EPIC-9457

Thermal Image Analysis Report

Report NO : 09E080025

Release Date: Oct. 26 , 2009

2009/10/26	*Wenyuan Yang*	*Jerry Tsai*
Issue Stamp	**Manager**	**Test Engineer**

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Thermal Image Analysis

Ⅰ. Model Name: EPIC-9457 Rev B0.2

Ⅱ. Description: Intel Navy Pier
EPIC Express Board

Ⅲ. Date: Oct.26, 2009

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Jerry Tsai

Ⅵ.Equipment:
PR1000(TH-046)
TVS-100 series by NIPPON AVIONICS CO., LTD.

Ⅶ. Simulation Environment:
- **Temperature: Component Side-1 :25.0℃ , Component Side-2 : 25.0℃**
- **CPU : Onboard CPU Intel Atom N270 1.6GHz**
- **RAM : Onboard Memory DDR2 667 1GB**
- **BIOS : EPIC-9457B BIOS Rev 0.4 (10/23/2009)**
- **CF Card : N/A**
- **HDD : WD WD400 40GB 3.5" IDE HDD**
- **Application Software: Run Prime95 under Windows XP Professional V2002 Service Pack 3**
- **Take Picture Time: After Power on 2 hours.**

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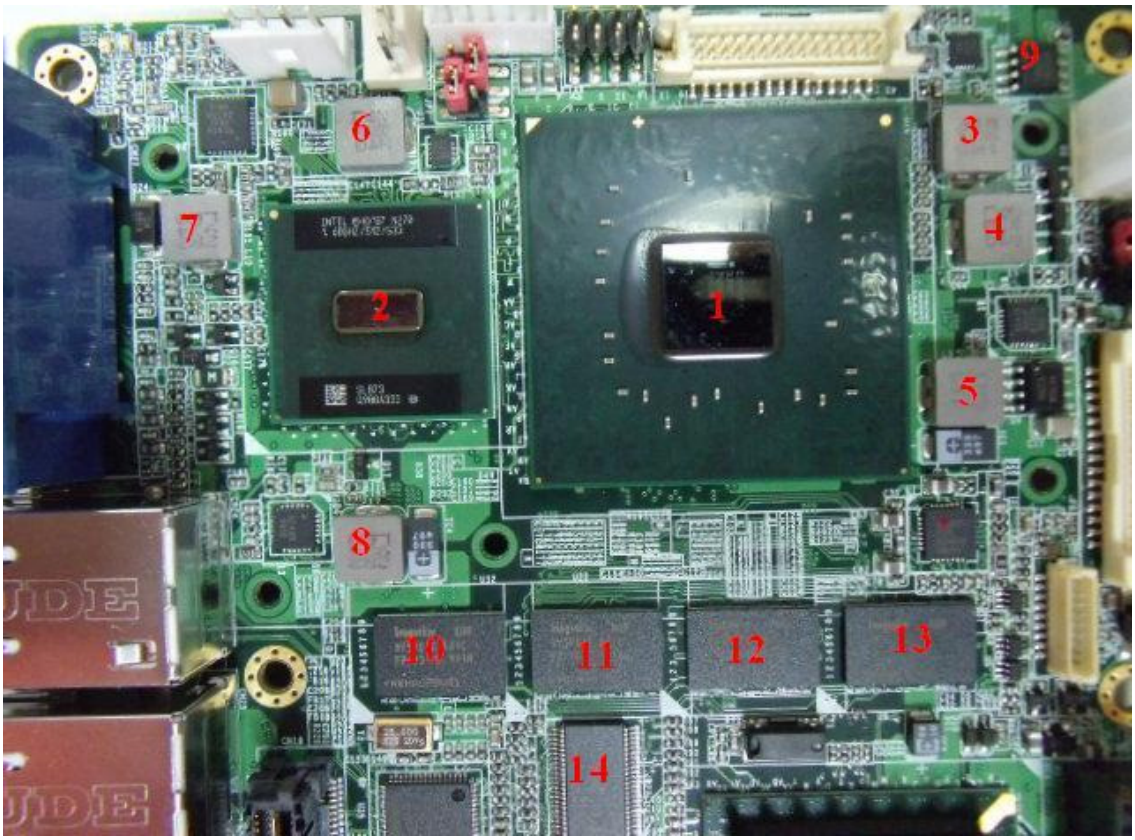
Temperature Profile Test:

Component Side-1:



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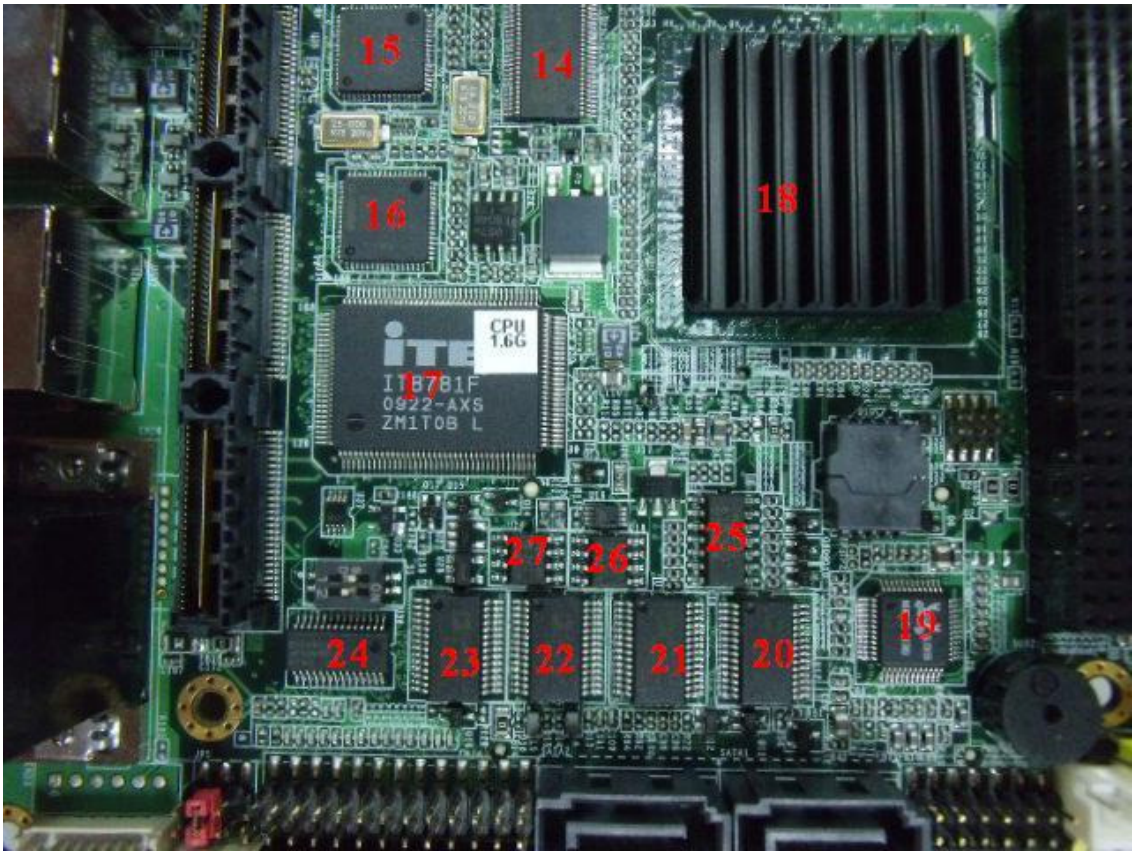

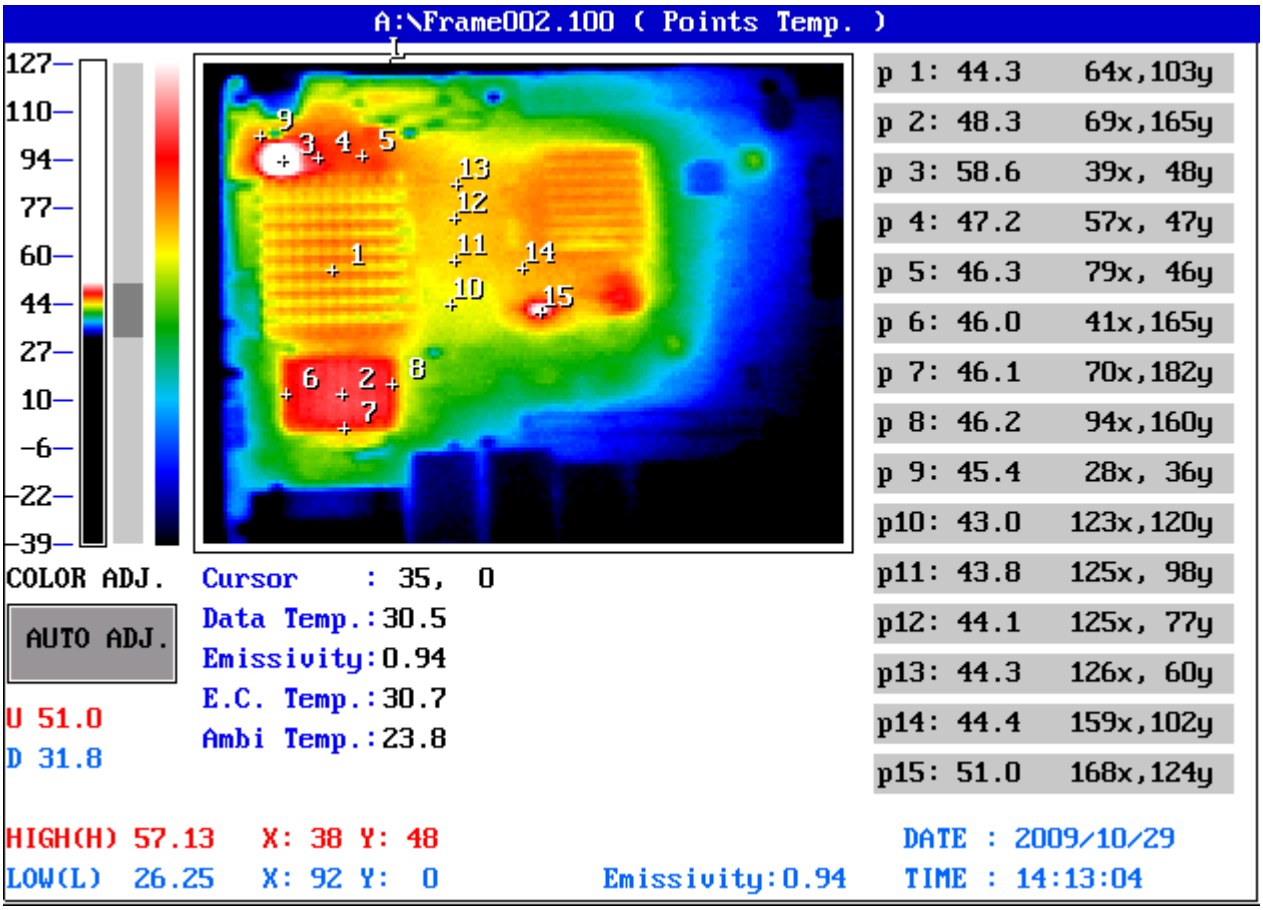

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Point	Position	Describe	Tc (℃)	Tm (25.℃)	Tm (60℃)	Note
1	U15	(TF)IC.SMD.Chipset Intel 945GME Express.Intel.QG82945GME SLA9H	105	44.6	79.6	
2	U38	(TF)Intel CPU.Diamondville.N270.1.6GHz/FSB 533MHz.FCBGA8.437Pins.STEPPING CODE:SLB73.AU80586GE025D	125	49.7	84.7	
3	L2	(TF)COIL.1.5uH.Irms=9A.Isat=18A.20%.SMD(7.3x6.8x3.0).2pin.RDC=15m Ohm.GOTREND.GSTC063P-1R5MN	125	43.2	78.2	
4	L1	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN	125	51.7	86.7	
5	L3	(TF)COIL.1.5uH.Irms=9A.Isat=18A.20%.SMD(7.3x6.8x3.0).2pin.RDC=15m Ohm.GOTREND.GSTC063P-1R5MN	125	44.1	79.1	
6	L6	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN	125	42.7	77.7	
7	L10	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN	125	41.8	76.8	
8	L7	(TF)COIL.2.2uH.SMD.7.3*6.8*3.0mm.+/-20%.DCR=18mohm.Irms=8Amp.GOTREND.GSTC063P-2R2MN	125	43.6	78.6	
9	Q3	(TF)PWR.SMD.SO-8.N-Channel.30V.10A.13.5mΩ.MOSFET.APEC.AP4410GM	125	47.1	82.1	
10	U32	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz.TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	51.2	86.2	
11	U22	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz.TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	54.7	89.7	
12	U14	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz.TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	56.6	91.5	

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13	U9	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz. TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	57.5	92.5	
14	U23	(TF)IC.SMD.TSSOP 64P.CLOCK GENERATOR.IDT.9LPRS501PGLF	100	59.6	94.6	
15	U35	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	100	50.3	85.3	
16	U34	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	100	47.4	82.4	
17	U30	(TF)IC.SMD.QFP128P.Super I/O w/4 COMs.ITE.IT8781F/AX-L	100	45.1	80.1	
18	U11	(TF)IC.SMD.Chipset ICH7M.Intel.NH82801GBM SL8YB	100	58.3	93.3	
19	U8	(TF)IC.SMD LQFP 48Pin.6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF	100	47.1	82.1	
20	U12	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ	115	42.2	77.2	
21	U16	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ	115	40.3	75.3	
22	U21	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ	115	40.9	75.9	
23	U29	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ	115	38.1	73.1	
24	U36	(TF)IC.SMD.QSOP 28P.IEEE 1284 Termination Network.CMD.PACSZ1284-04QR	115	36.7	71.7	

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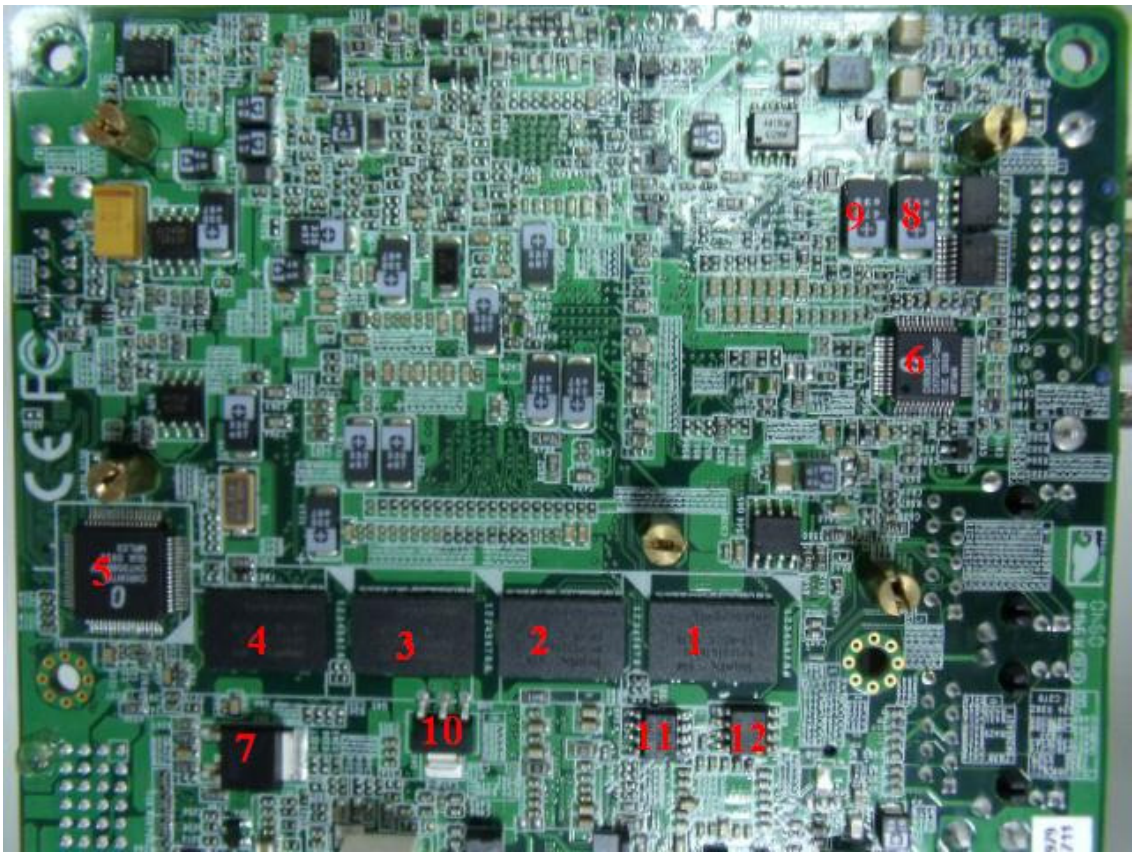
25	U13	(TF)IC.SMD SO.14Pin.PHILIPS.74LVC07AD-T	125	43.8	78.8	
26	U18	(TF)IC.SMD.SO8.RS-485 Transceiver.Analog.ADM485JRZ	115	40.7	75.7	
27	U24	(TF)IC.SMD.SO8.RS-485 Transceiver.Analog.ADM485JRZ	115	40.3	75.3	

1.Tm (Measured operation temperature) must be less than Tc (Specified case temperature) +5 degree C
2.Any Tm value showed in red words which meaning the value is over the Tc+ 5 degree C of this device specification
3.The Tm value showed in BLUE words which meaning the MEASUREDoperation temperature within (Tc- 10℃)>Tm> (Tc+ 5℃),particular thermal dissipation design is needed if you wanna to utilize this board in an enclosure box or chassis.
4.Any Tm value showed in RED words which meaning the operation temperature is over(Tc+ 5℃).The result is "Failed" and must be solved before the product launched into next design stage.

.Temperature Profile Test:

Component Side-2:



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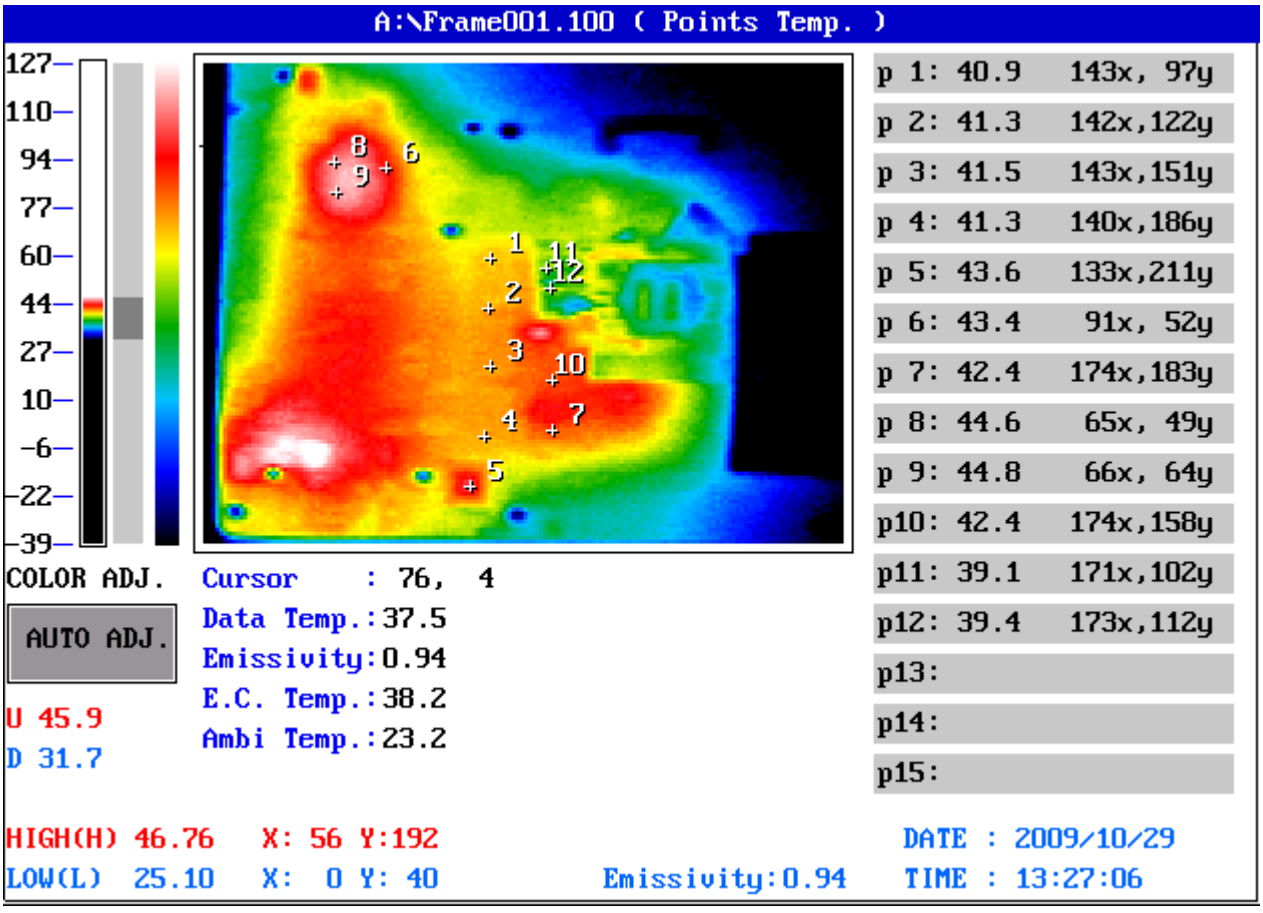

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Point	Position	Describe	Tc (℃)	Tm (25℃)	Tm (60℃)	Note
1	U44	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz. TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	50.3	85.3	
2	U45	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz. TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	55.1	90.1	
3	U48	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz. TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	54.9	89.9	
4	U52	(TF)IC.DDRII-SDRAMDDRII-SDRAM.64Mbx16(bit).SMD.667MHz. TFBGA 84P.1.8V.HYNIX.HY5PS1G1631C(L)FP-Y5	95	55.2	90.2	
5	U41	(TF)IC.SMD.LQFP 64Pin.LVDS Transmitter.CHRONTEL.CH7308B-TF	115	54.0	89	
6	U56	(TF)IC.SMD LQFP.48P.DVI Transmitter.CHRONTEL.CH7307C-DEF	115	52.3	87.3	
7	U43	(TF)REG.SMD.TO-252 5A Linear Regulator.Diodes.AP1084DG-13	100	54.9	89.9	
8	TC32	(TF)POSCAP.470uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SMD. SANYO.2R5TPE470M9	135	49.4	84.4	
9	TC31	(TF)POSCAP.470uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SMD. SANYO.2R5TPE470M9	135	52.1	87.1	
10	U46	(TF)REG.SMD.SOT-223.700mA.Low Dorpout Regulator.ANPEC.APL5708R-25VC-TRL	125	50.4	85.4	
11	U49	(TF)IC.SMD.SOIC.8P.8K SPI Bus Serial EEPROM.ATMEL.AT25080AN-10SU-2.7	125	43.4	78.4	

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12	U53	(TF)IC.SMD.SOIC-8P.2K Serial EEPROM.ATMEL.AT24C02BN-SH-T	125	46.1	81.1	
13	TC30	(TF)POSCAP.330uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SMD. SANYO.2R5TPE330M9	105	37.0	72	
14	TC29	(TF)POSCAP.330uF.2.5V.20%.D2(7.3*4.3*1.8).9mohm.3900mA.SMD. SANYO.2R5TPE330M9	105	35.9	70.9	
15	Q42	(TF)PWR.SMD.SO-8.N-Channel.30V.10A.13.5mΩ.MOSFET.APEC.A P4410GM	125	39.1	74.1	
16	U50	(TF)IC.SMD.SOIC.8P.8K SPI Bus Serial EEPROM.ATMEL.AT25080AN-10SU-2.7	125	48.4	83.4	

1.Tm (Measured operation temperature) must be less than Tc (Specified case temperature) +5 degree C
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