PCM-8120

VIA Eden / C7 Processor Compact Board

Thermal Image Analysis Report

Report NO:07E080005

Release Date: March 6, 2007

2007/03/06	*Wenyuan Yang*	*Kevin Hsu*
Issue Stamp	**Manager**	**Test Engineer**

Thermal Image Analysis

Ⅰ. Model Name: PCM-8120 A1.0

Ⅱ. Description: VIA Eden / C7 Processor Compact Board

Ⅲ. Date: March 06, 2007

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Kevin Hsu

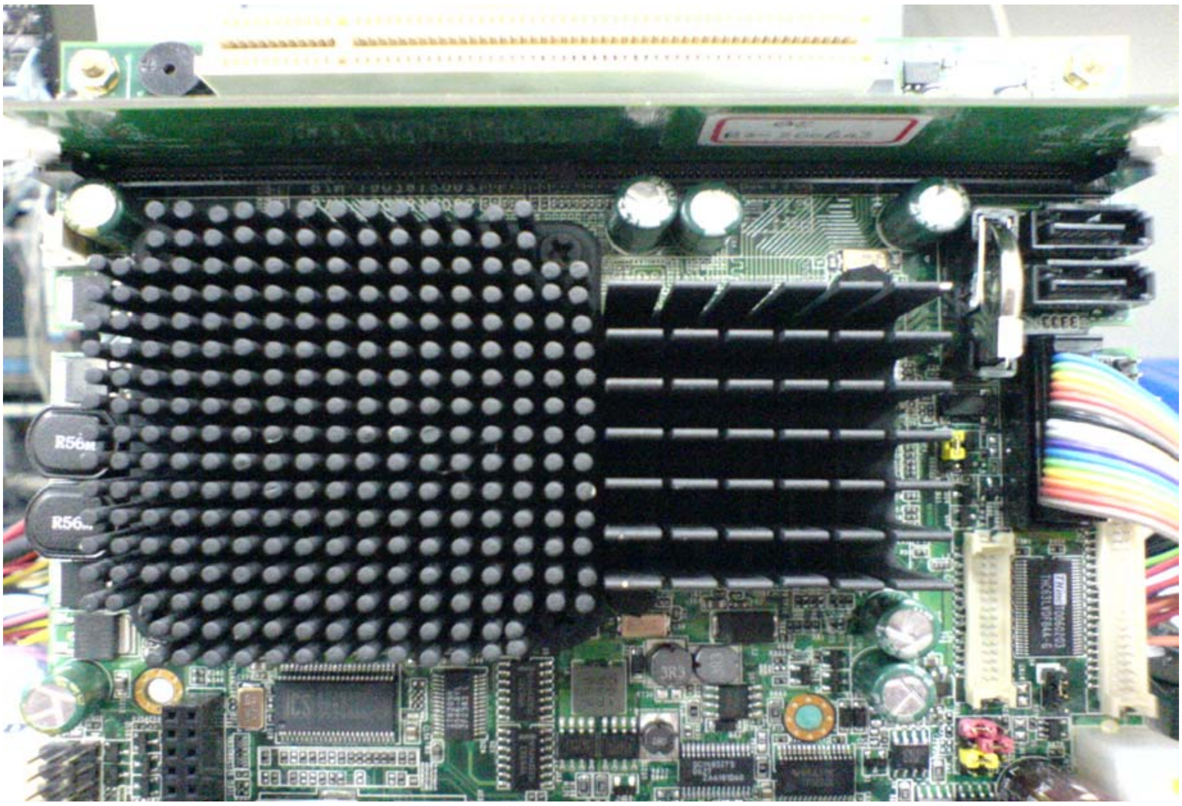
Ⅵ.Equipment:
TVS-100 series by NIPPON AVIONICS CO., LTD.

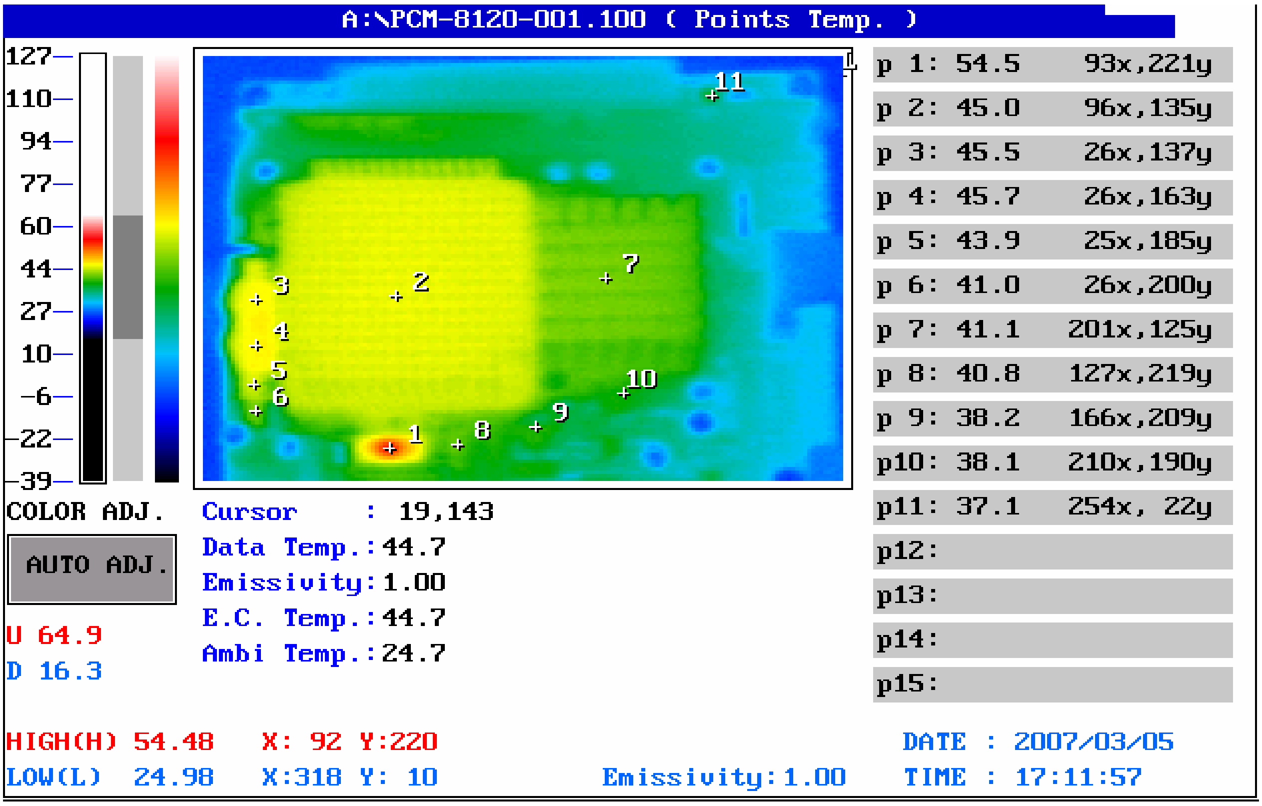
Ⅶ. Simulation Environment:

- **Temperature: Component Side-1 : 24.7.℃**
  Component Side-2 : 25.0.℃
  Solder Side-1 : 24.7℃
  Solder Side-2 : 25.1℃
- **CPU : Onboard VIA C7 Processor / Eden 1.0GHz**
- **RAM : Kingston (KVR533D2N4/512)512MB DDR2 533MHz**
- **BIOS : PCM-8120 BIOS Rev 1.0 for LVDS,TV,CRT (02/1/2007)**
- **CF Card : N/A**
- **HDD: Western Digital WD1200JB-00GVA0 120GB IDE HDD**
- **Application Software: Run Prime95 under Windows XP Professional V2002 Service Pack 2**
- **Take Picture Time: After Power on 2 hours.**

Temperature Profile Test:

Component Side-1 :





A:\PCM-8120-001.100 (Points Temp.)

COLOR ADJ.

AUTO ADJ.

U 64.9
D 16.3

Cursor : 19,143
Data Temp.:44.7
Emissivity:1.00
E.C. Temp.:44.7
Ambi Temp.:24.7

p 1:	54.5	93x,221y
p 2:	45.0	96x,135y
p 3:	45.5	26x,137y
p 4:	45.7	26x,163y
p 5:	43.9	25x,185y
p 6:	41.0	26x,200y
p 7:	41.1	201x,125y
p 8:	40.8	127x,219y
p 9:	38.2	166x,209y
p10:	38.1	210x,190y
p11:	37.1	254x, 22y
p12:		
p13:		
p14:		
p15:		

HIGH(H) 54.48 X: 92 Y:220
LOW(L) 24.98 X:318 Y: 10 Emissivity:1.00

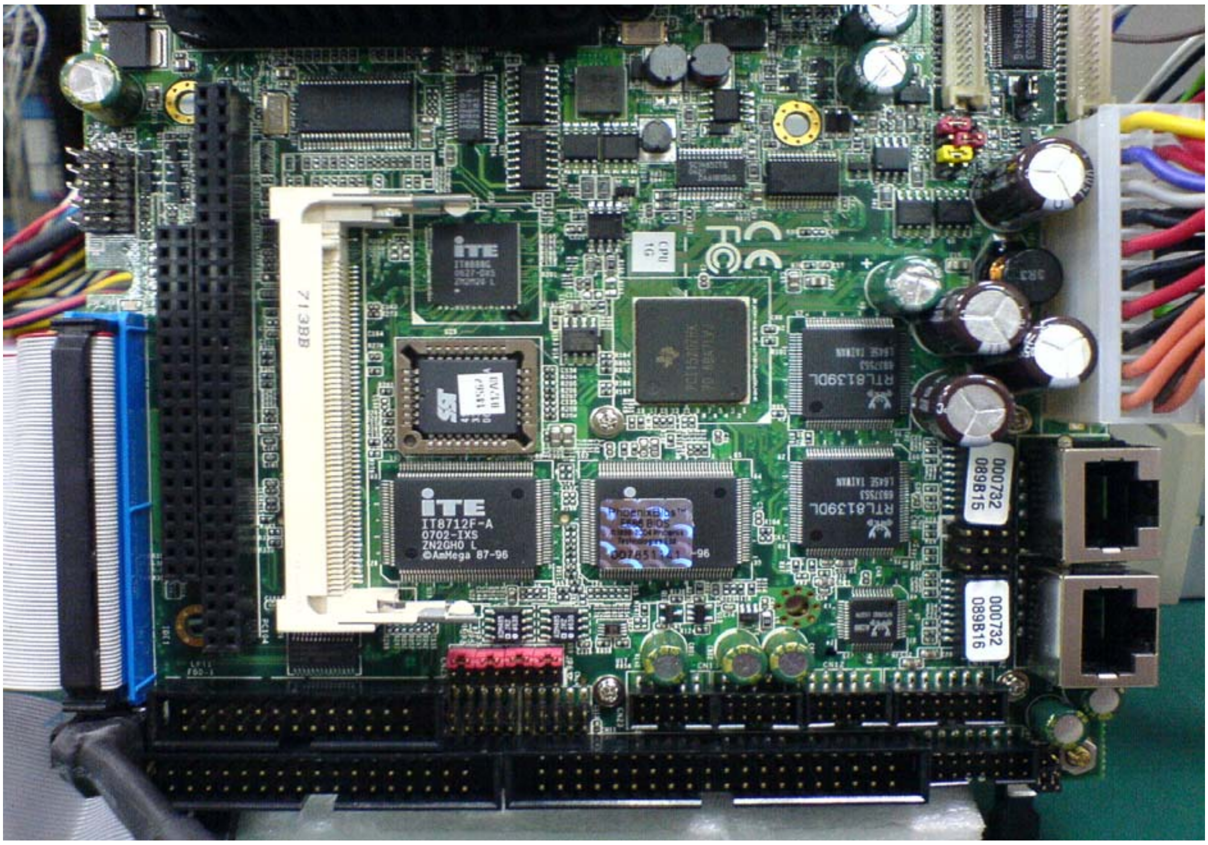
DATE : 2007/03/05
TIME : 17:11:57

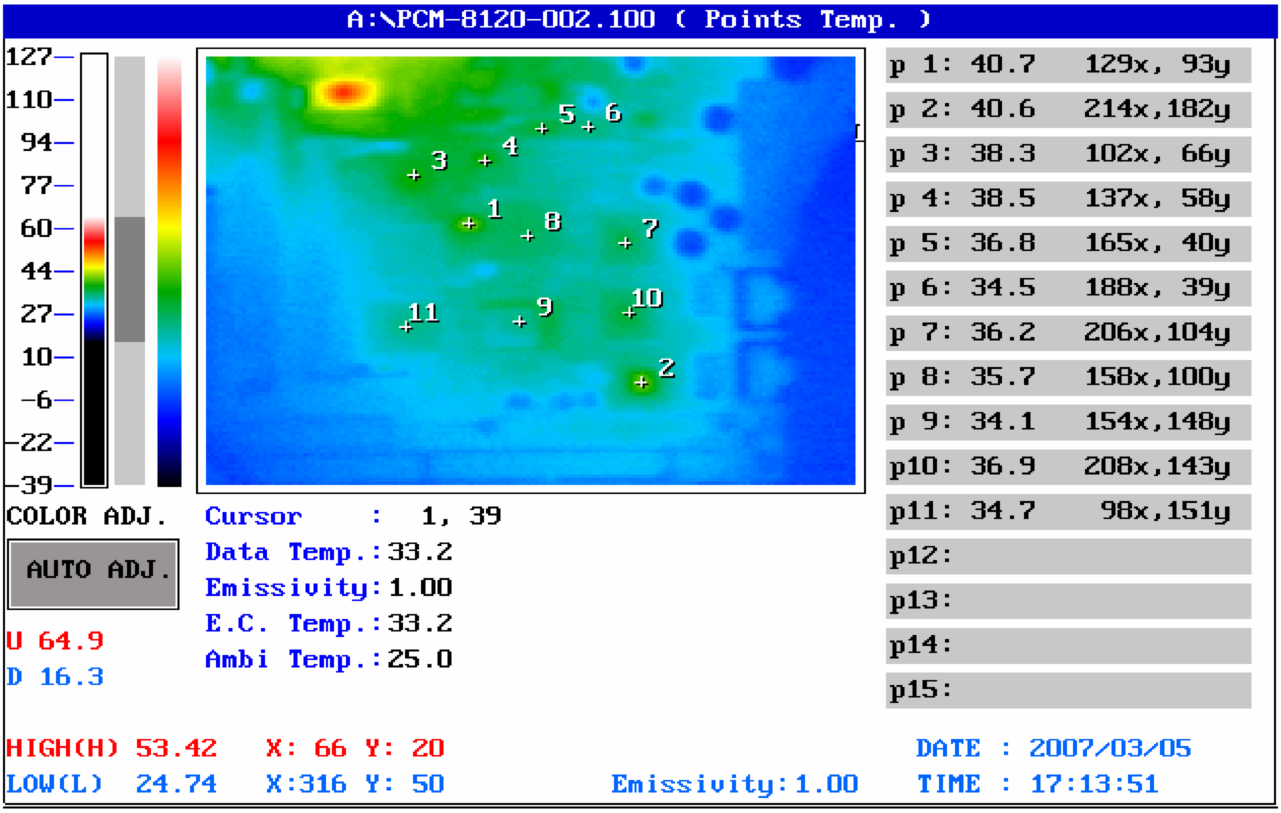
Point	Position	Describe	Tc (℃)	Tm (24.7℃)	Tm (60℃)	Note
1	U28	(TF)IC.SMD.SSOP48Pin.Clock Generator.ICS.ICS952906BFLF-T; EE-A061971;14S3090600;TWN	115	54.5	89.8	
2	U27	(TF)VIACPU.NanoBGA2 400L.Eden.1GHzFSB400MHz.0.844V; EE-A070115;14S4100014;TWN	0~100	45.0	80.3	
3	L10	(TF)COIL.0.56uH.+-20%.DIP.35A.GOTREND.GMAR-121010-P-0R56-M;EE-A050771;1211105671;TWN	-22~87	45.5	80.8	
4	L11	(TF)COIL.0.56uH.+-20%.DIP.35A.GOTREND.GMAR-121010-P-0R56-M;EE-A050771;1211105671;TWN	-22~87	45.7	81.0	
5	Q21	(TF)PWR.SMD.TO-252.N-Channel Power 25V 60A MOSFET. APEC.AP70T03GH;EE-A031083;1315700310;TWN	-30~130	43.9	79.2	
6	Q22	(TF)PWR.SMD.TO-252.N-Channel Power 30V 55A MOSFET.APEC.AP60N03GH;EE-A031082;1315600311;TWN	-25~125	41.0	76.3	
7	U11	(TF)IC.FCBGA-958.Chipset.VIA.CX700M;EE-A061954; 14S4700002;TWN	0~85	41.1	76.4	
8	U24	(TF)IC.SMD SSOP 28Pin.Extended PCI Arbiter Buffer.ITE.IT8209R;EE-A050147;14S4820900;TWN	-30~100	40.8	76.1	
9	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	-30~100	38.2	73.5	
10	C638	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	38.1	73.4	
11	Q4	(TF)IC.SMD SO8.3A Linear Regulator.Anpec.APL5331KC-TRL;EE-A041712;14S2533100;TWN	25~100	37.1	72.4	

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

Component Side-2 :





A:\PCM-8120-002.100 (Points Temp.)

Point	Temp.	Position
p 1:	40.7	129x, 93y
p 2:	40.6	214x,182y
p 3:	38.3	102x, 66y
p 4:	38.5	137x, 58y
p 5:	36.8	165x, 40y
p 6:	34.5	188x, 39y
p 7:	36.2	206x,104y
p 8:	35.7	158x,100y
p 9:	34.1	154x,148y
p10:	36.9	208x,143y
p11:	34.7	98x,151y
p12:		
p13:		
p14:		
p15:		

U 64.9
D 16.3

Cursor : 1, 39
Data Temp.:33.2
Emissivity:1.00
E.C. Temp.:33.2
Ambi Temp.:25.0

HIGH(H) 53.42 X: 66 Y: 20
LOW(L) 24.74 X:316 Y: 50 Emissivity:1.00

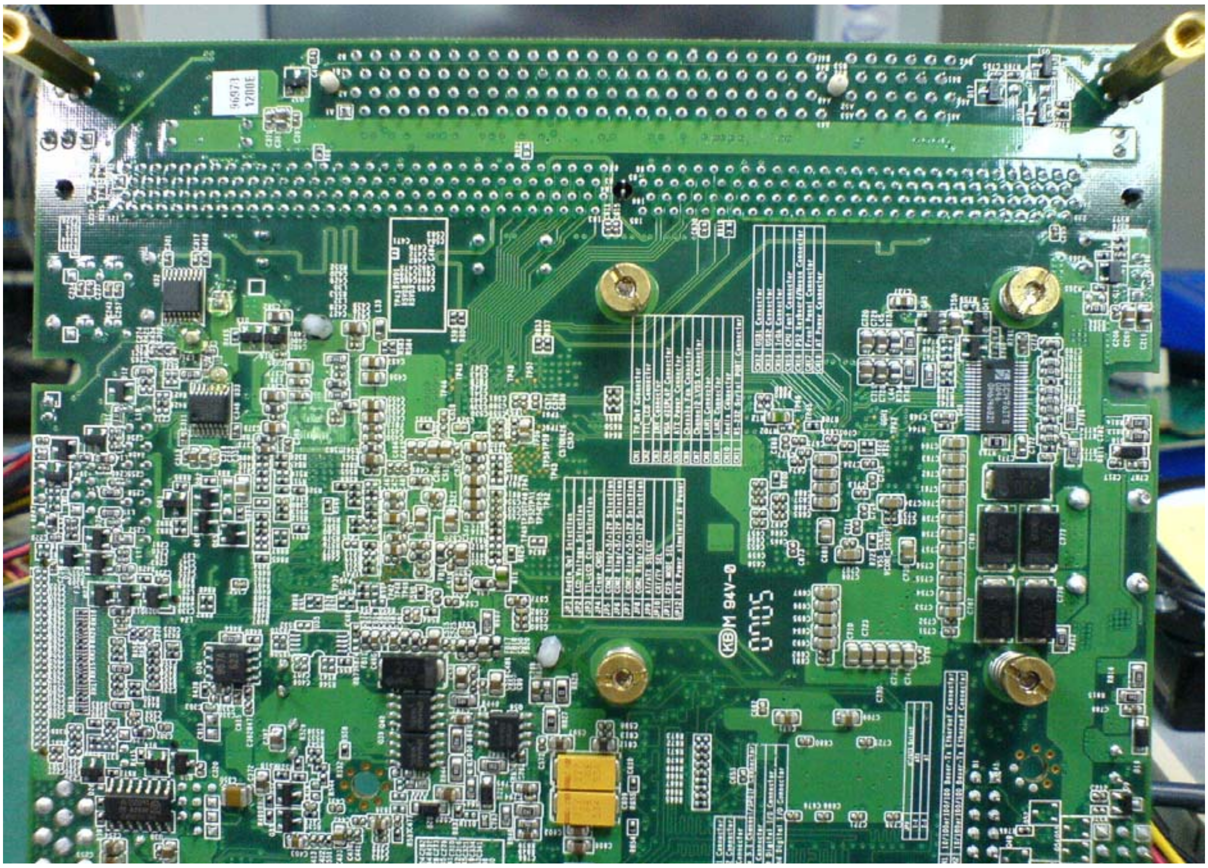
DATE : 2007/03/05
TIME : 17:13:51

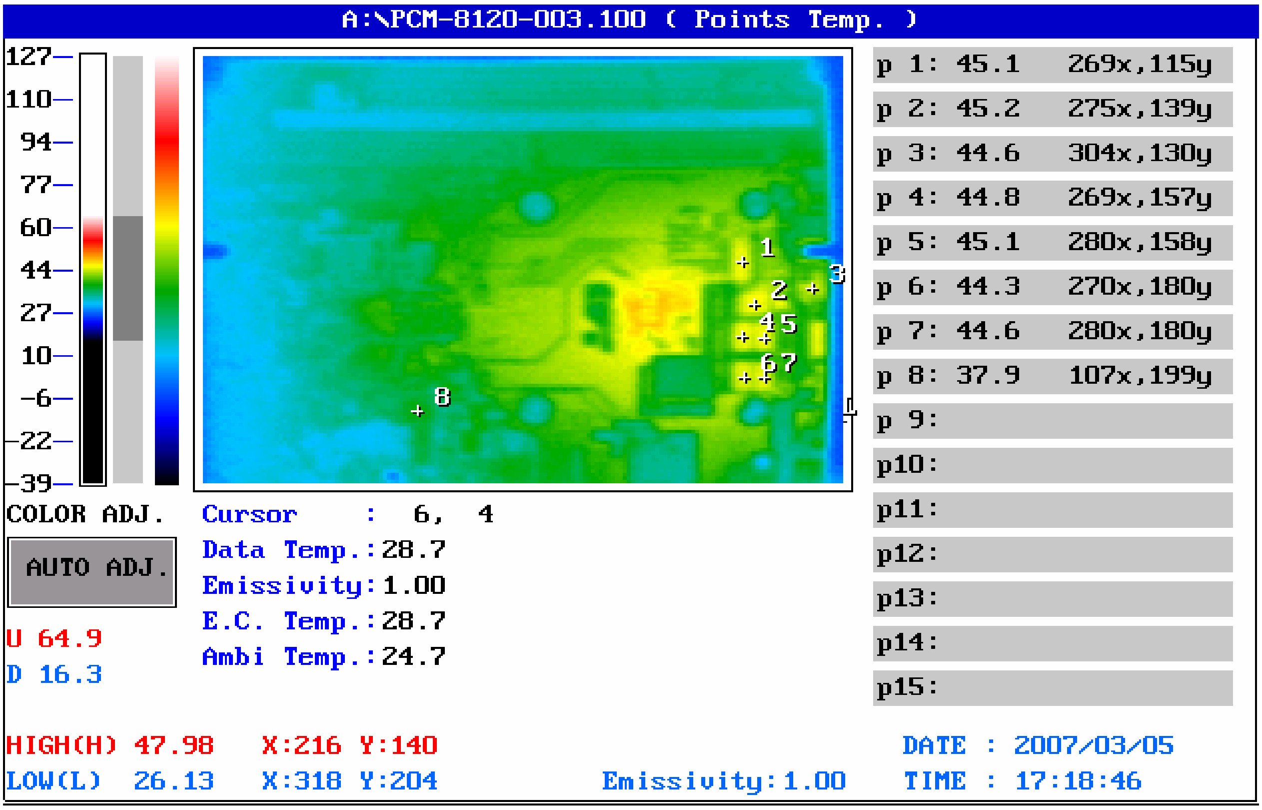
Point	Position	Describe	Tc (℃)	Tm (25.0℃)	Tm (60℃)	Note
1	U18	(TF)IC.SMD SO-8.1.5A.Low Dropout Regulator. Adj(1.2~4.8V). SEMTECH.SC1565IS-TRT;EE-A031087;14S3156500;TWN	-15~125	40.7	75.7	
2	U7	(TF)IC.SMD.LQFP 48P.7.1 Channel High Definition. Audio Codec.REALTEK.ALC880-VH-LF;EE-A050756;14S3088000;TWN	-30~100	40.6	75.6	
3	U23	(TF)IC.SMD TFBGA.160P.PCI to ISA Bridge Chip.ITE.IT8888G-L;EE-A051091;14S4888801;TWN	-30~100	38.3	73.3	
4	U16	(TF)IC.SMD.SO8.Step-Down DC/DC Controller.Anpec.APW7057KC-TRL;EE-A040426;14S2705700;TWN	-30~100	38.5	73.5	
5	U47	(TF)IC.SMD TSSOP-28.Dual Power Supply Controller.SEMTECH.SC1485ITSTRT;EE-A031097;14S4148500;TWN	-15~100	36.8	71.8	
6	U10	(TF)IC.SMD SSOP 30Pin.POWER-INTERFACE SWITCH.TI.TPS2226DBR;EE-A060736;14S2222600;TWN	-40~105	34.5	69.5	
7	U8	(TF)IC.SMD.100P PCI Ethernet Chip.RELTEK.RTL8139D Series;EE-A021236;14S48139**;TWN	-30~100	36.2	71.2	
8	U14	(TF)IC.SMD.BGA 209PIN.PC CARD Controller.TI.PCI1520ZHK;EE-A060752;14S4152000;TWN	-30~100	35.7	70.7	
9	U15	(TF)IC.SMD.QFP128P Super I/O.ITE.IT8712F-A/IX-L;EE-A050785;14S4871203;TWN	-30~100	34.1	69.1	
10	U9	(TF)IC.SMD.100P PCI Ethernet Chip.RELTEK.RTL8139D Series;EE-A021236;14S48139**;TWN	-30~100	36.9	71.9	
11	U26	(TF)IC.SMD.100P PCI Ethernet Chip.RELTEK.RTL8139D Series;EE-A021236;14S48139**;TWN	-30~100	34.7	69.7	

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

Solder Side-1 :





A:\PCM-8120-003.100 (Points Temp.)

p 1:	45.1	269x,115y
p 2:	45.2	275x,139y
p 3:	44.6	304x,130y
p 4:	44.8	269x,157y
p 5:	45.1	280x,158y
p 6:	44.3	270x,180y
p 7:	44.6	280x,180y
p 8:	37.9	107x,199y
p 9:		
p10:		
p11:		
p12:		
p13:		
p14:		
p15:		

Cursor : 6, 4
Data Temp.:28.7
Emissivity:1.00
E.C. Temp.:28.7
Ambi Temp.:24.7

U 64.9
D 16.3

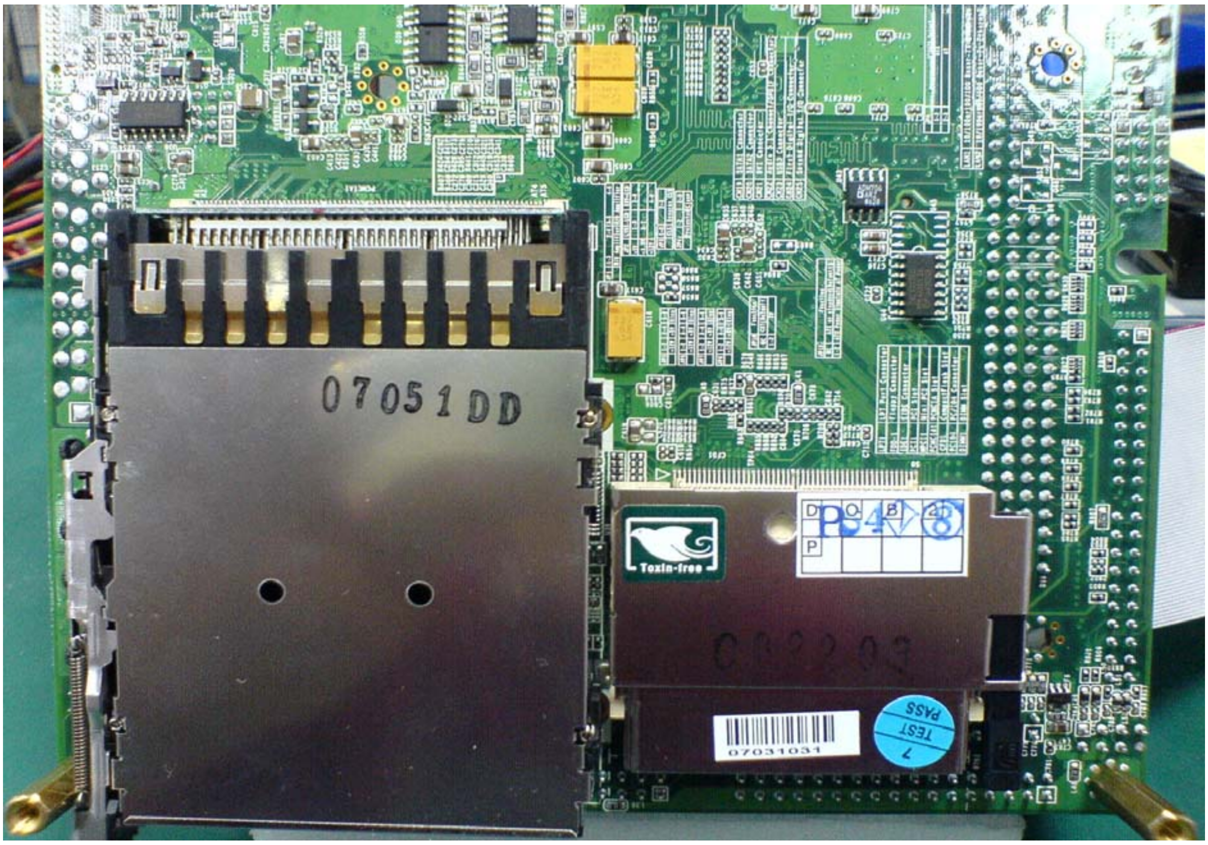
HIGH(H) 47.98 X:216 Y:140
LOW(L) 26.13 X:318 Y:204
Emissivity:1.00
DATE : 2007/03/05
TIME : 17:18:46

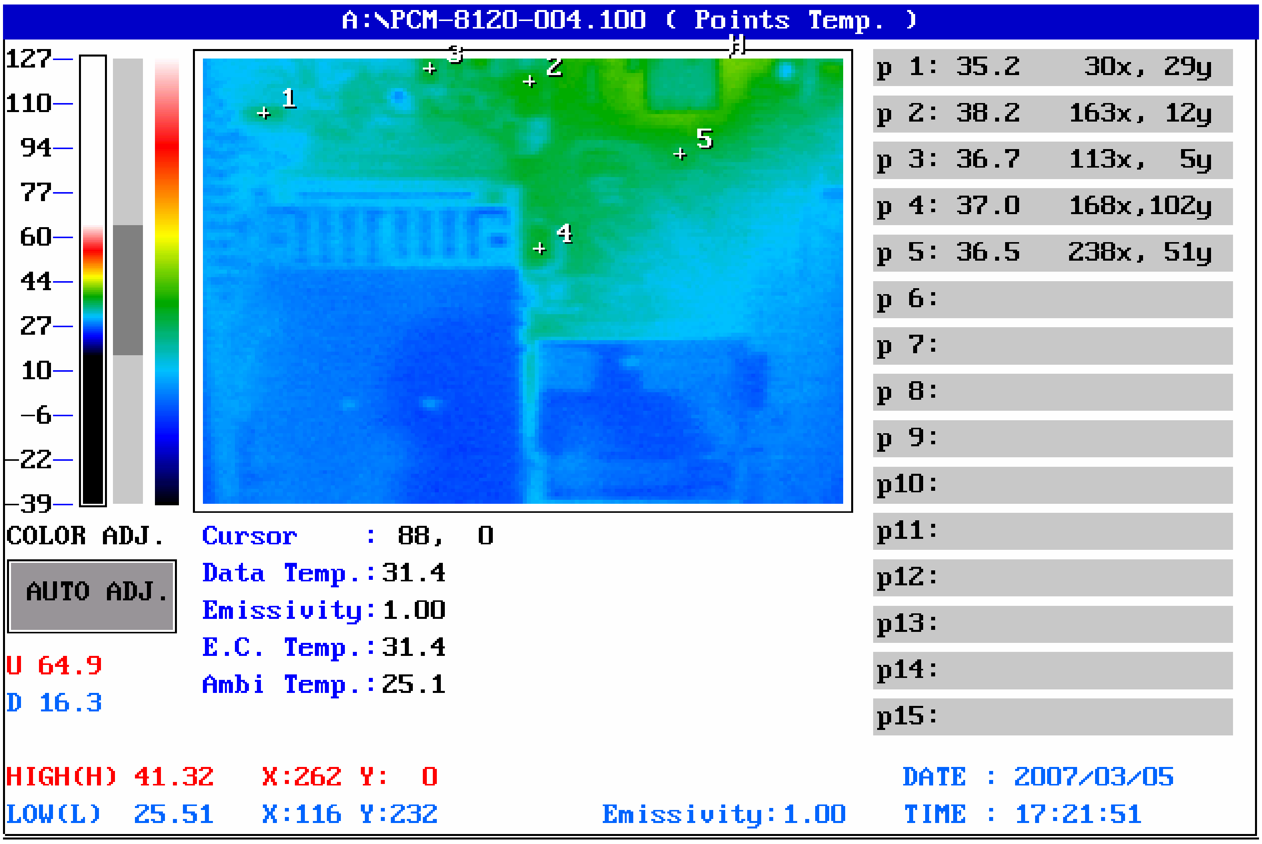
Point	Position	Describe	Tc (℃)	Tm (24.7℃)	Tm (60℃)	Note
1	U46	(TF)IC.SMD TSSOP-38 IMVP4.Dual Phase PWM Controller.SEMTECH.SC1476ITSTR;EE-A031099;14S4147600;TWN	-15~100	45.1	80.4	
2	C771	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	45.2	80.5	
3	D18	(TF)D Schottky.30V.0.5A.SMD.SOD-123.ON.MBR0530T1G; EE-A011187;1301053040;TWN	-40~100	44.6	79.9	
4	C768	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	44.8	80.1	
5	C777	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	45.1	80.4	
6	C767	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	44.3	79.6	
7	C776	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	44.6	79.9	
8	C485	(TF)SP CAP.[8.2µF～470µF].[2V～8V].20%.SMD.Panasonic.EEF/ECG 系列(耐溫 260℃);EE-A060158;118*****8*;TWN	-40~105	37.9	73.2	

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

Solder Side-2 :





A:\PCM-8120-004.100 (Points Temp.)

p 1:	35.2	30x, 29y
p 2:	38.2	163x, 12y
p 3:	36.7	113x, 5y
p 4:	37.0	168x,102y
p 5:	36.5	238x, 51y
p 6:		
p 7:		
p 8:		
p 9:		
p10:		
p11:		
p12:		
p13:		
p14:		
p15:		

U 64.9
D 16.3

Cursor : 88, 0
Data Temp.:31.4
Emissivity:1.00
E.C. Temp.:31.4
Ambi Temp.:25.1

HIGH(H) 41.32 X:262 Y: 0
LOW(L) 25.51 X:116 Y:232
Emissivity:1.00
DATE : 2007/03/05
TIME : 17:21:51

Point	**Position**	**Describe**	**Tc (℃)**	**Tm (25.1℃)**	**Tm (60℃)**	**Note**
1	U30	(TF)IC.SMD SO.14Pin.PHILIPS.74LVC06AD;EE-A000474; 14S5A00600;TWN	-40~115	35.2	70.1	
2	C610	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET.T520 Series;EE-A040450;118*6*****;TWN	0~105	38.2	73.1	
3	Q39	(TF)PWR.SMD SO-8.P-Channel MOSFET.ANPEC.APM4463KC-TRL;EE-A041711;1315446310;TWN	-30~125	36.7	71.6	
4	C616	(TF)KO-CAP.(15~1000)uF.(2~25)V.20%.SMD.KEMET.T520 Series;EE-A040450;118*6*****;TWN	0~105	37.0	71.9	
5	U43	(TF)IC.SMD SO-8.5V Supervisory Circuits. ANALOG DEVICES.ADM706ARZ;EE-A990293;14S4070610;TWN	-40~115	36.5	71.4	

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