EMB-Q170B

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** _There are three temperature point marginal passed, the functions are stable,_____

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	3
Defect Unsolved	0	0	0	0

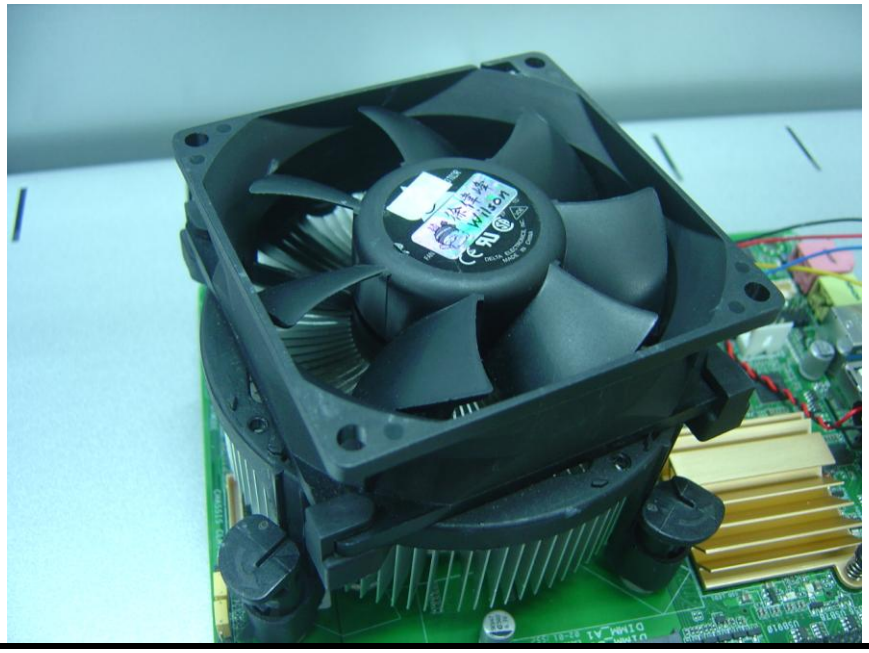
Issue date	QE Manager	Test Engineer
2016 / 04 / 18	KJ Wang	Ben Sun

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Test Product: EMB-Q170B REV. A1.01

Sample Configuration & Quantity Under Test:

1. CPU: Intel i7-6700 3.4GHz Processor
2. BIOS Ver.: R1.4(EQH0BM14)
3. Chipset: Intel Q170
4. Memory: Transcend DDR4-2133 8GB*2
5. USB Flash: Transcend 4GB (For DOS Mode Power On/Off Test)
6. Storage: Toshiba MK3276GSX 320GB
7. Test Software: Windows 8.1 / Run PassMark Burn In Test 8.0 Pro
8. Power Supply: HGS-6400P
9. CPU Cooler:



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Thermal Image Analysis

1. Test Date: 2016-04-15

2. Test Product: EMB-Q170B

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: 2015/09/10

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: 2015/12/01

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 26.2℃ with Heat Sink & Fan

6. Take Picture Time:

After power on 2 hours

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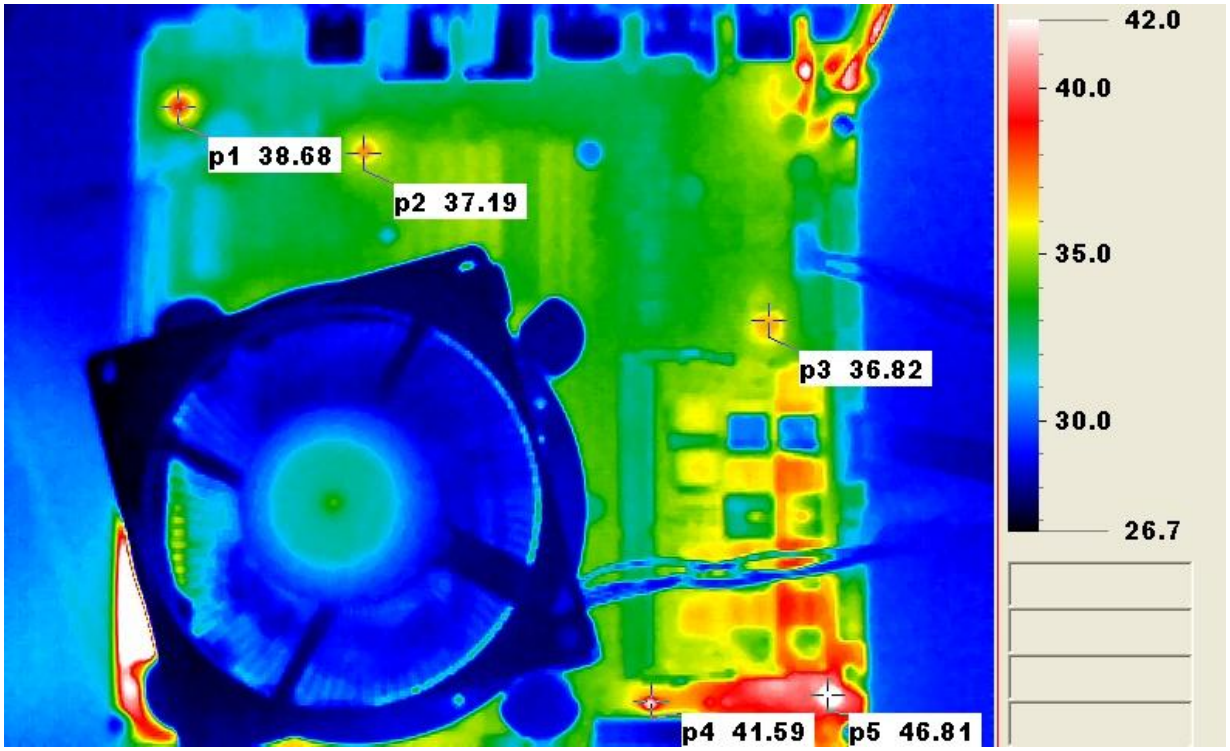
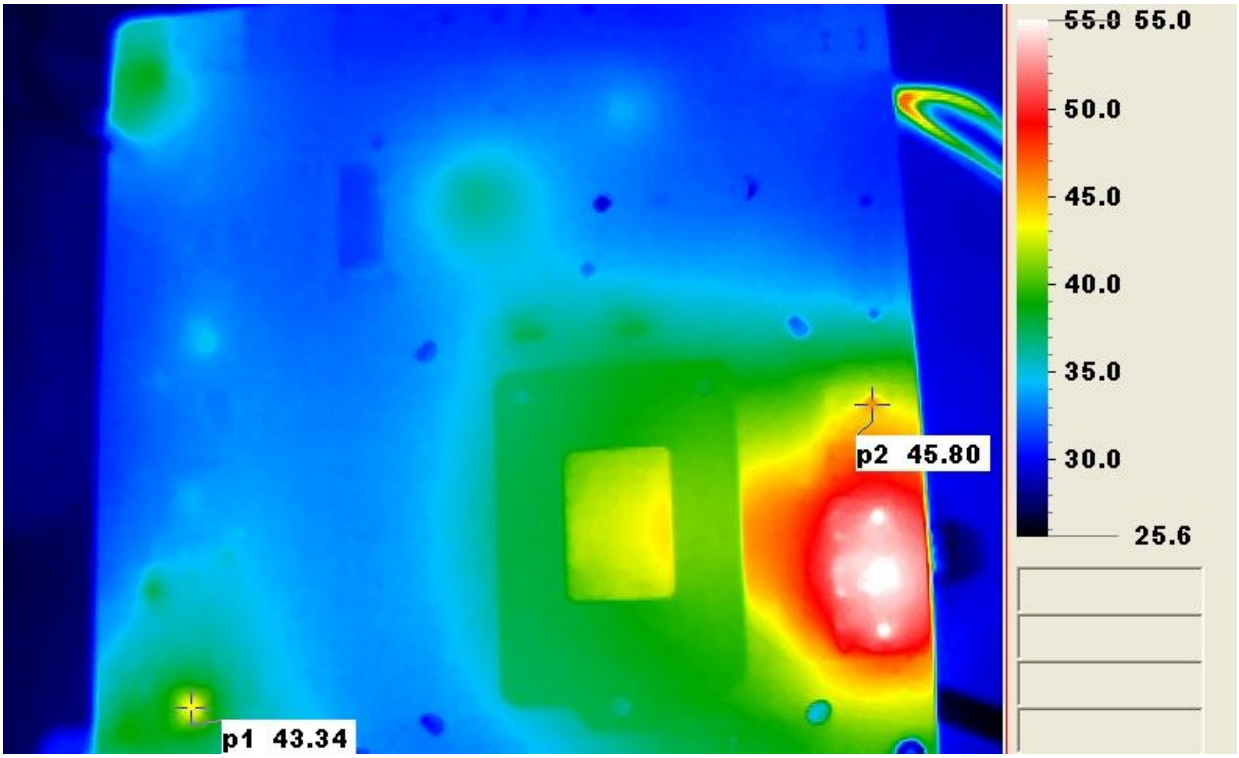
Temperature Profile Test:

Component Side:





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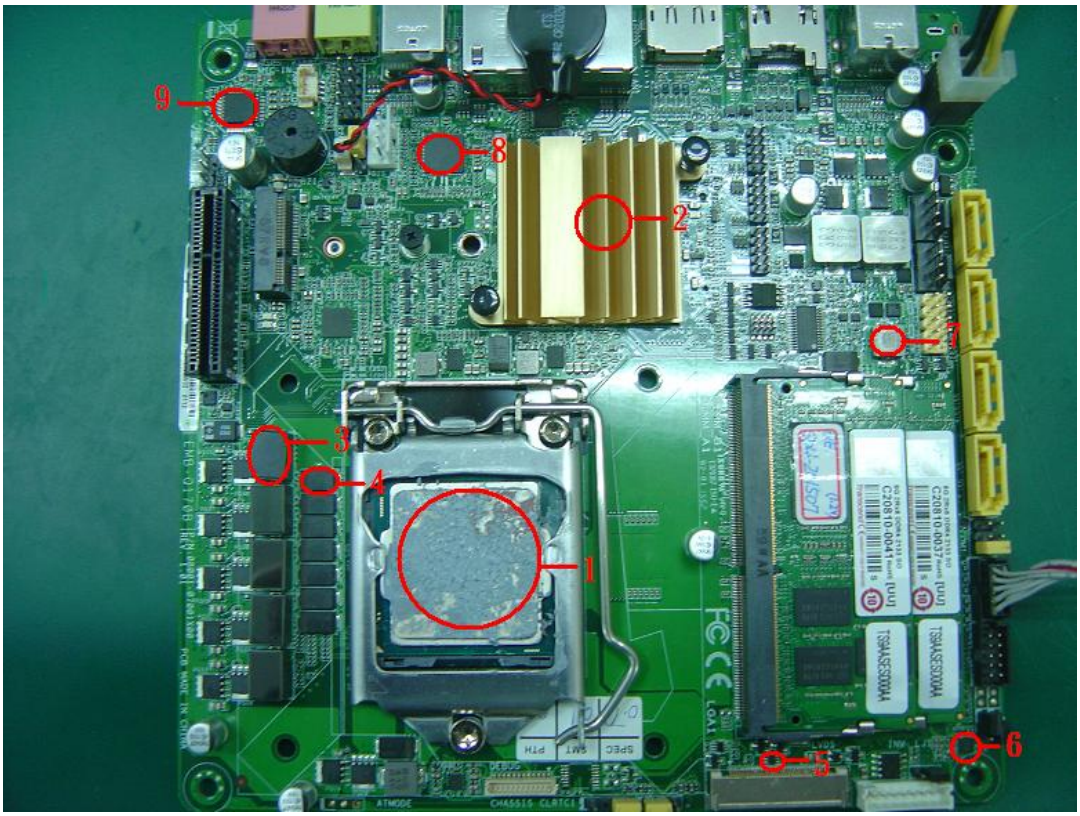
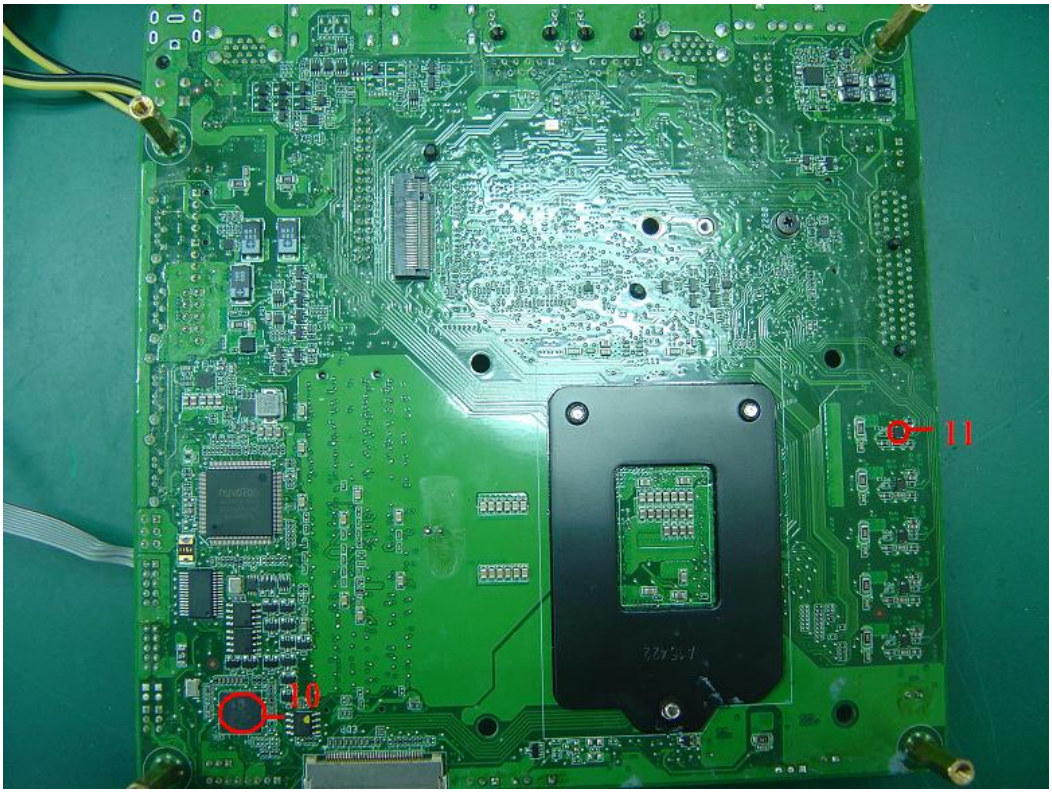
Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				26.0℃	60℃	
1	CPU	i7-6700 3.4GHz	71	36.8	70.8	NOTE4
2	SU1	C.S SKYLAKE GL82Q170 PCH-H DT	85	37.7	71.7	
3	PL11	INDUCTOR 0.215UH/48A SMD 10%	125	33.9	67.9	
4	PCE17	PL EL 470UF/2V (7343/D) 20%	125	33.8	67.8	
5	LU5	DIGI POTEN. AD5247BKSZ10-RL7	125	32.1	66.1	
6	LU4	LDO REG. UP0132PDDA	100	38.0	72.0	
7	PL4	INDUCTOR 1.5UH/10A SMD 20%	125	34.8	68.8	
8	L2U1	C.S WGI211AT(A2) QFN-64	100	36.3	70.3	
9	AU1	C.S ALC887-VD2-CG LQFP-48	100.5	35.7	69.7	
10	LU1	C.S CH7511B-BF QFN68 (GBC)	85	41.5	75.5	NOTE4
11	PU11	MOSFET DRIVER IC RT9624GGQWA	100	43.0	77.0	
12		RAM	75	37.3	71.3	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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