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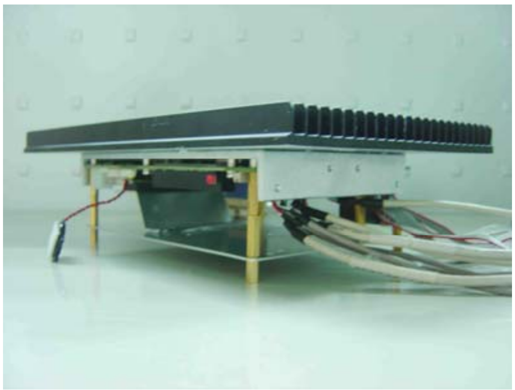
EPIC-QM77

Thermal Image Analysis Report



Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature points at 4 components were estimated to be in marginal temperature points in comparion with component datasheets.**			
Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	4
Defect Unsolved	0	0	0	4

Issue date	Approval	Test Engineer
2013 / 05 / 16	Tom Lin	Rex Chang

Sample Configuration & Quantity Under Test

- **Model name : EPIC-QM77 A0.2**
- **CPU : Intel Core i7-3555LE 2.50GHz**
- **Chipset : Intel QM77**
- **Memory : Transcend 8GB * 1 / DDR3 1600 / SEC K4B4G0846B**
- **2.5" SATA HDD : TOSHIBA MK1661GSYN / 160GB**
- **BIOS : EPIC-QM77 R1.1 (EP77AM11) (04/18/2013)**
- **Test Software : Windows 7 / Run PassMark Burn In Test 7.0**
- **Power : ATX Power**
- **Heatsink:**

Thermal Image Analysis

1. Test Date: 2013-05-16

2. Test Product: EPIC-QM77

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: 2012/10/08

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: 2013/01/08

Serial Number: 1051444

5. Test Condition:

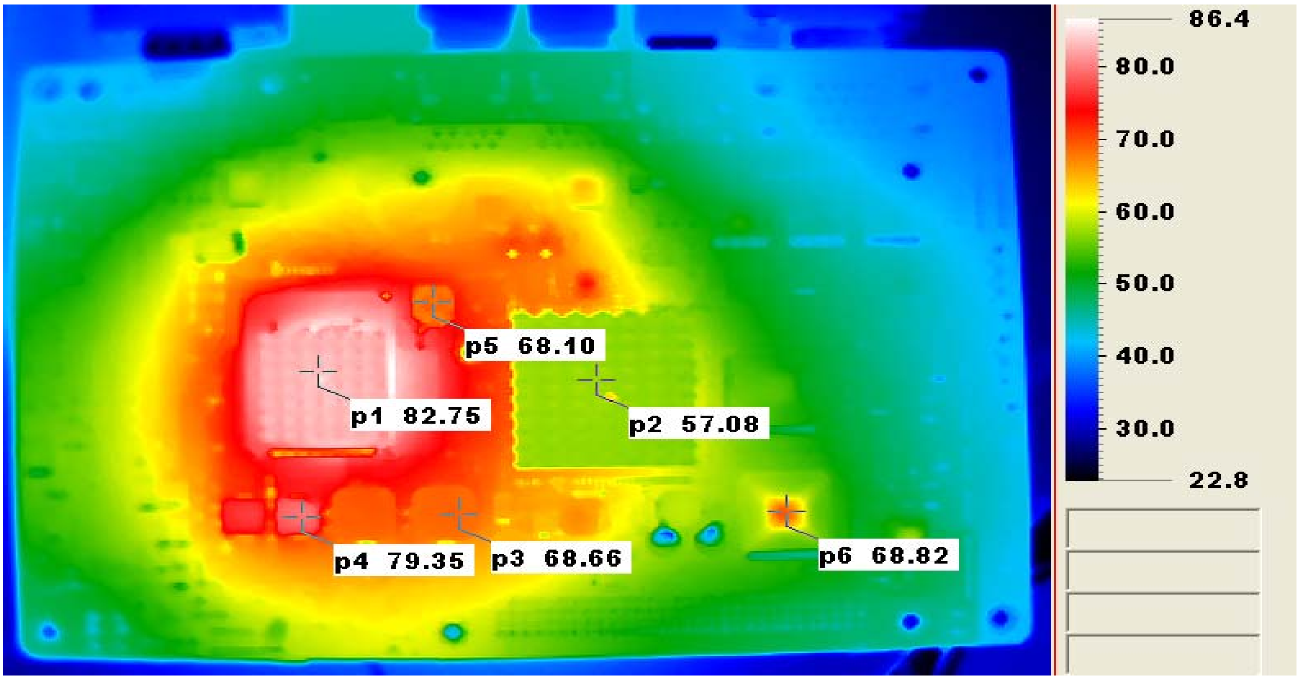
Test by DA-100: 25.0℃ With Heat Sink

6. Take Picture Time:

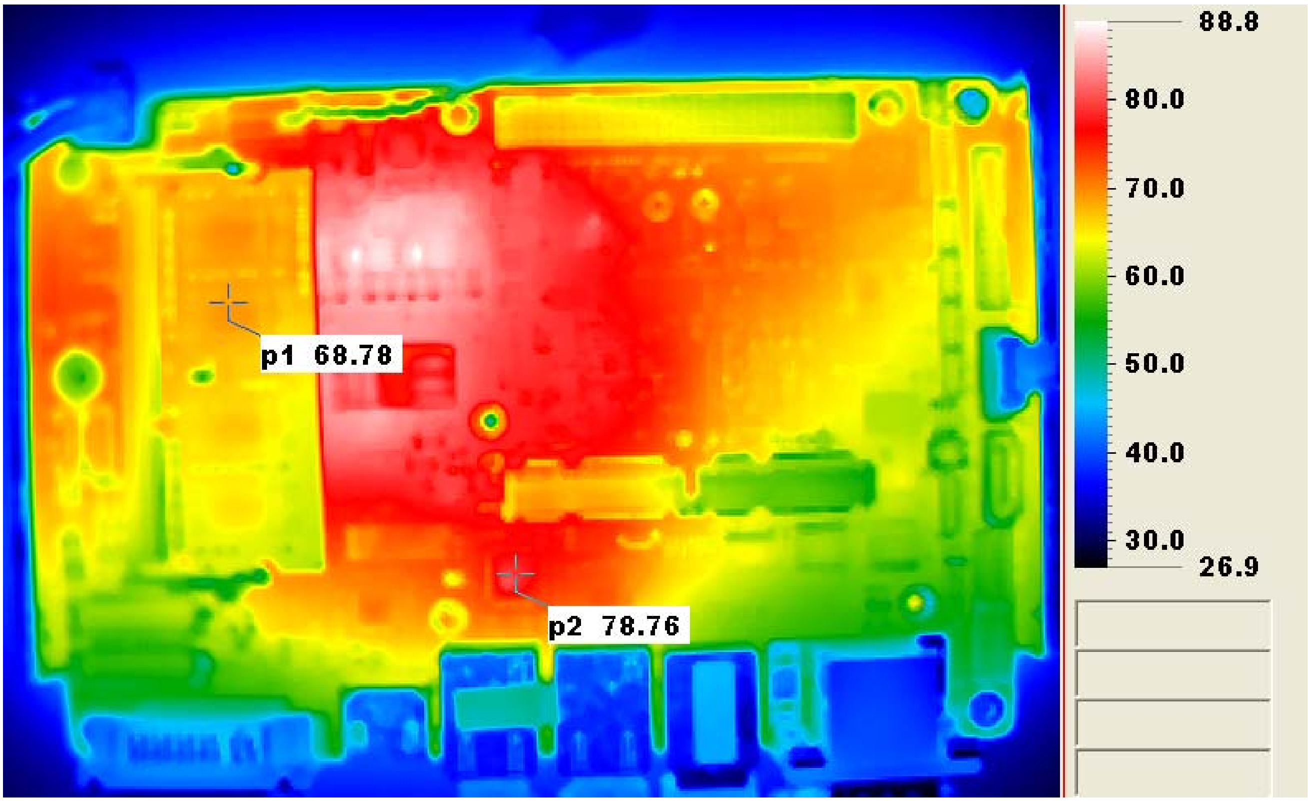
After power on 2 hours

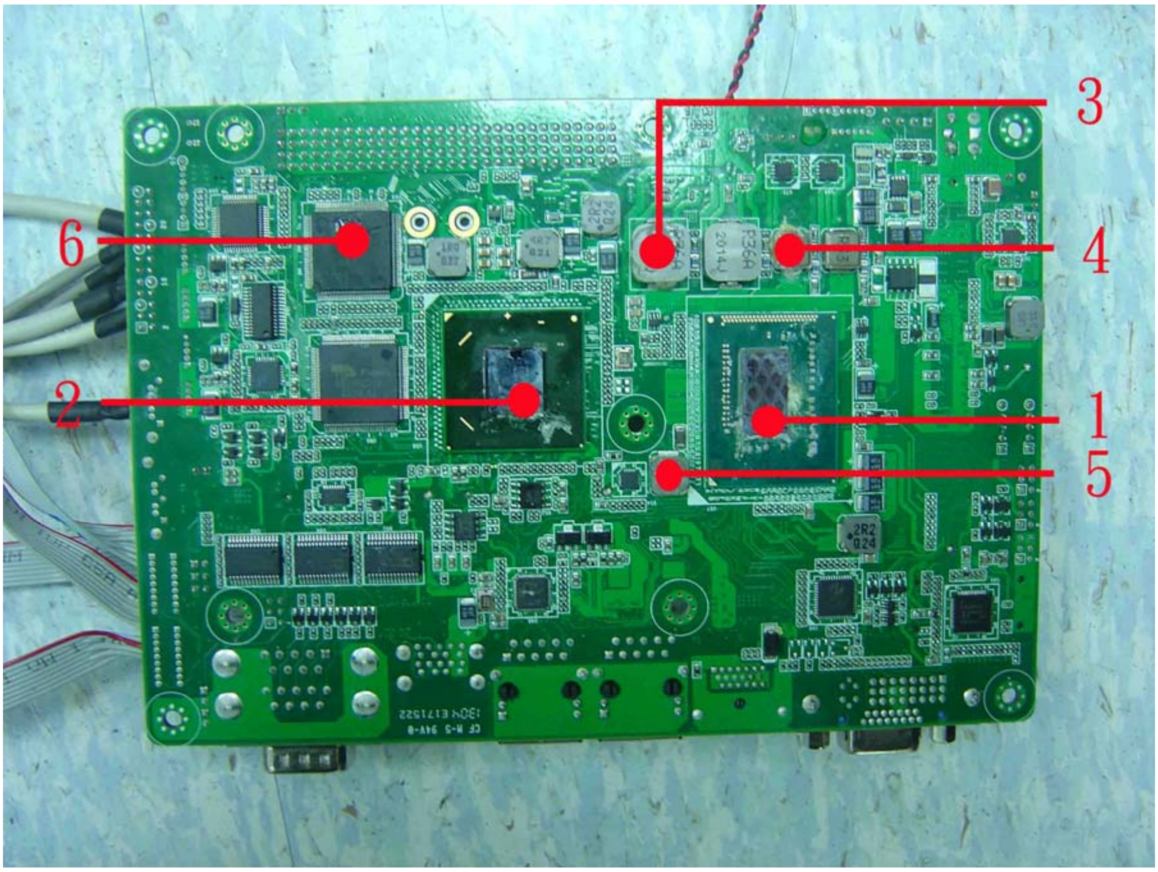
Temperature Profile Test:

Component Side:



Back Side:

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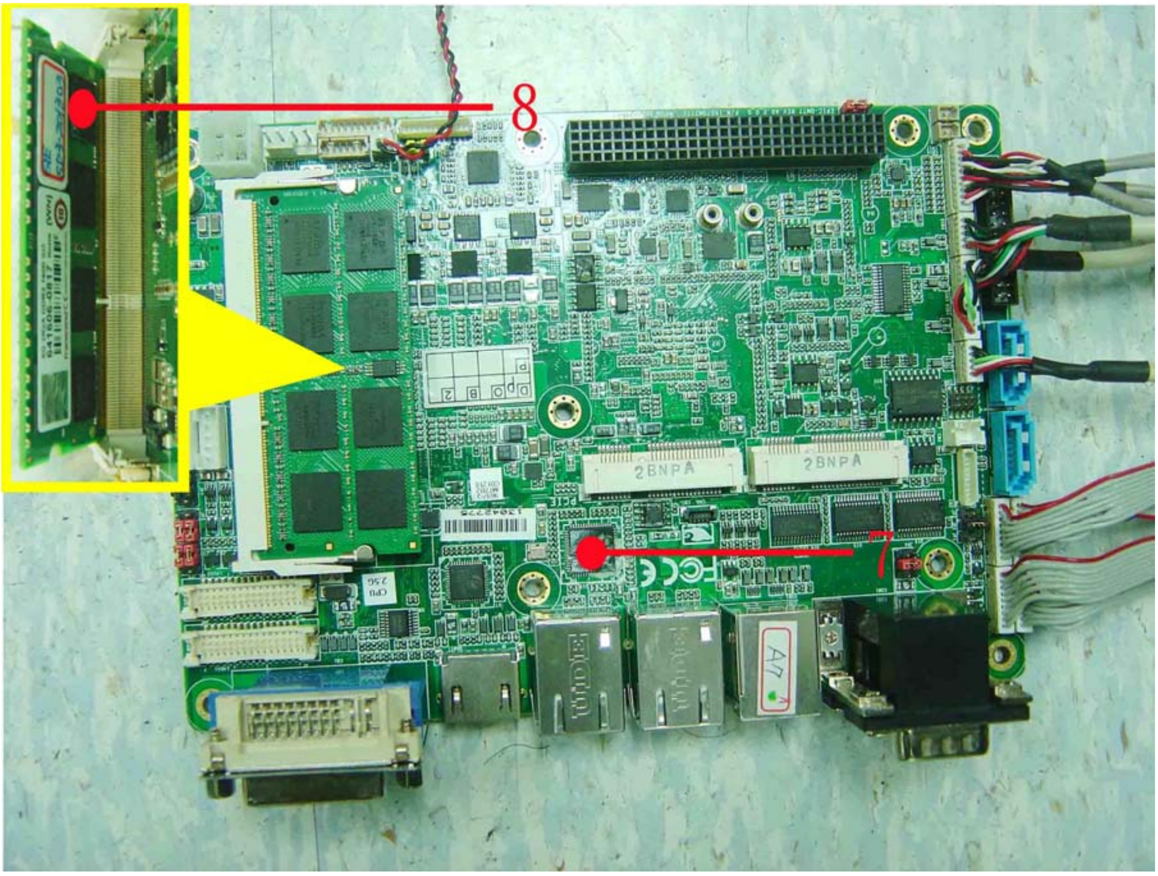
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Using YOKOGAWA / DARWIN DA100-100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	60℃	
1	CPU	(TF)INTEL Ivy Bridge CPU.i7-3555LE.2.5GHz	105	61.6	96.6	Note4
2	U58	(TF)IC.SMD.Chipset PCH.INTEL.BD82QM77 SLJ8A	108	56.4	91.4	
3	L9	(TF)COIL. Panasonic.ETQP4LR36AFC	125	66.9	101.9	
4	L12	(TF)COIL. ZenithTek.ZPWM-6030M-R33M	125	68.1	103.1	
5	L7	(TF)COIL. Panasonic.ETQP3W3R3WFN	125	65.0	100.0	
6	U66	(TF)IC. PCIe to PCI Bridge Chip.ITE.IT8892E	85	53.6	88.6	Note4
7	U10	(TF)IC. PCI-E GigaBit Ethernet Chipset.Intel.WG82583V	109	68.6	103.6	Note4
8	RAM	Memory chipset	95	59.7	94.7	Note4

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. E120909QED01