

IMBM-Q170A

Thermal Image Analysis Report

Summary	☐ Pass ☐ Fail ☒ Pass with Deviation Comment: <u>There are two temperature points marginal passed, The functions are stable,</u>			
Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date

2016 / 07 / 12

QE Manager

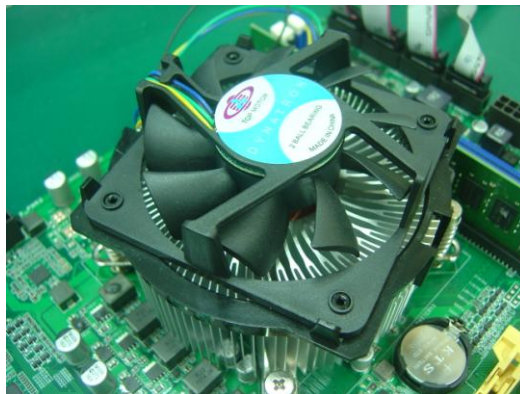
KJ Wang

Test Engineer

Ben Sun

Sample Configuration & Quantity Under Test

- **Model name : IMBM-Q170A A1.02**
- **CPU : Intel Core i7-6700 3.4GHz**
- **Memory : Transcend DDR4-2133 8GB**
- **2.5" SATA HDD : TOSHIBA / 160GB MK1676GSX**
- **BIOS : R1.6 (MQH0AM16)**
- **Test Software : Windows 8 / Run PassMark Burn In Test 8.1 Pro**
- **Power : ATX Power**
- **Heat Sink & Fan :**



Thermal Image Analysis

1. Test Date: 2016-07-11

2. Test Product: IMBM-Q170A A1.02

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:

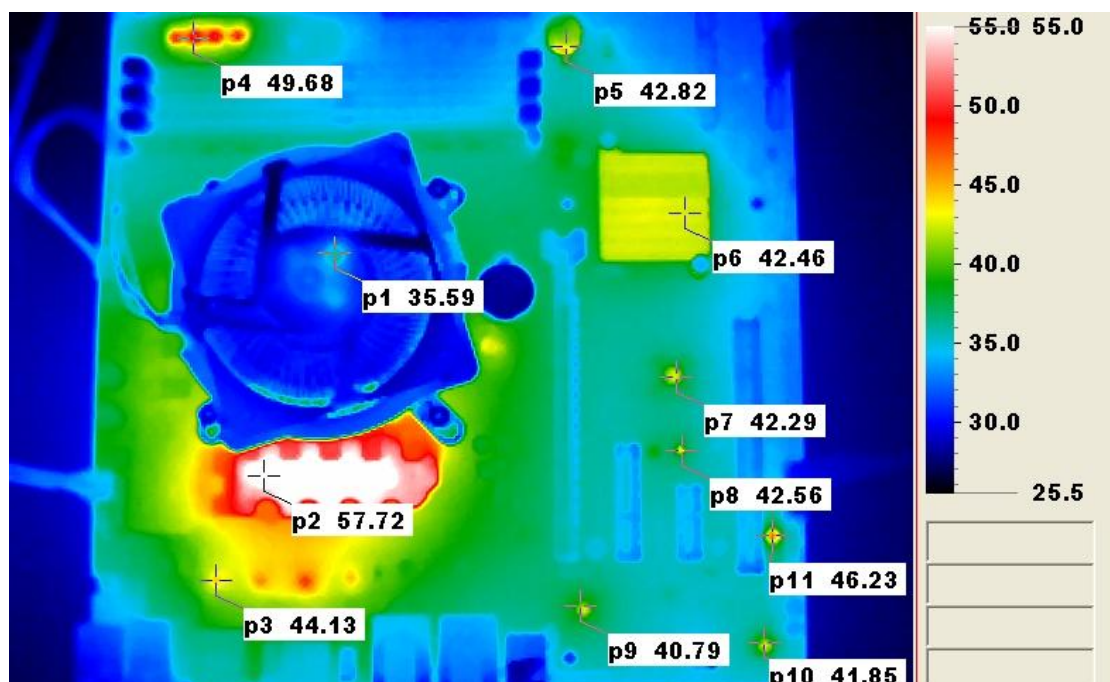
Test by DA-100: 26.2°C with Heat Sink & Fan

6. Take Picture Time:

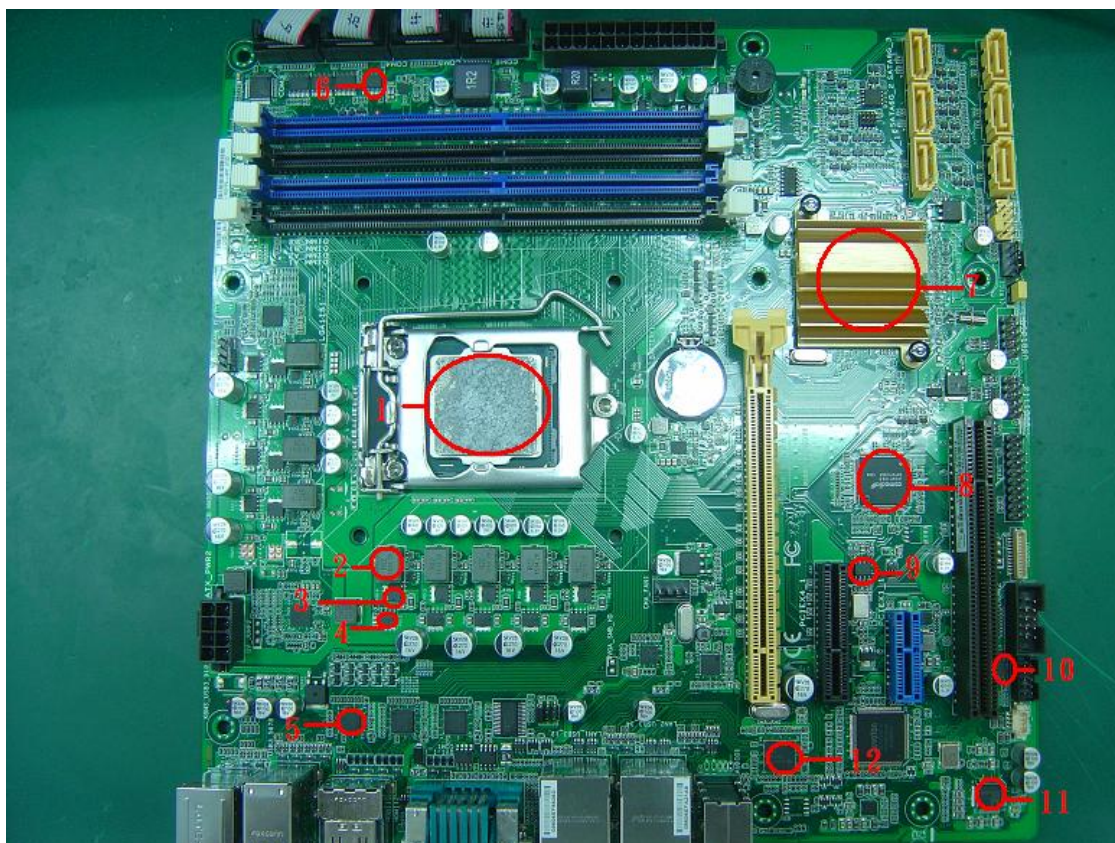
After power on 2 hours

Temperature Profile Test:

Component Side:

**Terminal Recorder:**

Measuring Thermal Couple Position :



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

Point	Position	Describe	Tc (*1) (°C)	TAT(*2)	TPT(*3)	Note
				26.0°C	60°C	
1	LGA1151	Intel i7-6700 3.4GHz	71	38.0	72.0	NOTE4
2	PL13	INDUCTOR 0.215UH/48A	100	38.2	72.2	
3	PQ14	N-MOSFET PH4030DLA SOT669	150	45.5	79.5	
4	PQ12	N-MOSFET PH6030DLB SOT669	150	42.3	76.3	
5	GU403	C.S ASM1442K	85	37.8	71.8	
6	OU13	GD75232PWR	85	55.7	89.7	NOTE4
7	SU1	SKY-H Q170	90	38.1	72.1	
8	K1U1	C.S ASM1083	85	35.0	69	
9	WU3	CLOCK Gen. ICS9112AM-16LFT	85	35.2	69.2	
10	OU8	GD75232PWR	85	42.8	76.8	
11	U10	ALC887-VD2-GR	85	40.5	74.5	
12	L2U1	C.S WGI211AT	105	36.1	70.1	
13		RAM	85	33.3	67.3	

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°C working environmental.

4. Judgment Criteria:

- **Fail** : $T_m > T_c + 5^{\circ}\text{C}$; The measured value is over specification plus margin.- **Margin** : $T_c + 5^{\circ}\text{C} > T_m > T_c - 10^{\circ}\text{C}$; 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** : $T_m < T_c - 10^{\circ}\text{C}$; 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.