⅡ1: KINGMAX/512MB/DDR2-533/Chipset : ELPIDA E5108AB-5C-E/ R2-2004004**
- **RAM-DDRⅡ2: KINGMAX/1GB/DDR2-533/Chipset : ELPIDA E5108AB-5C-E/R2-2004002**
- **RAM-DDRⅡ3: KINGMAX/512MB/DDR2-533/Chipset : ELPIDA E5108AB-5C-E/ R2-2004003**
- **RAM-DDRⅡ4: KINGMAX/1GB/DDR2-533/Chipset : ELPIDA E5108AB-5C-E/R2-2004001**
- **Application Software: Run HCT (9.5)System Stress Test under Win2000 Professional+SP4**
- **Take Picture Time: After Power on 2 hours.**

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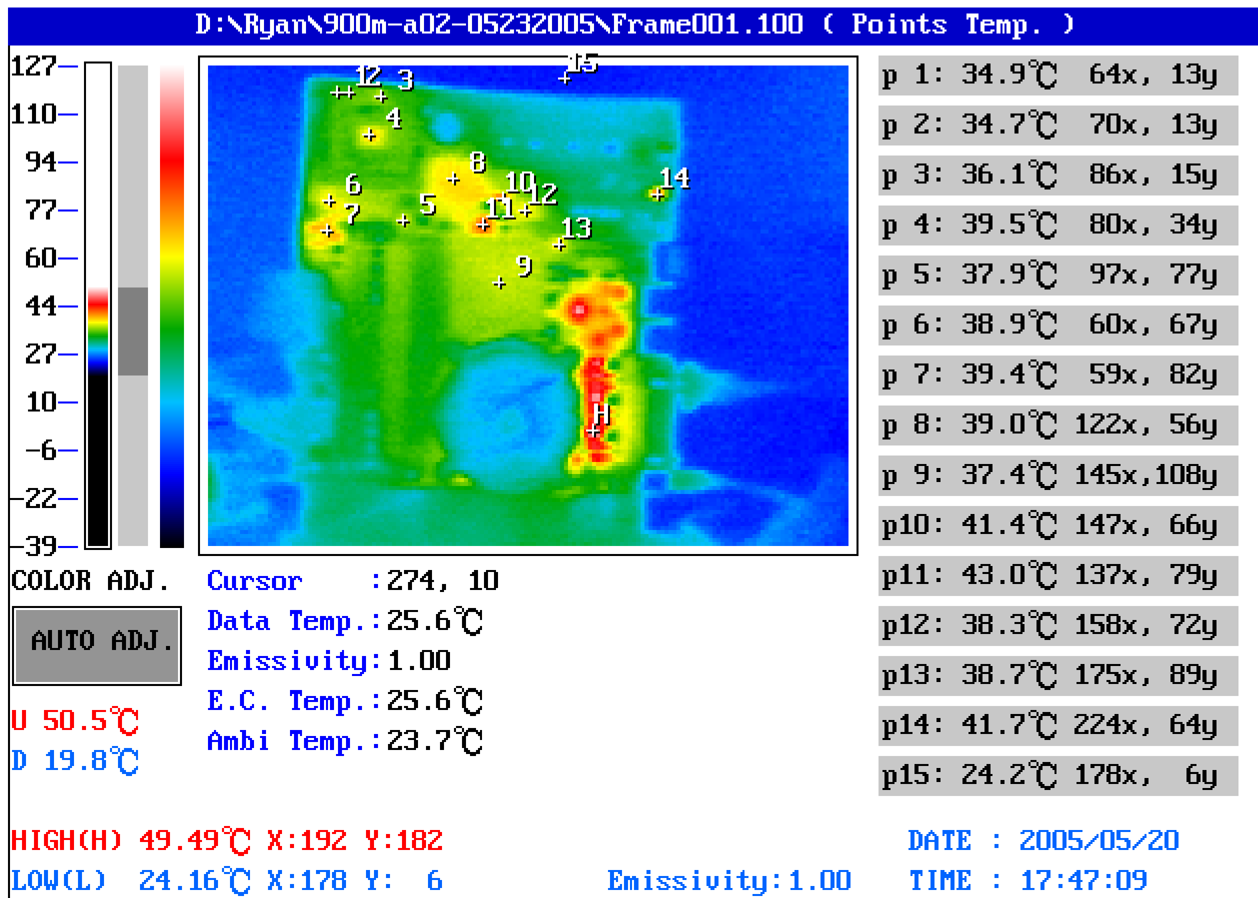
Temperature Profile Test:

Component Side (1) :



Point	Position	Describe	Tc	Tm (25℃)	Tm (60℃)	Note
1	U37	IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARS	-70~115℃	34.9℃	70.7℃	
2	U35	IC.SMD.SO8.RS-485 Transceiver.Analog.ADM485JR	-70~115℃	34.7℃	70.5℃	
3	U32	IC.SMD SO.14Pin.PHILIPS.74LVC06AD	-70~115℃	36.1℃	71.9℃	
4	U31	IC.SMD.QFP128P Super I/O.ITE.IT8712F-A/IX	-30~100℃	39.5℃	75.3℃	
5	U30	IC.SMD.QFN 28P.Power Controller.for Dual Channel DDR.Intersil.ISL6537CR	-30~100℃	37.9℃	73.7℃	
6	L14	COIL.2uH.DIP Wire Size1.0mm.18 材 3wire*6.5TS 20~30Amp. 高創.C6018-10C06YDP	-25~85℃	38.9℃	74.7℃	
7	L15	COIL.1uH.DIP WIRE SIZE 1.0mm.高創.C5026-10A06YDP	-25~85℃	39.4℃	75.2℃	
8	U29	IC.SMD.Chipset ICH6.INTEL.FW82801FB SL7AG	-40~85℃	39.0℃	74.8℃	
9	U26	IC.SMD.Chipset GRANTSDALE 915-GV.INTEL.RG82915GV-SL7W5	-55~150℃	37.4℃	73.2℃	
10	Q18	PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET.APEC.AP70T03H	-30~150℃	41.4℃	77.2℃	
11	Q19	PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET.APEC.AP70T03H	-30~150℃	43.0℃	78.8℃	
12	U24	IC.SMD.QFP128P Super I/O.ITE.IT8712F-A/IX	-30~100℃	38.3℃	74.1℃	
13	U22	IC.SMD LQFP.64P.LVDS Transmitter.CHRONTEL.CH7308	-40~125℃	38.7℃	74.5℃	
14	U2	(TF)IC.SMD.LQFP 48P.7.1 Channel High Definition.Audio Codec.REALTEK.ALC880-VH-LF	-30~100℃	41.7℃	77.5℃	
15		Ambient Temperature		24.2℃		

1. Operation Temperature (℃):
Tc(Case temp.) = Ta(Ambient Temp.)+/-30℃ = Tj(Junction Temp.)-/+25℃

Note: The description in red states which temperature is over the specification of the device.

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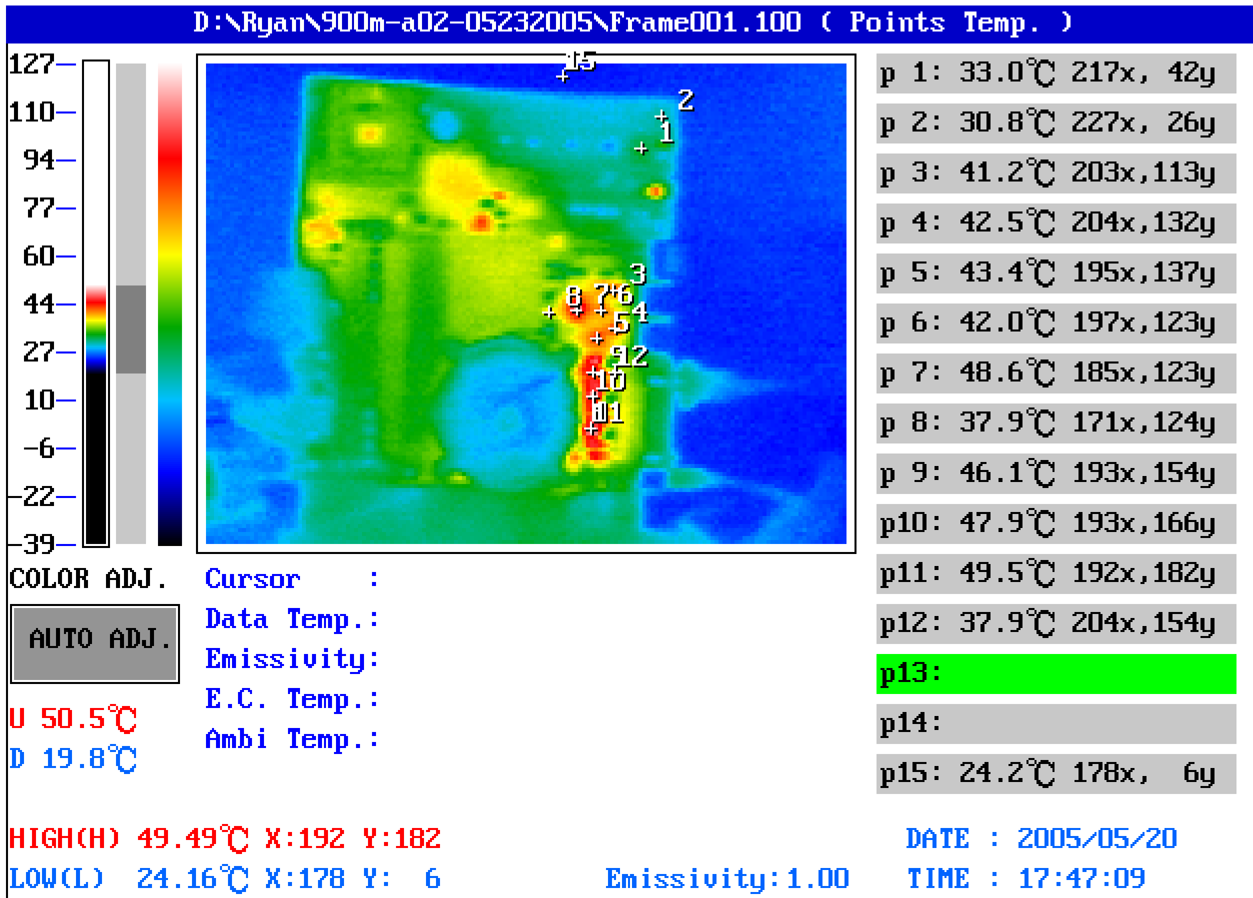
Temperature Profile Test:

Component Side (2) :



Point	Position	Describe	Tc	Tm (25℃)	Tm (60℃)	Note
1	U6	IC.SMD PQFP 128P.PCI to ISA Bridge Chip.Winbond.W83628F	-30~100℃	33.0℃	68.8℃	
2	U1	IC.SMD LQFP 48P.PCI to ISA Bridge Chip.Winbond.W83629D	-30~100℃	30.8℃	65.8℃	
3	U12	IC.SMD QFN 64P.PCI-E GigaBit Ethernet Chipset.Marvell.88E8053-A2-NNC	-55~125℃	41.2℃	77℃	
4	U13	IC.SMD QFN 64P.PCI-E GigaBit Ethernet Chipset.Marvell.88E8053-A2-NNC	-55~125℃	42.5℃	78.3℃	
5	U17	IC.SMD LQFP.48P.DVI Transmitter.CHRONTEL.CH7307C-DE	-45~125℃	43.4℃	79.2℃	
6	Q7	PNP.SMD.SOT-223.1Amp.ON.BCP69T1	-45~125℃	42.0℃	77.8℃	
7	U18	C.SMD.SSOP56.Clock Generator.ICS.ICS954101DF	-30~100℃	48.6℃	84.4℃	
8	Q15	PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET.APEC.AP70T03H	-25~150℃	37.9℃	73.7℃	
9	L2	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	46.1℃	81.9℃	
10	L3	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	47.9℃	83.7℃	
11	L4	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	49.5℃	85.3℃	
12	Q56	PWR.DIP.DPAK CASE.369D(TO-251).N-Channel MOSFET.ON SEMI.NTD60N02	-30~150℃	37.9℃	73.7℃	
13						
14						
15		Ambient Temperature		24.2℃		

1. Operation Temperature (℃):
Tc(Case temp.) = Ta(Ambient Temp.)+/-30℃ = Tj(Junction Temp.)-/+25℃

Note: The description in red states which temperature is over the specification of the device.

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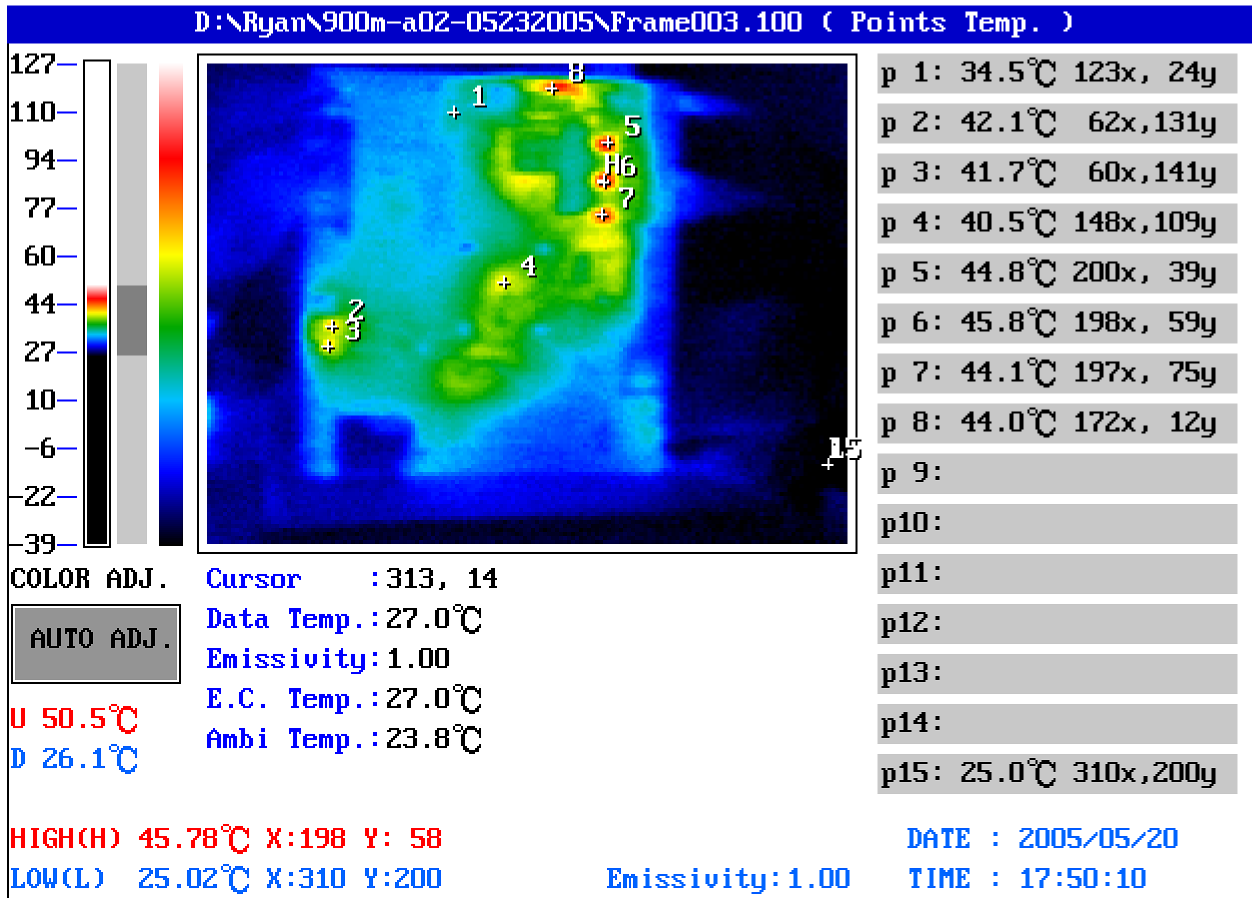
Temperature Profile Test:

Solder Side (3) :



Point	Position	Describe	Tc	Tm (25℃)	Tm (60℃)	Note
1	U48	IC.SMD.SOIC 28Pin PWM Controller.Intersil.ISL6556BCB	-35~125℃	34.5℃	70.3℃	
2	Q53	PWR.SMD.TO-252.N-Channel Power 30V 55A MOSFET. APEC.AP60N03H	-30~125℃	42.1℃	77.9℃	
3	Q54	PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET.APEC.AP70T03H	-30~125℃	41.7℃	77.5℃	
4	U26	IC.SMD.Chipset GRANTSDALE 915-GV.INTEL.RG82915GV-SL7W5	-55~150℃	40.5℃	76.3℃	
5	L4	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	44.8℃	80.6℃	
6	L3	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	45.8℃	81.6℃	
7	L2	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	44.1℃	79.9℃	
8	L11	COIL.0.9uH.DIP Wire Size 1.5mm.EE-1213-0R9P 30Amp.震元.303-00080	-70~115℃	44.0℃	75.8℃	
9						
10						
11						
12						
13						
14						
15		Ambient Temperature		25.0℃		

1. Operation Temperature (℃):
Tc(Case temp.) = Ta(Ambient Temp.)+/-30℃ = Tj(Junction Temp.)-/+25℃

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