EMB-QM67

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Two temperature point need improving**

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date	Approval	Test Engineer
2011 / 10 / 19	Jansin Lee	Rex Chang

Sample Configuration & Quantity Under Test

- **Model name : EMB-QM67 A0.2**
- **CPU Board : EMB-QM67 A0.2**
- **CPU : Intel Core i7 2710QE / 2.10GHz**
- **Memory : Transcend 4GB * 2 / DDR3-1333 / Hynix H5TQ2G83BFR**
- **2.5” SATA HDD : Seagate HDD 120GB / ST9120823AS**
- **BIOS : EMB-QM67 M0C 08/29/2011 16:44:43**
- **Test Software : Windows 7 / Run PassMark Burn In Test 6.0 Pro**
- **Power : AT Power**
- **Cooler:**

Thermal Image Analysis

1. Test Date: 2011-10-19

2. Test Product: EMB-QM67 A0.2

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

1. 40 Channel Thermal Recorder:

YOKOGAWA Inc,

Model: DA100-13-1D

Date of Calibration: 2011/10/12

Serial Number: 12A323190

2. IR Scanner: Infrared Camera

NIPPON AVIONICS CO., LTD.

Model: TVS-100

Date of Calibration: 2011/07/11

Serial Number: 0179L2746

5. Test Condition:

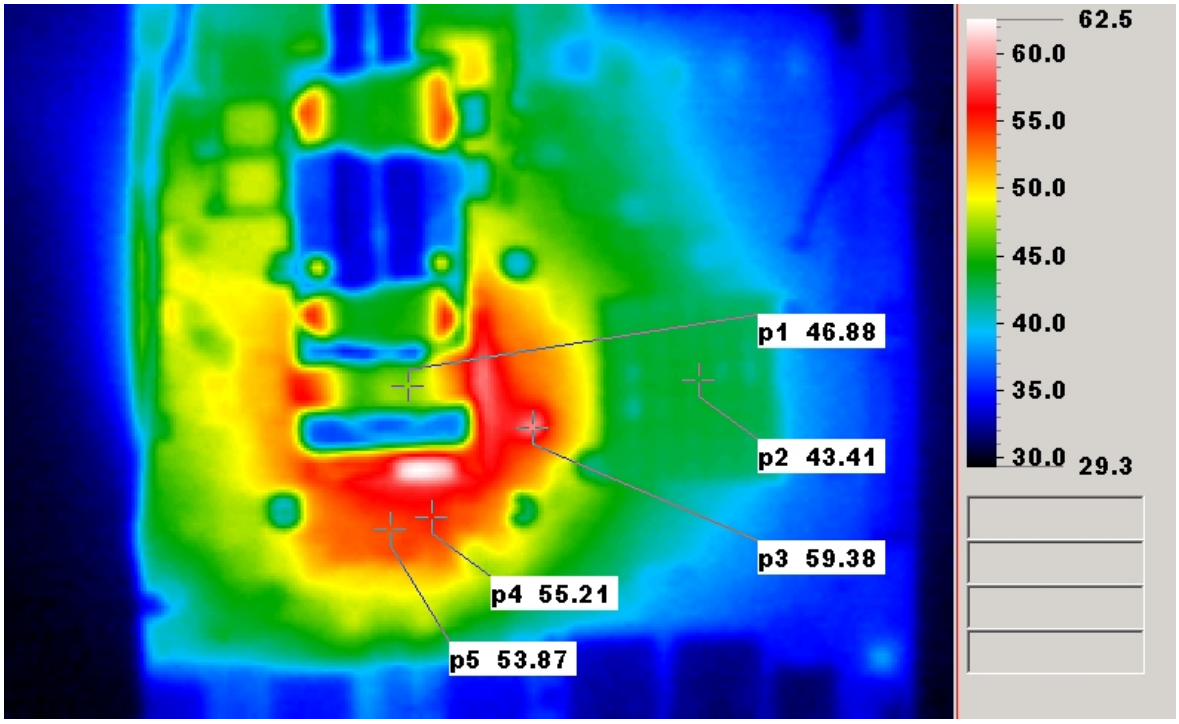
Test by DA-100: 26.0℃ with cooler

6. Take Picture Time:

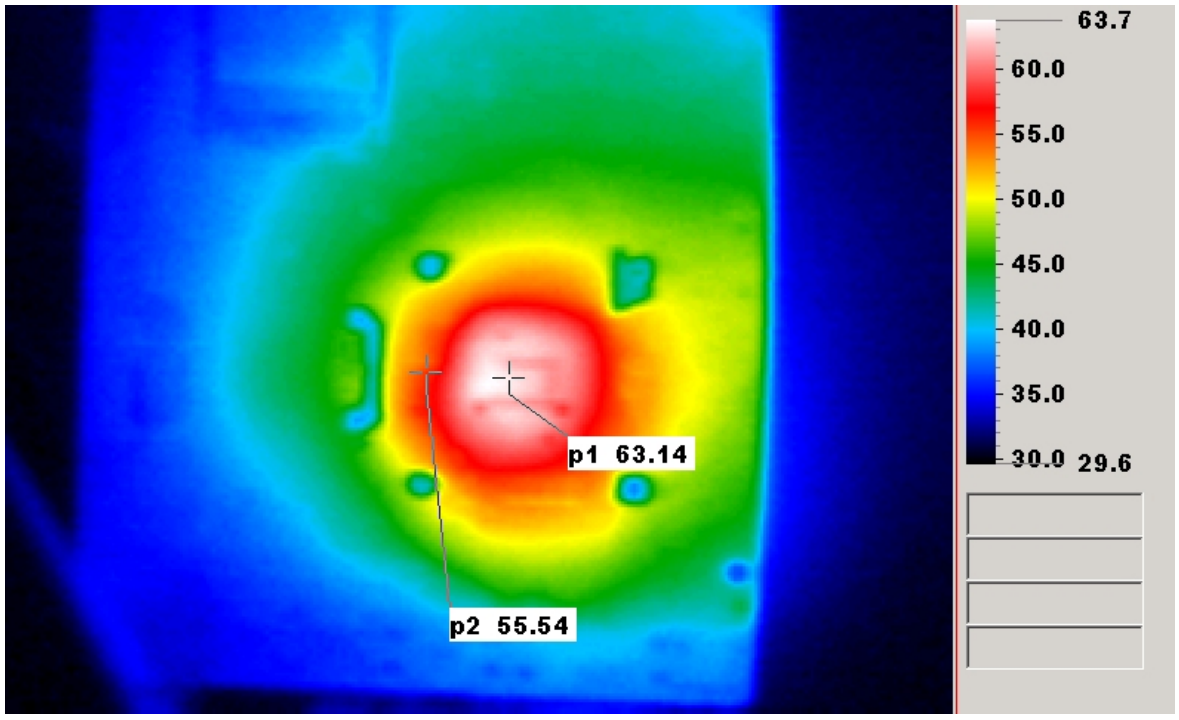
After power on 2 hour

Temperature Profile Test:

Component Side:

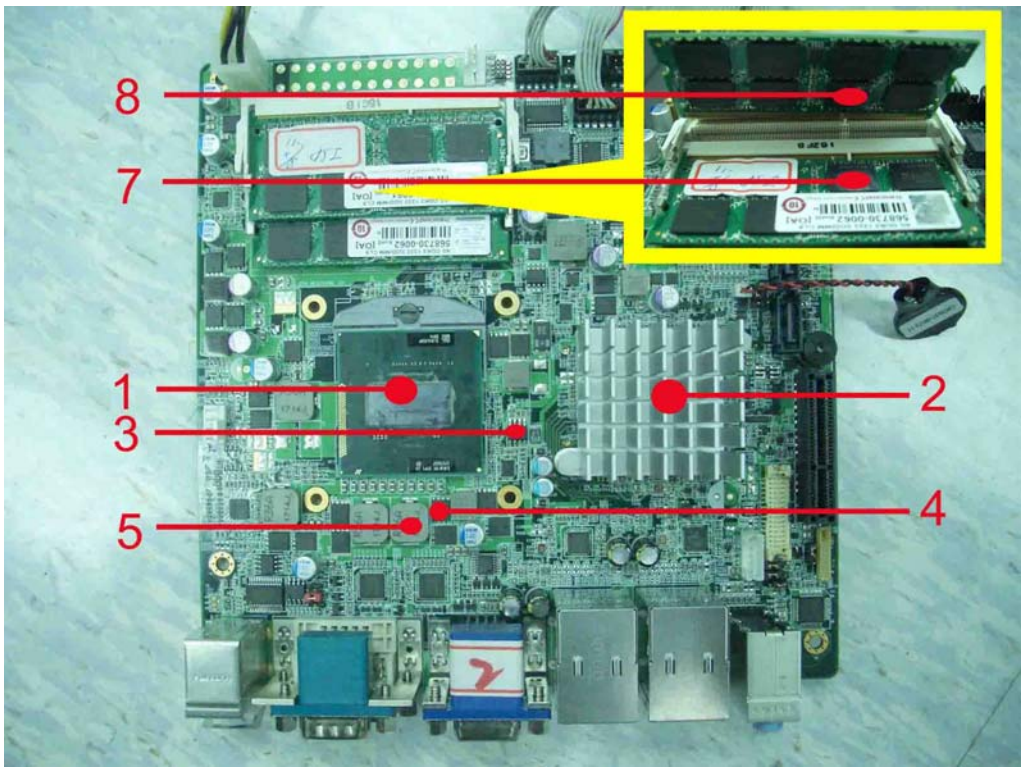


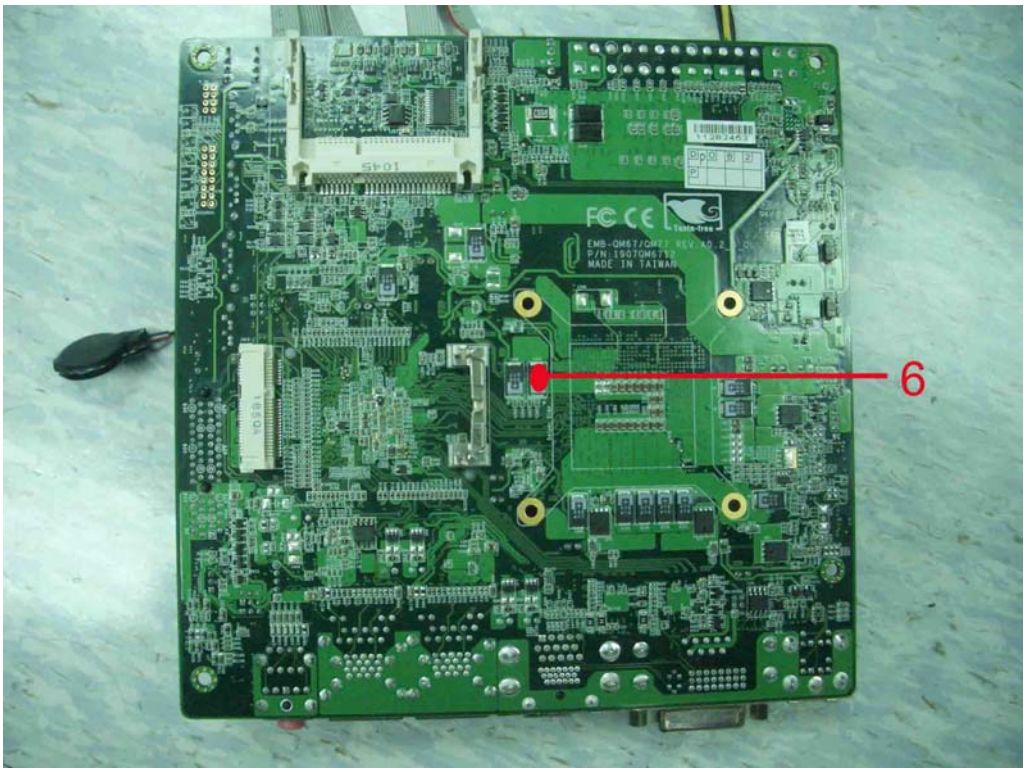
Back Side:



Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				26.0℃	60℃	
1	U26	(TF)Intel Core i7 2710QE CPU / 2.10GHz	100	61.9	95.9	Note4
2	U27	(TF)Chipset PCH.INTEL.BD82QM67 SLJ4M	108	44.2	78.2	
3	U28	(TF)Ultra Low Dropout.Linear Regulator.APEC.APE8955MP	100	65.1	99.1	Note4
4	Q32	(TF)PWR.N-MOSFET. APEC.AP3R303GMT-HF	125	69.8	103.8	
5	L15	(TF)COIL.Panasonic.ETQP4LR36AFC	130	70.9	104.9	
6	C357	(TF)POSCAP.330uF.2.5V. SANYO.2R5TPE330M9	105	57.6	91.6	
7	-	Memory chipset - 1	95	49.9	83.9	
8	-	Memory chipset - 2	95	48.2	82.2	

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. I110606QEDO6