EPB-CV101

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature at four component was estimated to be in marginal temperature point in comparison with component datasheet.**

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	4
Defect Unsolved	0	0	0	4

Issue date	Approval	Test Engineer
2014 / 03 / 20	Tom Lin	Jerry Chen

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Sample Configuration & Quantity Under Test

- **Model name : EPB-CV101 A0.3**
- **Mother Board : EPB-CV101 A0.3**
- **CPU : Intel Atom D2550 1.86GHz**
- **Memory : DDR3 800MHz / 2G / SEC 334 BYKO K4B2G0846Q**
- **2.5” SATA HDD : Toshiba / MK1060GSC / 2.5 SATA HDD / 100GB**
- **BIOS : EPB-CV101 R0.8(BCV1AM08)(01/22/2014)**
- **Test Software : Windows 7 / Run PassMark Burn In Test 7.1 Pro**
- **DC Adapter：FSP084-DMAA1/ DC 12V/ 7.0A**
- **Heat Sink :**

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Thermal Image Analysis

1. Test Date: 2014-03-19

2. Test Product: EPB-CV101 A0.3

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 YOKOGAWA Inc,

4.2.2 Model: DA100-13-1D

Date of Calibration: 2013/10/01

Serial Number: 12A323190

4.2. IR Scanner: Infrared Camera

4.2.1 NEC Avio Infrared Technologies Co., Ltd.

4.2.2 Model: Thermo GEAR G100W2-D

Date of Calibration: 2013/12/30

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 25℃ with Heat Sink

6. Take Picture Time:

After power on 2 hours

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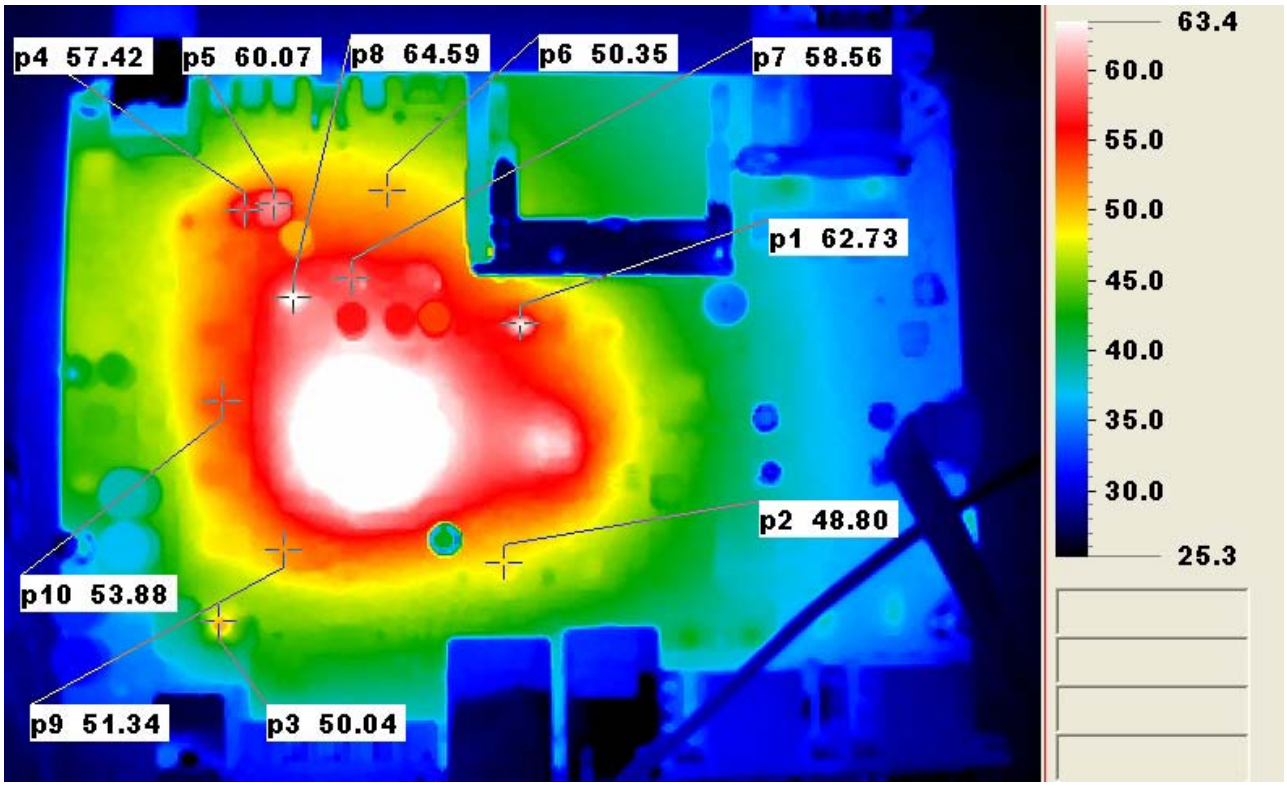
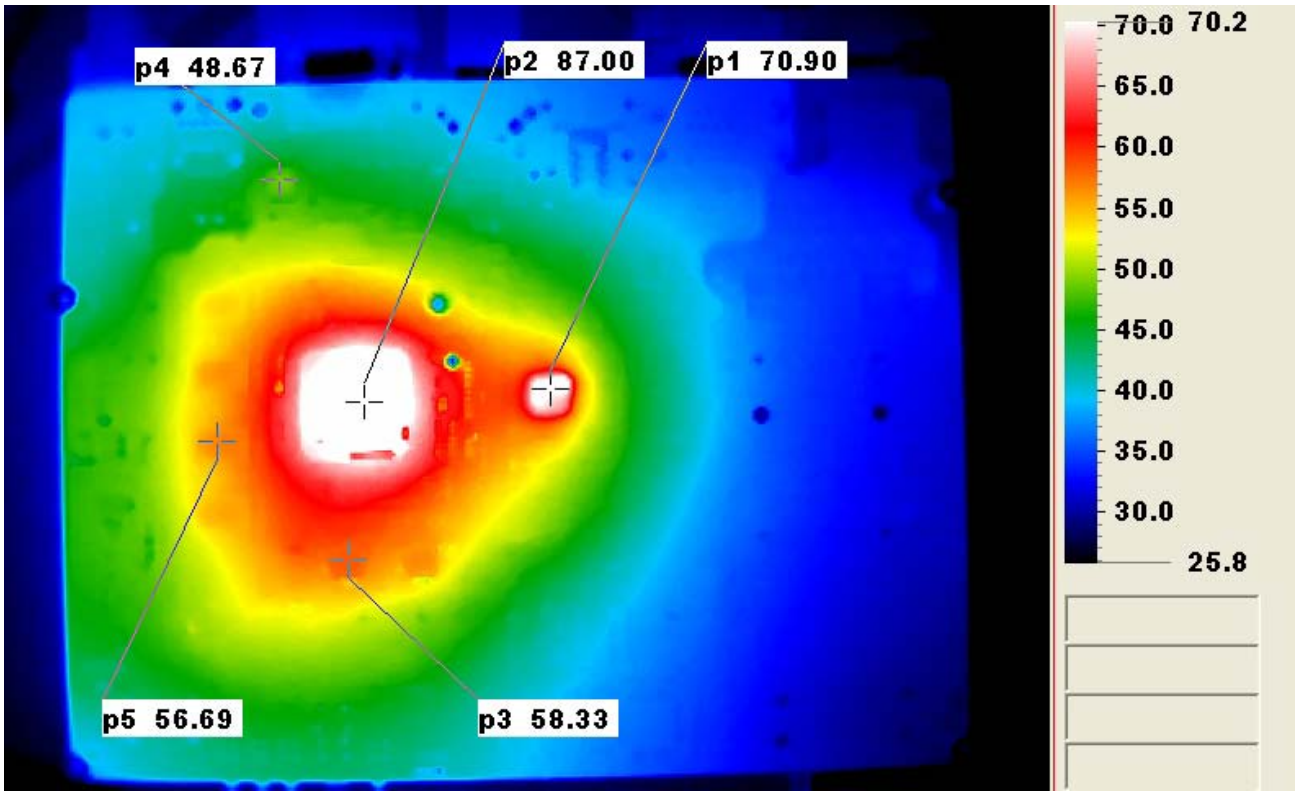
Temperature Profile Test:

Back Side:



Component Side:



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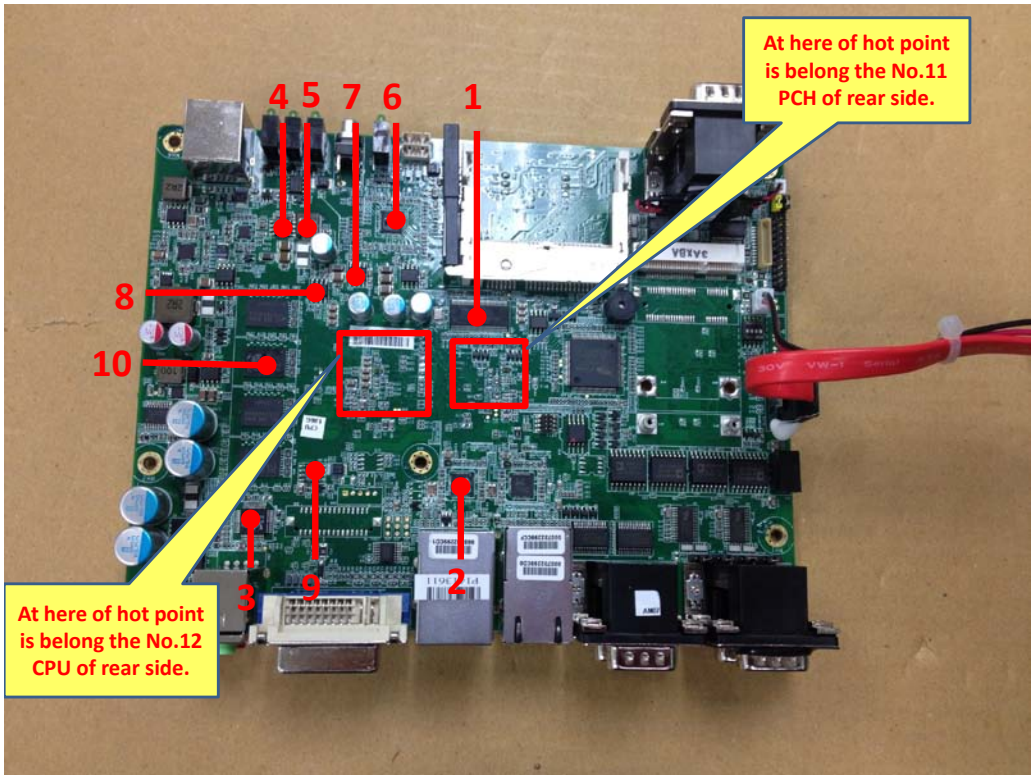
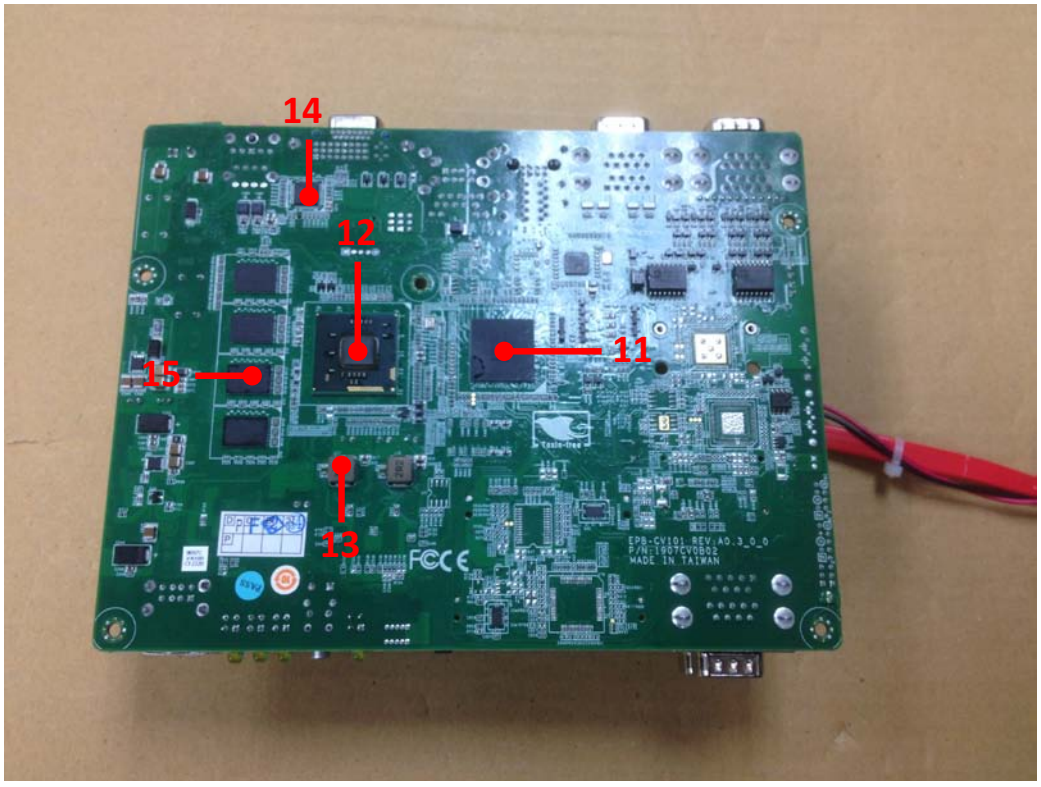
Terminal Recorder:

Measuring Thermal Couple Position：





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Using YOKOGAWA / DARWIN DA100-100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	60℃	
1	U38	(TF)IC.TSSOP 64P.CLOCK GENERATOR.IDT.9LPRS501PGLF	115	56.2	91.2	
2	U12	(TF)IC.QFN Gigabit Ethernet Chip.REALTEK.RTL8111E-VB-GR	85	47.1	82.1	Note4
3	U8	(TF)IC.HIGH DEFINITIOND.AUDIO CODEC.REALTEK.ALC662-GR	85	54	89	Note4
4	Q35	(TF)Dual N-Channel.16/36.5mΩ.SOIC-8.ON.NTMD5836NLR2G	125	59	94	
5	L9	(TF)COIL.DCR=9mohm.Zenithtek.ZPWM-6030M-1R0M	125	60.9	95.9	
6	U51	(TF)IC.WQFN-48L.Dual Single-Phase PWM.Richtek.RT8167AGQW	100	50.5	85.5	
7	Q34	(TF)Dual N-Channel.16/36.5mΩ.SOIC-8.ON.NTMD5836NLR2G	125	52.7	87.7	
8	U41	(TF)IC.Low dropout Linear Regulator.GMT.G9731F11U	100	57.5	92.5	Note4
9	Q8	(TF)PWR.SO-8.P-Channel.-12V.-11A.25mΩ.MOSFET.AOS.AO4437	125	44.8	79.8	
10	U29	(TF)IC.DDR3L-SDRAM.256Mx8.Samsung.K4B2G0846Q-BYK0	95	48.1	83.1	
11	U72	(TF)IC.SMD.NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	48.9	83.9	
12	U71	(TF)INTEL Atom CPU D2550 1.86GHz.	100	48.1	83.1	
13	L17	(TF)COIL.28m ohm.Idc=6Amp.ZenithTek.ZPWM-6030M-3R3M	125	52.7	87.7	
14	U59	(TF)IC.Digital Video Level Shifter.PERICOM.PI3VDP411LSZBE	85	45.7	80.7	Note4
15	U74	(TF)IC.DDR3L-SDRAM.256Mx8.Samsung.K4B2G0846Q-BYK0	95	44.9	79.9	

Note(*):

1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.

2. "Tm" indicates the measured Tc value under working environmental temperature within product specification.

3. Judgment Criteria:

- **Fail** : Tm > Tc+5℃; The measured value is over specification plus margin.
- **Margin** : Tc+5℃ > Tm > Tc-10℃; The measured value is within specification with margin. For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

4. Defect NO.E130605QED01

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