

IMBA-Q170A

Thermal Image Analysis Report

Summary	☐ Pass			
	☐ Fail			
	☒ Pass with Deviation			
	Comment: <u>There are six temperature points marginal passed, the system works properly.</u>			
Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	6
Defect Unsolved	0	0	0	6

Issue date

2017 / 08 / 29

QE Manager

KJ Wang

Test Engineer

Ben Sun

Sample Configuration & Quantity Under Test

- Model name : IMBA-Q170A R1.0
- CPU : Intel Core i7-6700 3.4GHz
- Memory : Innodisk DDR4 2400 16GBx4pcs
- 2.5" SATA HDD : TOSHIBA / 160GB MK1676GSX
- BIOS : R0.3(AQH0AM03)
- Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro
- Power : ATX Power
- Cooler & M/B :



Thermal Image Analysis

1. Test Date: 2017-08-21

2. Test Product: IMBA-Q170A R1.0

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: 2017/09/10

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: 2017/12/01

Serial Number: 1051444

5. Test Condition:

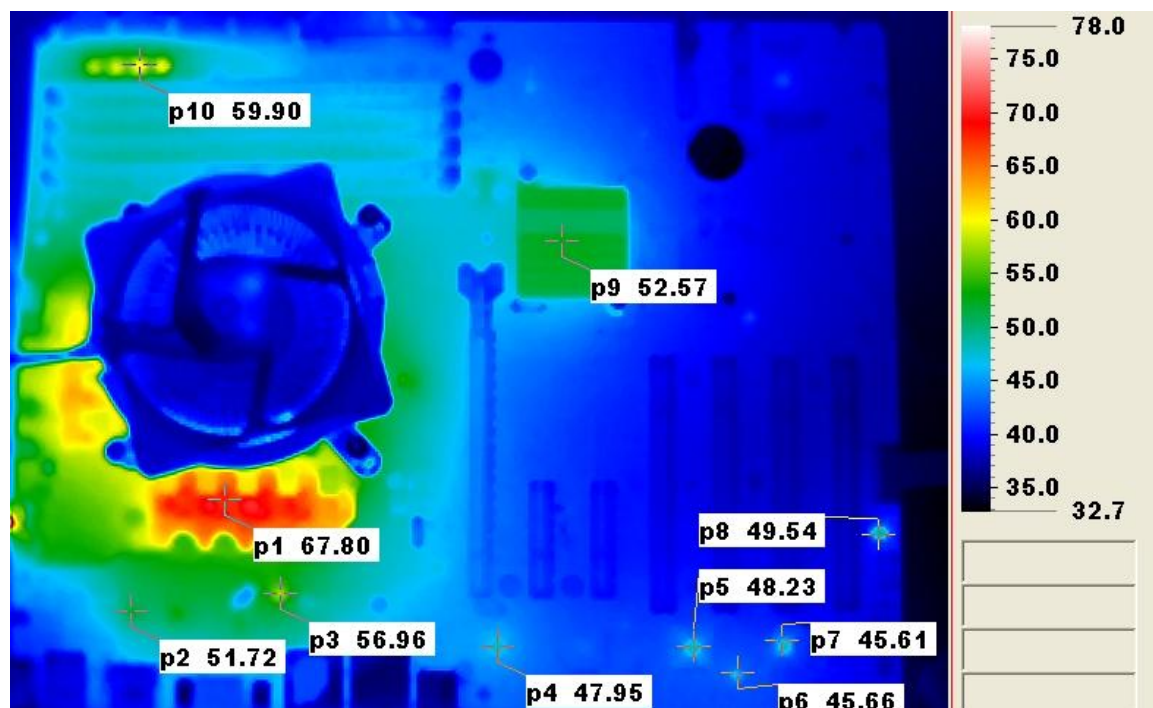
Test by DA-100: 26.2°C with Heat Sink & Fan

6. Take Picture Time:

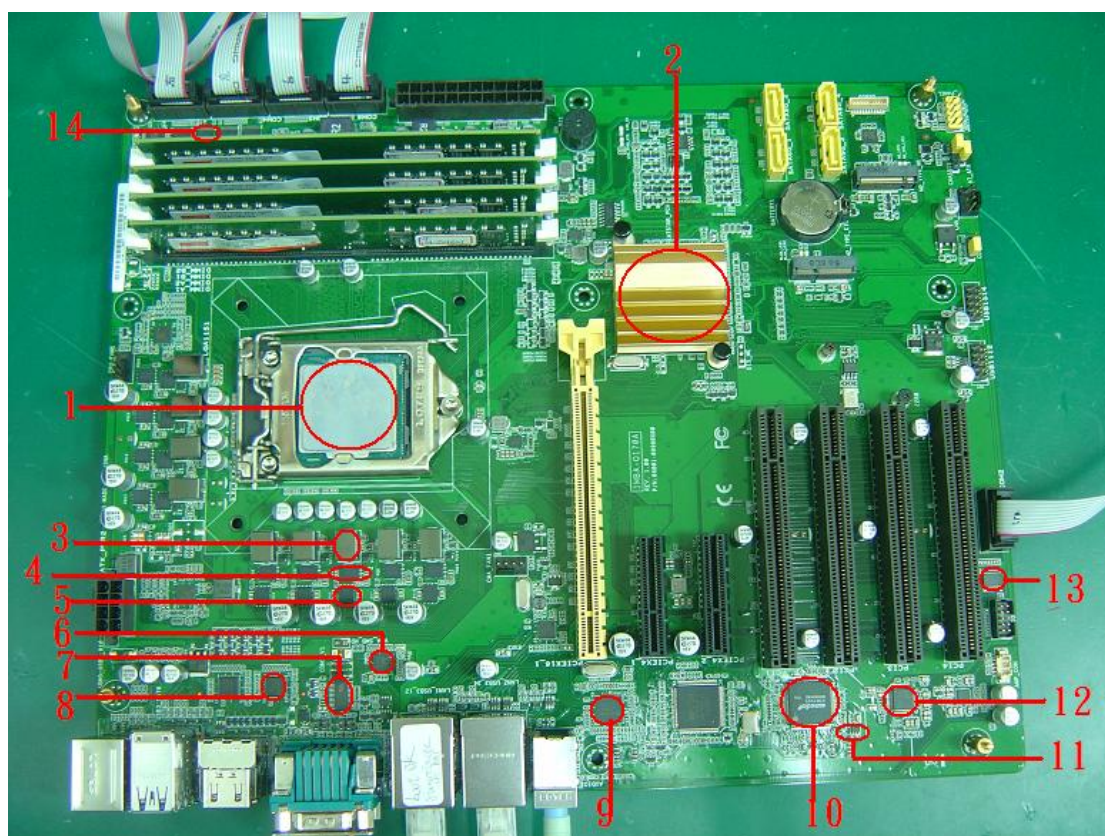
After power on 2 hours

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
				25.0°C	60°C	
1	LGA1151	Intel i7-6700	71	38.8	73.8	
2	SU1	C.S SKYLAKE GLQ170 PCH-H DT	83	46.8	81.8	
3	PL11	INDUCTOR 0.215UH / 48A SMD 10% / MAGIC / SIHH1075-R22K-R29	125	69.0	104.0	
4	PQ10	N-MOSFET NTMFS4C06NBT1G	125	76.0	111.0	
5	PQ8	N-MOSFET NTMFS4C09NBT1G	125	70.5	105.5	
6	GU3	BRIDGE RTD2168-ASU-CG QFN32BRIDGE RTD2168-ASU-CG QFN32	100	53.8	88.8	
7	U18	INTERFACE F81438G TSSOP-28	85	48.0	83.0	
8	GU404	C.S ASM1442K (A1) QFN-48	85	47.1	82.1	
9	L2U1	C.S WGI211AT(A2) QFN-64	85	48.8	83.8	
10	K1U1	C.S ASM1083 (B3) LQFP128L	94.6	40.3	75.3	
11	K1PU1	LDO REG. UP8805QMA5-00	125	56.0	91.0	
12	U10	C.S ALC887-VD2-CG LQFP-48	100.5	43.1	78.1	
13	OU8	HF INTERFACE 75232G-P20-R	125	48.8	83.8	
14	OU12	HF INTERFACE 75232G-P20-R	125	53.8	88.8	
15		RAM	85	53.5	88.5	

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.