PCM-9452

Intel 945 GM / ICH7M(DH) Compact Board

Thermal Image Analysis Report

Report NO:07E080010

Release Date: August 16, 2007

2007/08/16	*Wenyuan Yang*	*Kevin Hsu*
Issue Stamp	**Manager**	**Test Engineer**

AAEON Technology Inc.
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Thermal Image Analysis

Ⅰ. Model Name: PCM-9452 A0.1

Ⅱ. Description: Intel 945 GM / ICH7M(DH) Compact Board

Ⅲ. Date: August 16, 2007

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Kevin Hsu

Ⅵ.Equipment:

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

Ⅶ. Simulation Environment:

- **Temperature: Component Side-1 : 24.7℃**
  Component Side-2 : 25.0.℃
  Solder Side-1 : 24.7℃
  Solder Side-2 : 25.1℃
- **CPU : Intel Core 2 Duo T7400 2.16GHz**
- **RAM : Kingston (7KE12D9HNL)2GB DDR2 667MHz**
- **BIOS : PCM-9452 BIOS Rev 0.2(07/24/2007)**
- **CF Card : N/A**
- **HDD: Western Digital WD800JB-00JJC0 80GB IDE HDD**
- **Application Software: Run Prime95 under Windows XP Professional V2002 Service Pack 2**
- **Take Picture Time: After Power on 2 hours.**

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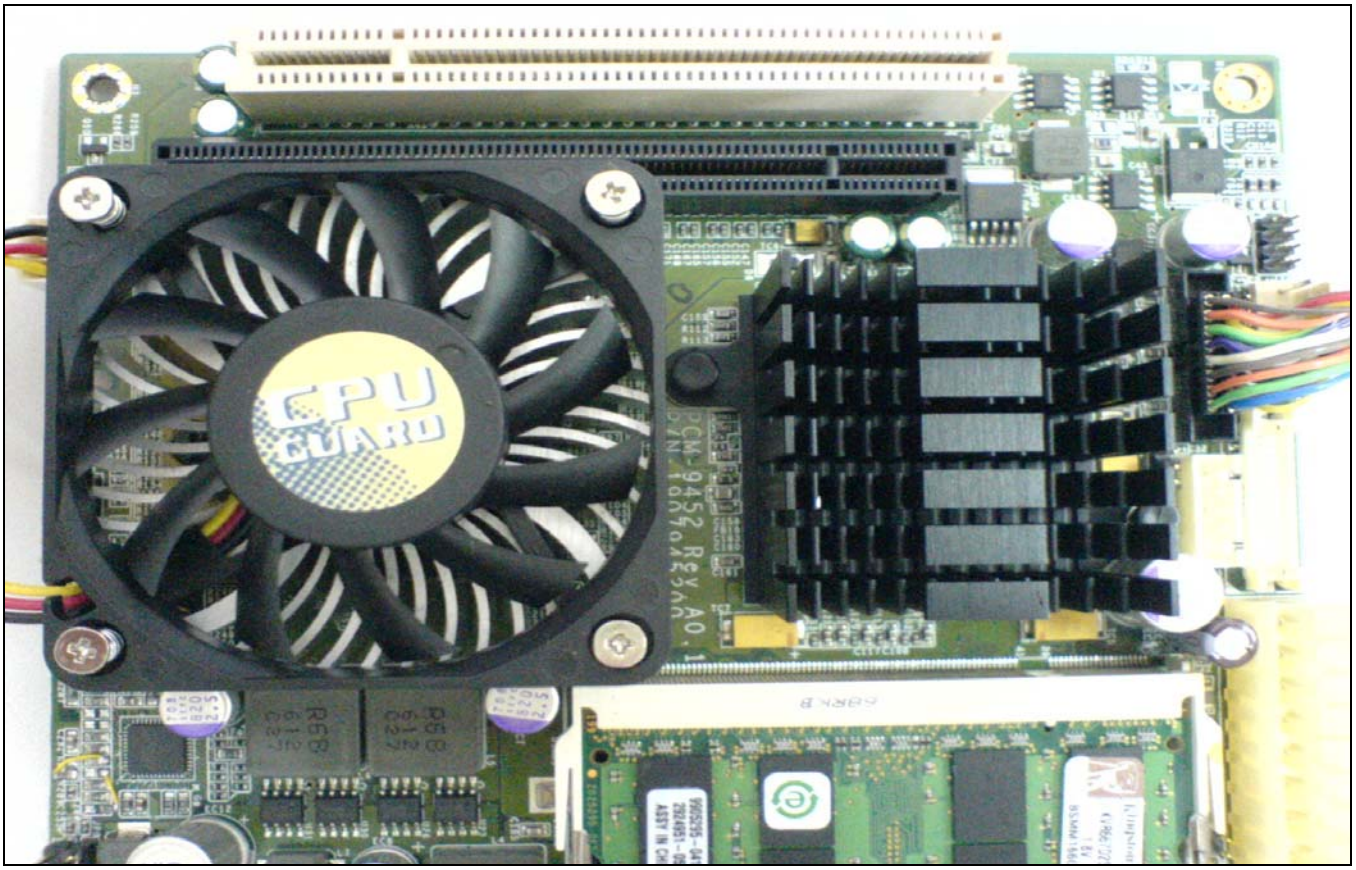
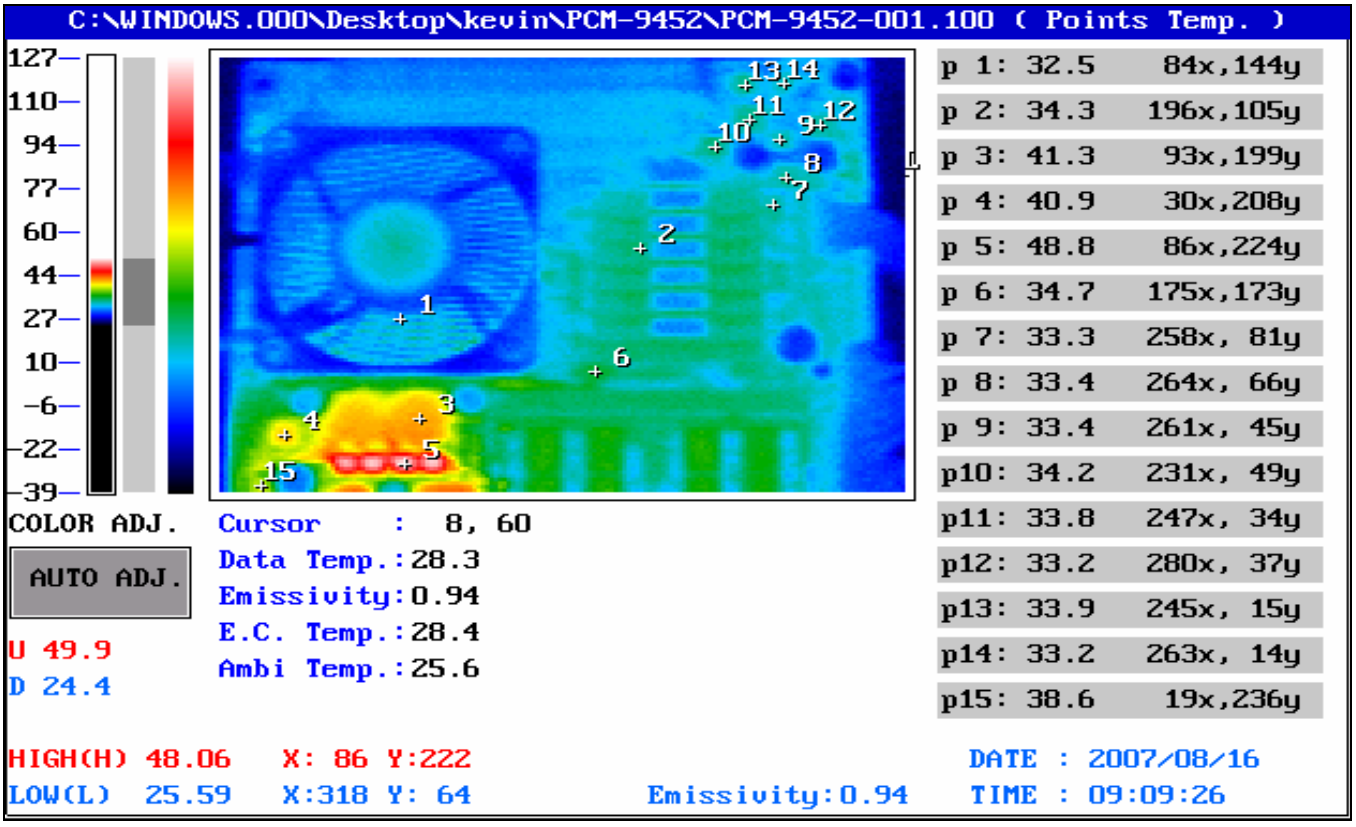
Temperature Profile Test:

Component Side-1 :





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Point	Position	Describe	Tc (℃)	Tm (25.6℃)	Tm (60℃)	Note
1	U28	Intel Core 2 Duo 2.16GHz T7400 (Merom) FSB 667MHz L2 Cache 4MB	0~100	32.5	66.9	
2	U10	(TF)IC.SMD.Chipset Intel 945GM Express.Intel.QG82945GM SL8Z2; EE-A060321;14S4294501;TWN	0~105	34.3	68.7	
3	L5	(TF)COIL.0.56uH.+-20%.DIP.35A.GOTREND.GMAR-121010-P-0R56-M; EE-A050771;1211105671;TWN	-55~125	41.3	75.7	
4	U35	TF)IC.SMD.QFN 48P.IMVP6 Two Phase PWM.Intersil.ISL6262CRZ-T; EE-A060306;14S3626200;TWN	-10~125	40.9	74.9	
5	U26	(TF)PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET. APEC.AP70T03GH;EE-A031083;1315700310;TWN	-30~125	48.8	83.2	
6	TC7	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET.T520 Series; EE-A040450;118*6*****;TWN	0~105	34.7	69.1	
7	TC1	(TF)POSCAP.[68,100,150,220,330,470,680,1000]uF.[2.5,4.0,6.3,10.0]V. 20%.[9,12,15,18,25,35]mohm.SMD.SANYO.TPE series;EE-A060324; 11896*****;TWN	-55~105	33.3	67.7	
8	U3	(TF)IC.SMD.QSOP 16P.VGA ESD Protection Array.CMD. CM2009-02QR;EE-A041548;14S2200900;TWN	-40~85	33.4	67.8	
9	Q7	(TF)PWR.SMD SO-8.P-Channel MOSFET.Vgs=-4.5V/-10V.Ids=-13A. Rds=13m/9m.Vds=-30V.ANPEC.APM4429KC-TRL;EE-A050738; 1315442910;TWN	0~125	33.4	67.8	
10	Q8	(TF)REG.SMD.TO-252.5P.3A.0.45V LOW DROPOUT REGULATOR. ANPEC.APL1582UC-TRL;EE-A040937;1314158210;TWN	0~125	34.2	68.6	
11	L3	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28m ohm.Irms=6Amp. GOTREND.GSTC063P-3R3MN;EE-A061509;121110336L;TWN	-55~125	33.8	68.2	
12	Q2	(TF)PWR.SMD.TO-252.N-Channel PowerMosfet.ON SEMI. NTD60N02RT4G;EE-A060014;1315600210;TWN	0~100	33.2	67.6	
13	U7	(TF)Dual N-Channel.SMD SO-8.2.5V MOSFET.APEC.AP9926GM; EE-A030055;1315992601;TWN	-30~125	33.9	68.3	
14	U1	(TF)IC.SMD SO8.ACPI Power Controller.Intersil.ISL6506BCBZ; EE-A041672;14S4650601;TWN	0~100	33.2	67.6	
15	L8	(TF)COIL.1.5uH.Irms=9A.Isat=18A.20%.SMD(7.3x6.8x3.0). 2pin.RDC=15mOhm.GOTREND.GSTC063P-1R5MN;EE-A061612; 121110156A;TWN	-55~125	38.6	73.0	

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

Any Tm value showed in red words which meaning the value is over the Tc+ 5 degree C of this device specification

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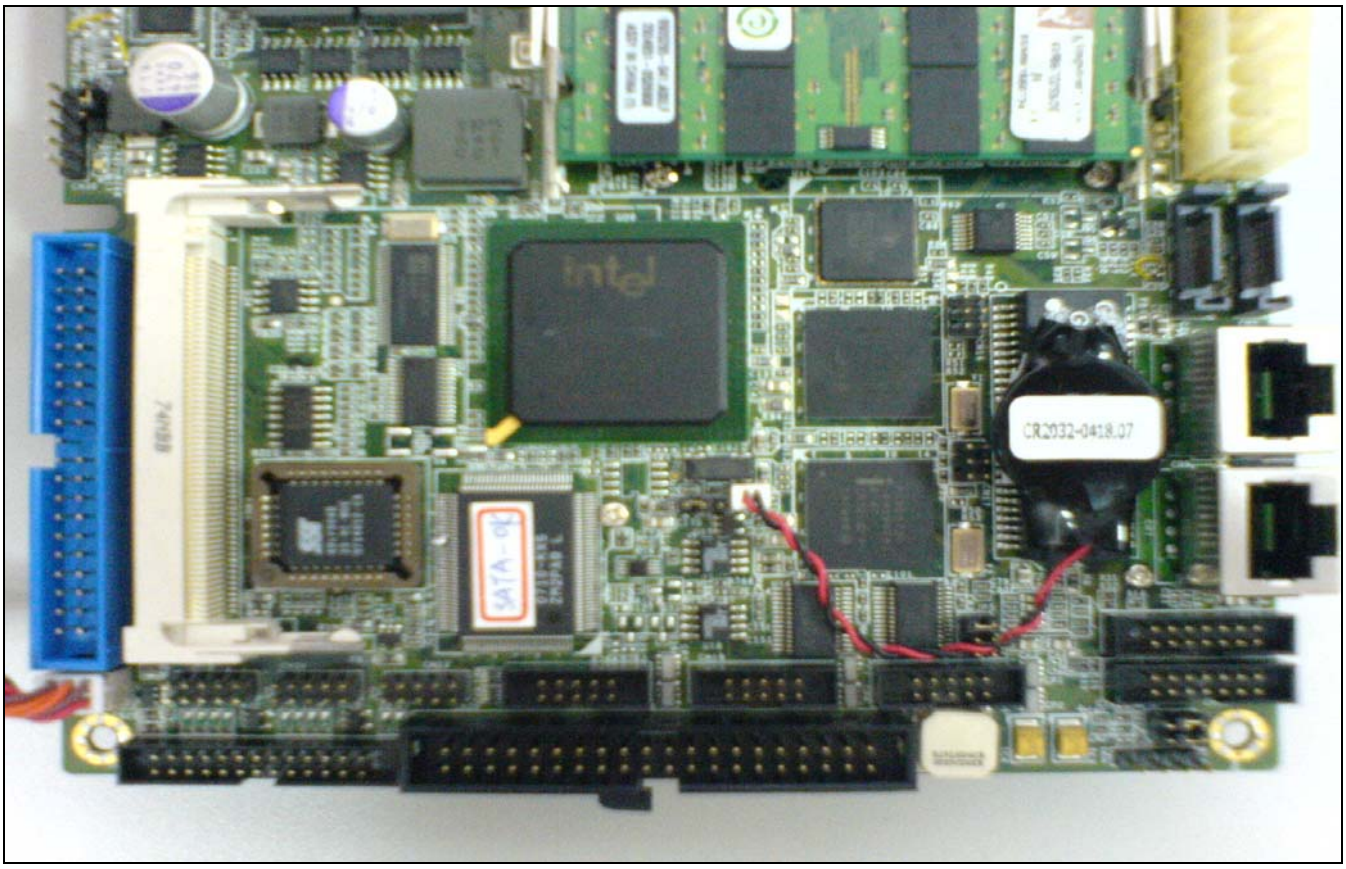
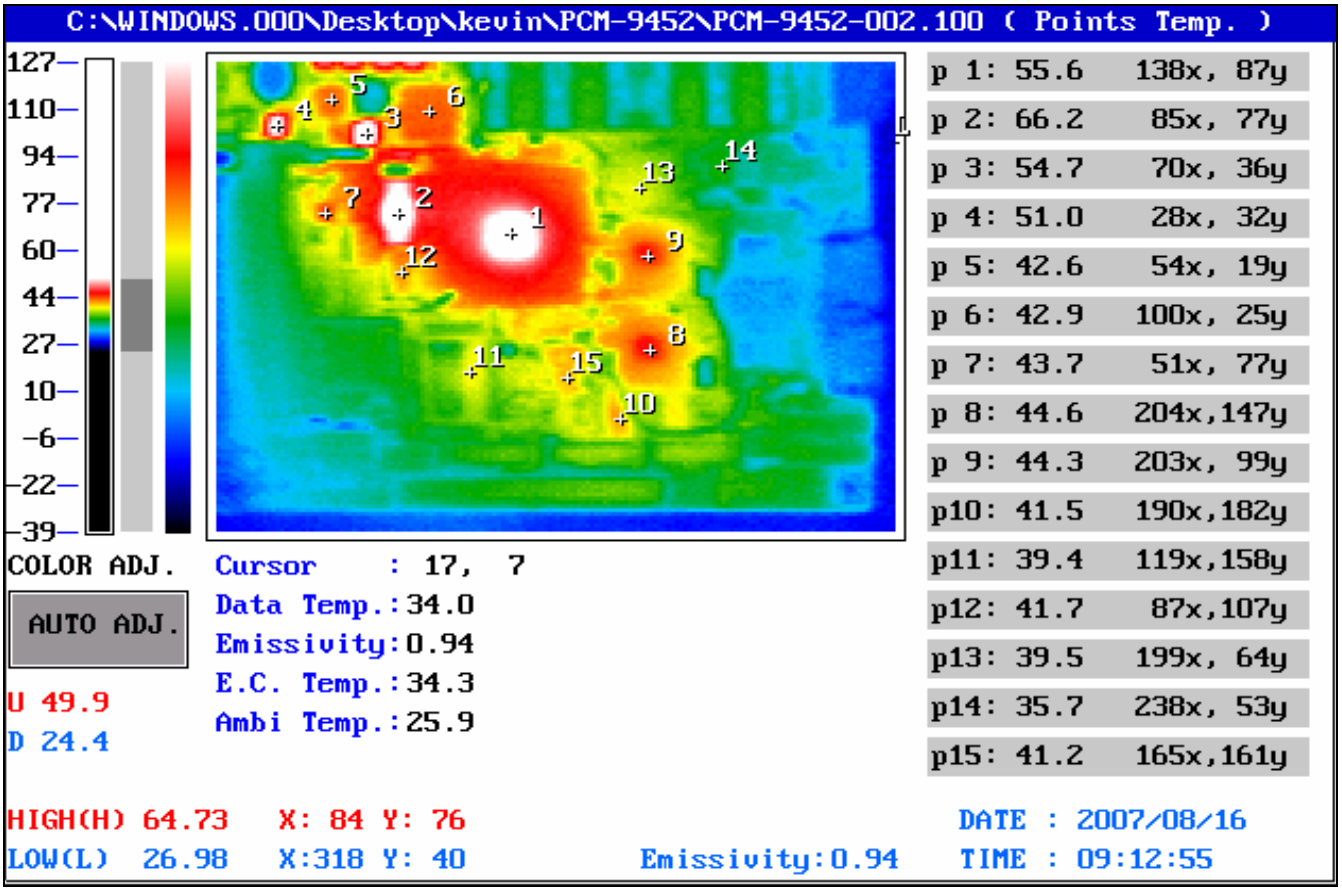
Component Side-2 :





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Point	Position	Describe	Tc (℃)	Tm (25.9℃)	Tm (60℃)	Note
1	U20	(TF)IC.SMD.Chipset ICH7M.Supports Digitial HOME&RAID.Intel. NH82801GHM SL8YR;EE-A071252;14S428010E;TWN	0~100	55.6	89.7	
2	U25	(TF)IC.SMD.TSSOP 56P.CLOCK GENERATOR.ICS. ICS954226AGLF;EE-A060018;14S3422600;TWN	0~115	66.2	100.3	
3	Q9	(TF)PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET. APEC.AP70T03GH;EE-A031083;1315700310;TWN	-30~125	54.7	88.8	
4	U37	(TF)IC.SMD SO-8.1.5A.Low Dropout Regulator.Adj(1.2~4.8V). SEMTECH.SC1565IS-TRT;EE-A031087;14S3156500;TWN	-10~115	51.0	85.1	
5	L7	(TF)COIL.1.5uH.Irms=9A.Isat=18A.20%.SMD(7.3x6.8x3.0).2pin.RDC=15 mOhm.GOTREND.GSTC063P-1R5MN;EE-A061612;121110156A;TWN	-55~125	42.6	76.7	
6	L4	(TF)COIL.1.5uH.20%.DCR=3.4mOhm.Idc=23A.13.8*12.8mm.SMD. GOTREND.GSTC135P-1R5MF;EE-A060441;1211101569;TWN	-55~125	42.9	77.0	
7	U34	(TF)IC.SMD SOP 8P.Clock Output Buffer.ICS.ICS9112M-16LF-T; EE-A990428;14S4911216;TWN	0~100	43.7	77.8	
8	U13	TF)IC.SMD.BGA 196P.GigaBit Ethernet Chipset.Intel.PC82573L; EE-A061536;14S4825730;TWN	0~100	44.6	78.7	
9	U12	TF)IC.SMD.BGA 196P.GigaBit Ethernet Chipset.Intel.PC82573L; EE-A061536;14S4825730;TWN	0~100	44.3	78.4	
10	U14	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ; EE-A970562;14S4021301;TWN	-40~85	41.5	75.6	
11	U22	(TF)IC.SMD.QFP128P Super I/O.ITE.IT8712F/KX-L;EE-A061481; 14S4871204;TWN	0~100	39.4	73.5	
12	U24	(TF)IC.SMD TSSOP28.Trusted Platform Module.Infineon. SLB9635TT1.2;EE-A071258;14S4963500;TWN	0~100	41.7	75.8	
13	U11	(TF)IC.SMD.MicroStar BGA 144P.CardBus contorllor.TI.PCI1510ZG U;EE-A070860;14S4151000;TWN	0~125	39.5	73.6	
14	U8	IC.SMD.SSOP.16P.PC CARD Power interface switch.TI. TPS2211AIDB.MPC-2;EE-A040207;14S2221100;TWN	-40~115	35.7	69.8	
15	U17	(TF)IC.SMD.SO8.RS-485 Transceiver.Analog.ADM485JRZ; EE-A050755;14S4048502;TWN	0~100	41.2	75.3	

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

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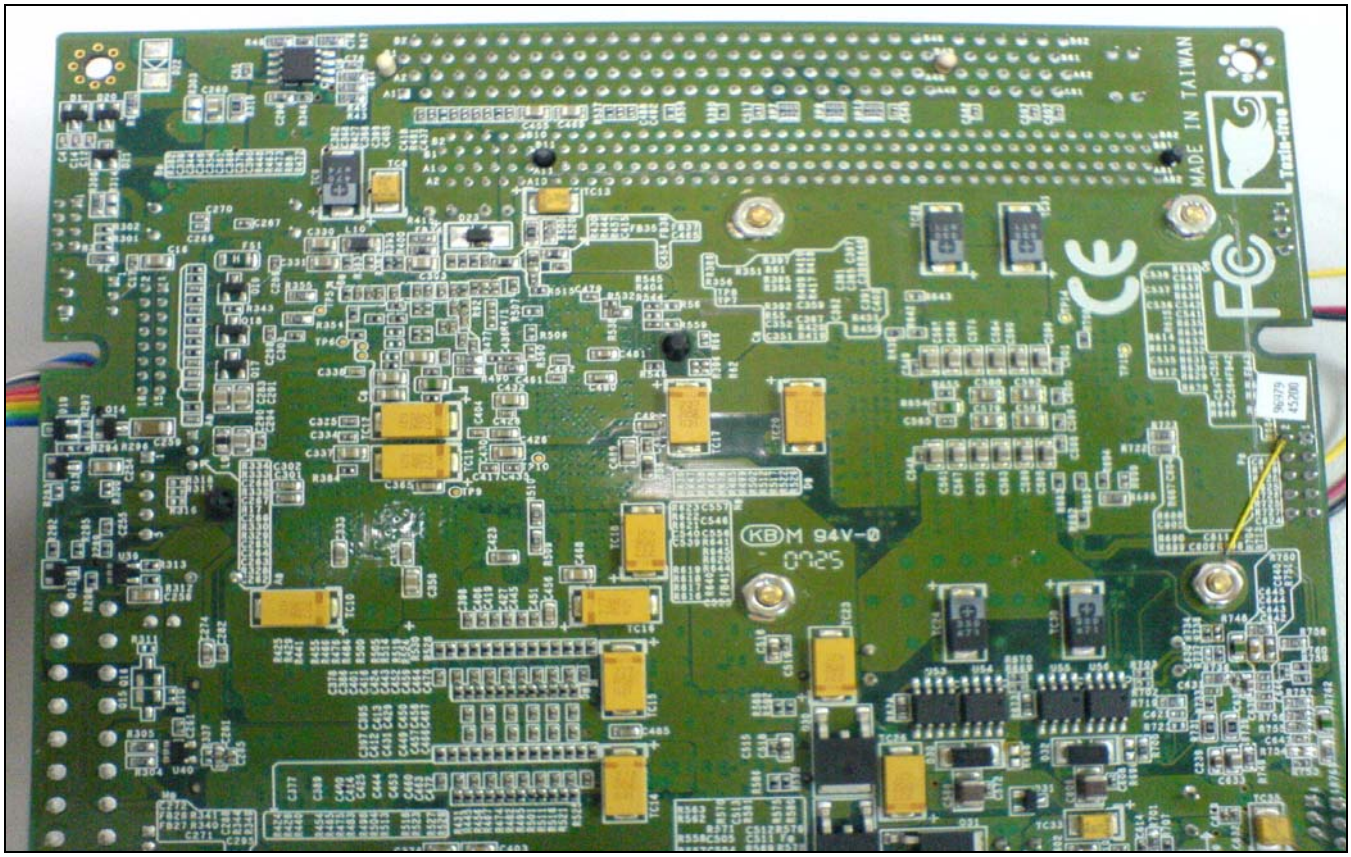
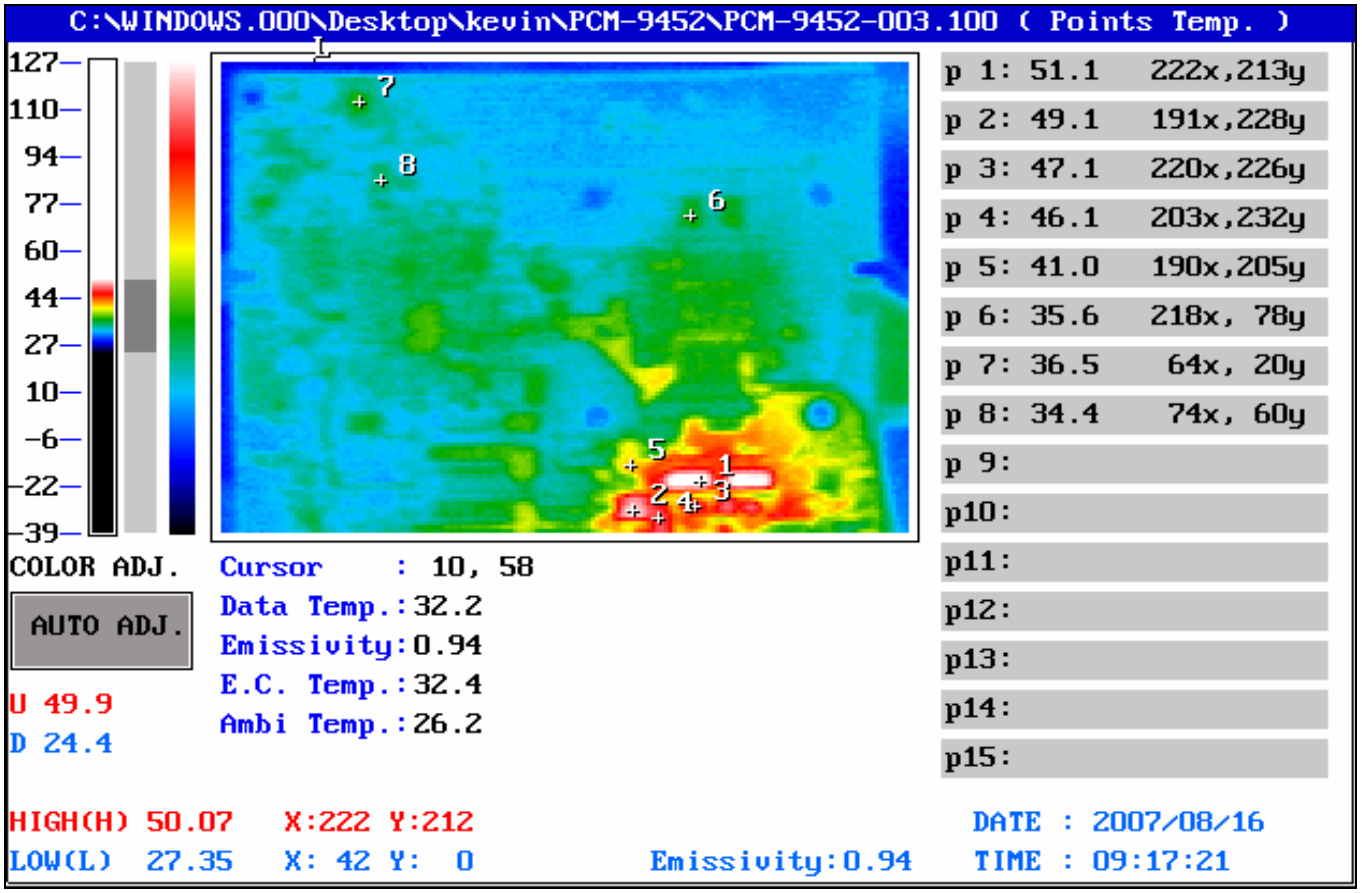
Solder Side-1 :





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Point	Position	Describe	Tc (℃)	Tm (26.2℃)	Tm (60℃)	Note
1	U54	(TF)PWR.SMD.SO8.N-Channel.30V.12A.ANPEC.APM4420KC-TRL; EE-A060271;1315442011;TWN	0~125	51.1	84.9	
2	Q30	(TF)PWR.SMD.TO-252.N-Channel PowerMosfet.ON SEMI. NTD60N02RT4G;EE-A060014;1315600210;TWN	0~100	49.1	82.9	
3	D30	(TF)D Schottky.SMD.40V.1A.GW.SM5819A;EE-A060348; 1300581940;TWN	-40~100	47.1	80.9	
4	TC26	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET. T520 Series;EE-A040450;118*6*****;TWN	0~105	46.1	79.9	
5	TC23	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET. T520 Series;EE-A040450;118*6*****;TWN	0~105	41.0	74.8	
6	TC29	(TF)POSCAP.[68,100,150,220,330,470,680,1000]uF.[2.5,4.0,6.3,10.0]V.20%.[9,12,15,18,25,35]mohm.SMD.SANYO. TPE series;EE-A060324;11896*****;TWN	-55~105	35.6	69.4	
7	U6	(TF)IC.SMD SOP.8Pin Switching PWM Controller.IR. IRU3037CSPbF;EE-A020732;14S2303700;TWN	0~100	36.5	70.3	
8	TC9	(TF)POSCAP.[68,100,150,220,330,470,680,1000]uF.[2.5,4.0,6.3,10.0]V.20%.[9,12,15,18,25,35]mohm. SMD. SANYO.TPE series;EE-A060324; 11896*****;TWN	-55~105	34.4	68.2	

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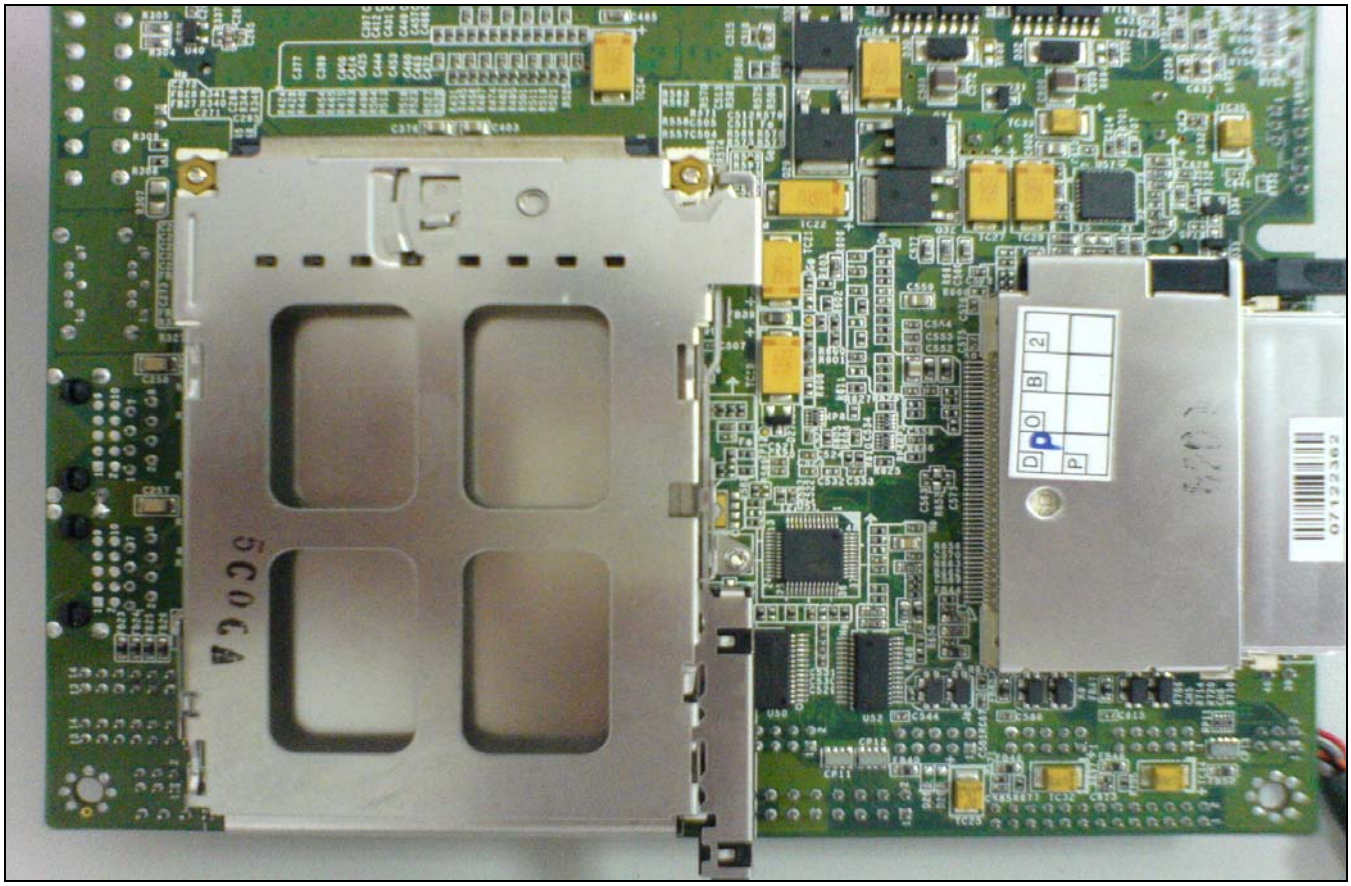
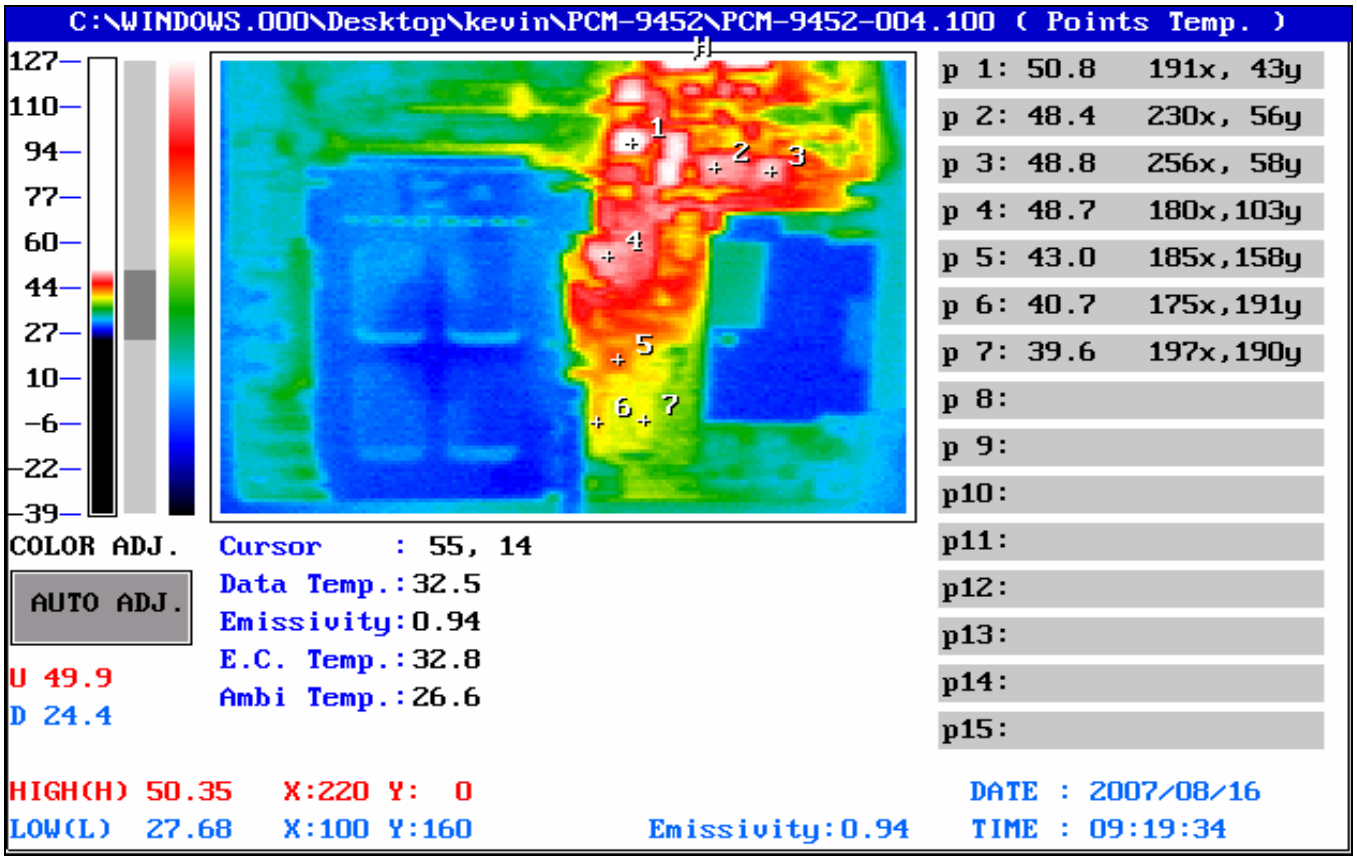
Solder Side-2 :





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Point	Position	Describe	Tc (℃)	Tm (26.6℃)	Tm (60℃)	Note
1	Q29	(TF)PWR.SMD.TO-252.N-Channel PowerMosfet.ON SEMI. NTD60N02RT4G;EE-A060014;1315600210;TWN	0~100	50.8	84.2	
2	TC27	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET. T520 Series;EE-A040450;118*6*****;TWN	0~105	48.4	81.8	
3	U57	(TF)IC.SMD.QFN 28P.Power Controller.for Dual Channel DDR. Intersil.ISL6537CRZ;EE-A050796;14S4653700;TWN	0~100	48.8	82.2	
4	TC19	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET. T520 Series;EE-A040450;118*6*****;TWN	0~105	48.7	82.1	
5	U51	(TF)IC.SMD.LQFP 48P.LPC to 4 UART.FINTEK.F81216DG; EE-A050807;14S4121601;TWN	0~100	43.0	76.4	
6	U50	(TF)IC.SMD.SSOP RS232 Driver ESD 15KV.AD.ADM213EARSZ; EE-A970562;14S4021301;TWN	-40~85	40.7	74.1	
7	U52	(TF)IC.SMD.QSOP 28P.IEEE 1284 Termination Network.CMD. PACSZ1284-04QR;EE-A060352;14S3128421;TWN	-40~115	39.6	73.0	

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