EPIC-KBS9

Thermal Image Analysis Report

Test Cause
For ATRF No.QE180301 Request

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** There are four temperature point marginal passed, the system works properly.

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	4
Defect Unsolved	0	0	0	4

Issue date	QE Manager	Test Engineer
2018 / 03 / 07	KJ Wang	Ben Sun

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Sample Configuration & Quantity Under Test

- **Model name : EPIC-KBS9 A0.2**
- **CPU : Intel® Core ™ i7-7700 CPU @ 3.60GHz**
- **Memory : Transcend DDR4L-2133 SO-DIMM 8GB *2**
- **3.5” SATA HDD : Western Digital WD1600AAJS 160GB 3.5”HD**
- **BIOS : EKS9AM05**
- **Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **Power : AT Power**
- **Heat Sink & Fan :**

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Thermal Image Analysis

1. Test Date: 2018-03-06

2. Test Product: EPIC-KBS9 A0.2

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: 2017/09/08

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: 2017/11/23

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 24.5℃ with Heat Sink & Fan

6. Take Picture Time:

After power on 2 hours

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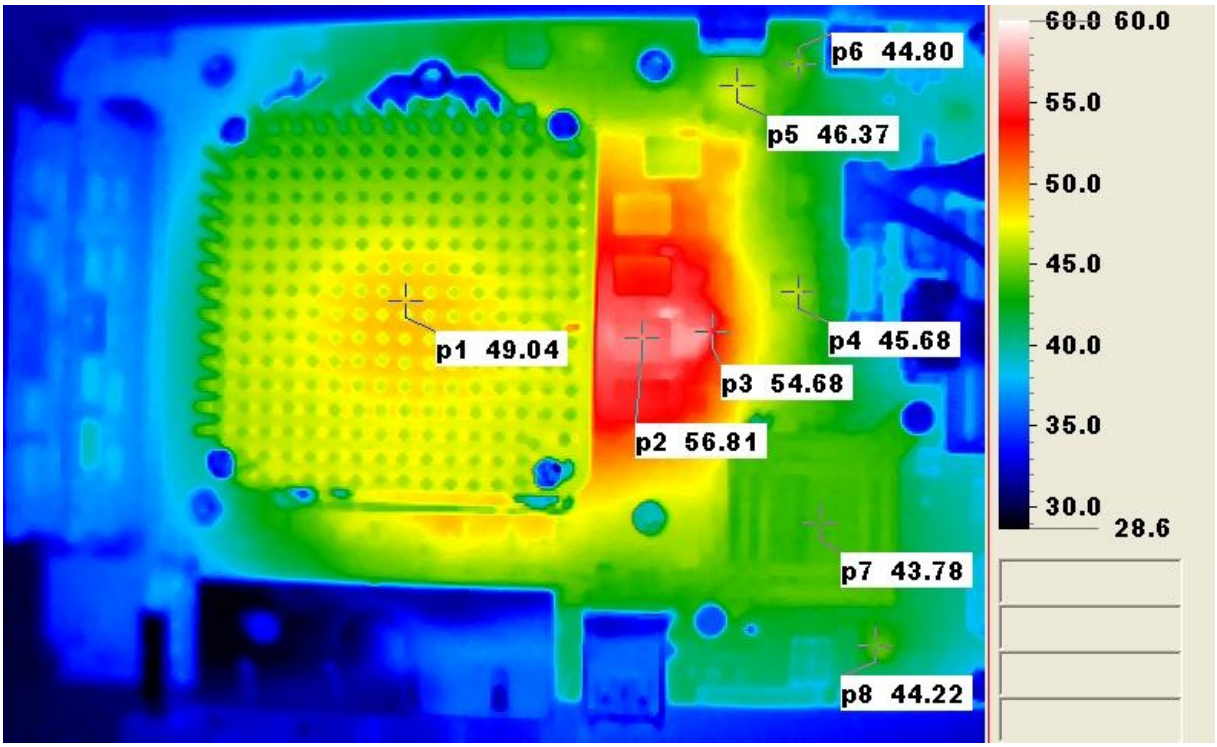
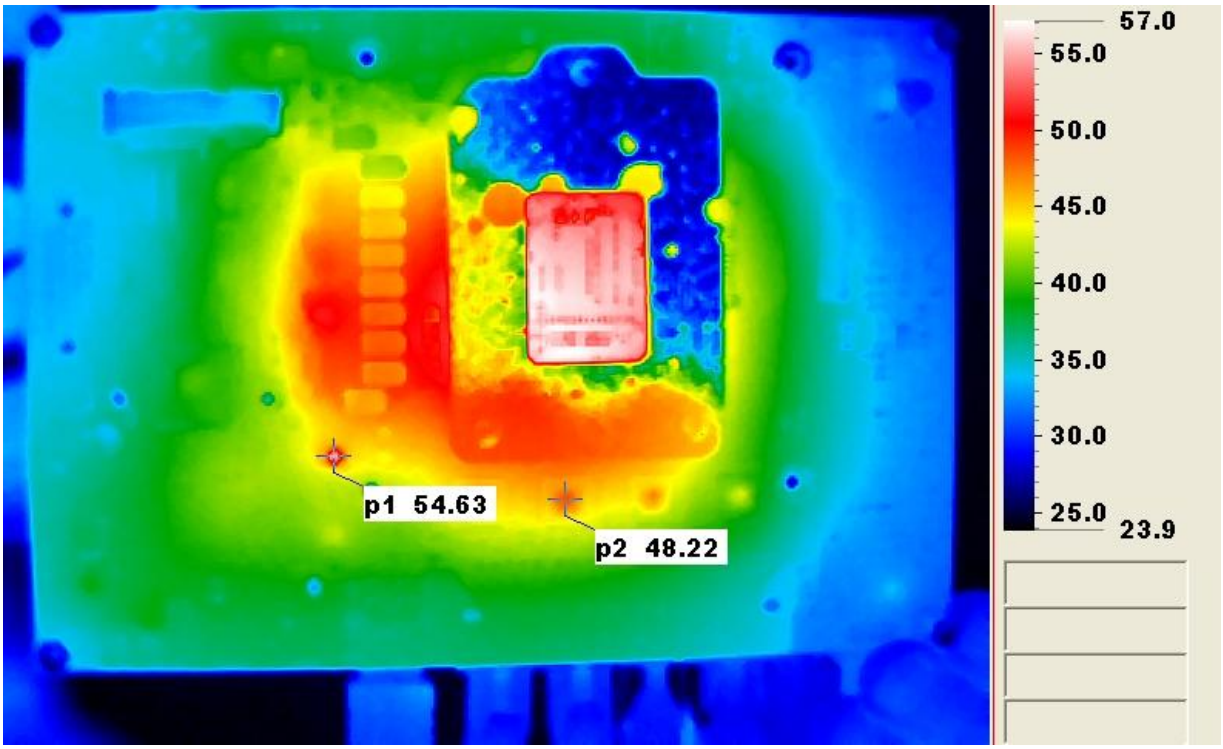
Temperature Profile Test:

Component Side:





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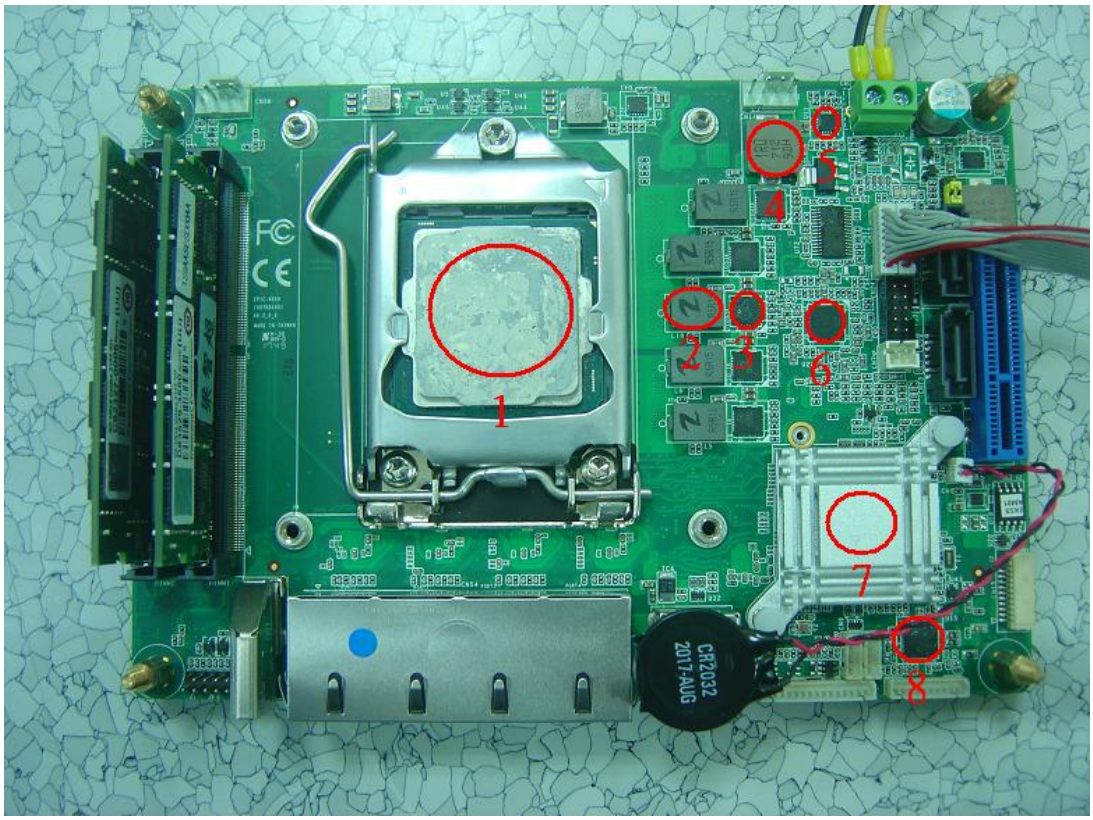
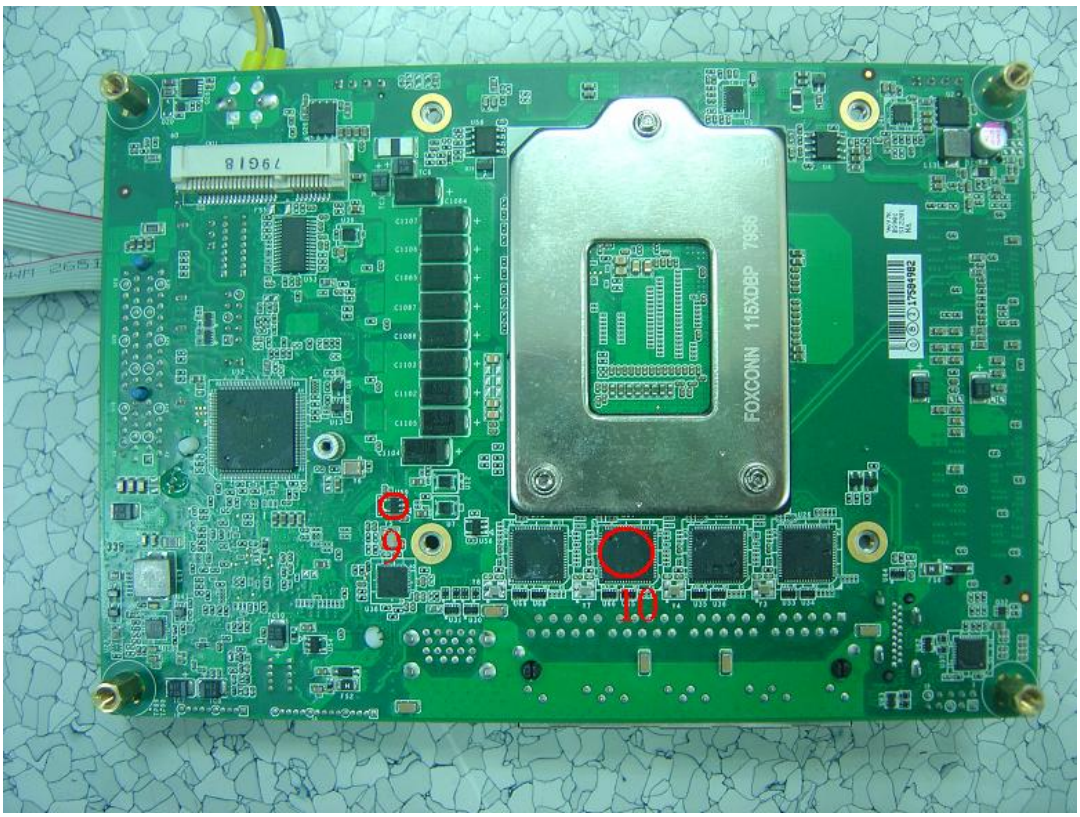
Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	TAT(*2) 25.0℃	TPT(*3) 60℃	Note
1	CPU1	(TF)Intel 7th Core Processor.Kaby Lake-S.3.6Ghz, 8MB Cache.FCLGA1151.i7-7700	75	42.0	77.0	NOTE4
2	L19	(TF)COIL.150nH.DCR=0.29mohm.Idc=53A.20%.2P.10.5*7*4.95mm.SMD.ZenithTek.ZPWA-107050R5-R15	150	46.8	81.8	
3	U106	(TF)IC.Integrated Driver and MOSFET.PQFN.31P.SMD.ON Semi.SCP302045MNTWG	150	46.5	81.5	
4	L3	(TF)COIL.1uH.25A.2.3mohm.20%.SMD.11.5*10.3*4mm.CYNTEC.PCME104T-1R0MS2R307	150	48.4	83.4	
5	U11	(TF)IC.Wide Input Voltage.Single Synchronous Step-Down QFN 16P.SMD.TI.TPS53219ARGTR	125	42.4	77.4	
6	U22	(TF)IC. Dual Output Controller.with Single SVID Interface CPU.for Applications.QFN 52P SMD ON NCP81243MNTXG	150	45.2	80.2	
7	U16	(TF)INTEL.CHIPSET.BGA837P.SMD.GL82Q170.SR2C5	108	47.5	82.5	
8	U15	(TF)IC.HDA Audio Codec.w/Class-D AMP.MQFN 48P.SMD REALTEK.ALC269Q-VC2-GR	85	43.1	78.1	NOTE4
9	U67	(TF)IC.LDO.0.3V.300mA.SOT-23-5 5P.SMD.ANPEC APL5325BI-TRG	125	50.2	85.2	
10	U59	(TF)IC.PCI-E GigaBit Ethernet Chipset.QFN 64P.SMD Intel.WGI211AT	85	44.5	79.5	NOTE4
11		RAM	85	39.3	74.3	NOTE4

Note(*):

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

2. "TAT" indicates the actual measured temperature under product specification.

3. "TPT" indicates the predicted temperature under 25℃ working environmental.

4. 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.

5. **RTC battery avoid to put on heat position.** Please do not exceed battery temperature specification.

4. Defect NO.

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