NIS-Q170J

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** There are three temperature point marginal passed.

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

Issue date	QE Manager	Test Engineer
2017 / 09 / 01	**KJ Wang**	**Jerry Chen**

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

Sample Configuration & Quantity Under Test

- **Model name : NIS-Q170J**
- **M/B Name : NIS-Q170J / Rev. 1.0**
- **CPU : Intel Core i7-6700 3.4 GHz**
- **BIOS : R0.3 (Q170JM03) (07/14/2017)**
- **Chipset: Intel Q170**
- **Memory：Innodisk / 16GB DDR4 2400 DIMM / SEC K4A8G085WB * 4pcs**
- **2.5” SATA HDD: Toshiba 320 GB / MQ01ABF032**
- **Test Software：Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **ATX Power Supply: CWT /DSA400P-C / 400W**
- **CPU Cooler:**

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Thermal Image Analysis

1. Test Date: 2017-08-31

2. Test Product: NIS-Q170J

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: 09/10/2016
Due date of Calibration: 09/09/2017
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: 11/29/2016
Due date of Calibration: 11/28/2017
Serial Number: 1051444

5. Test Condition:

Test by DA-100: 25.0℃ with Cooler (Fan full speed)

6. Take Picture Time:

After power on 2 hours

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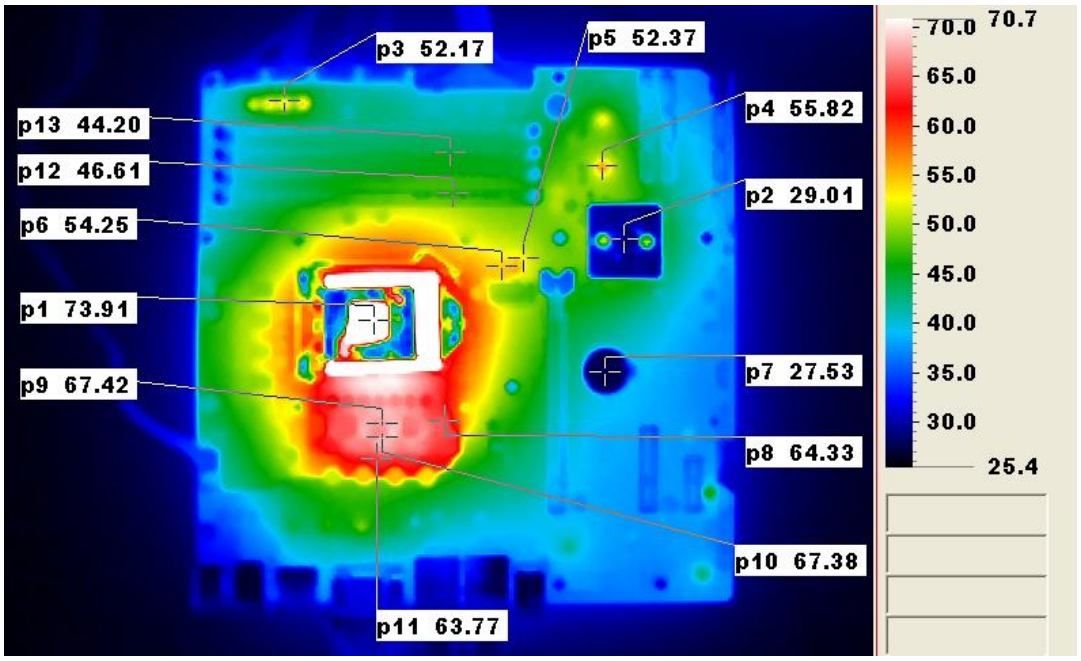
Temperature Profile Test:

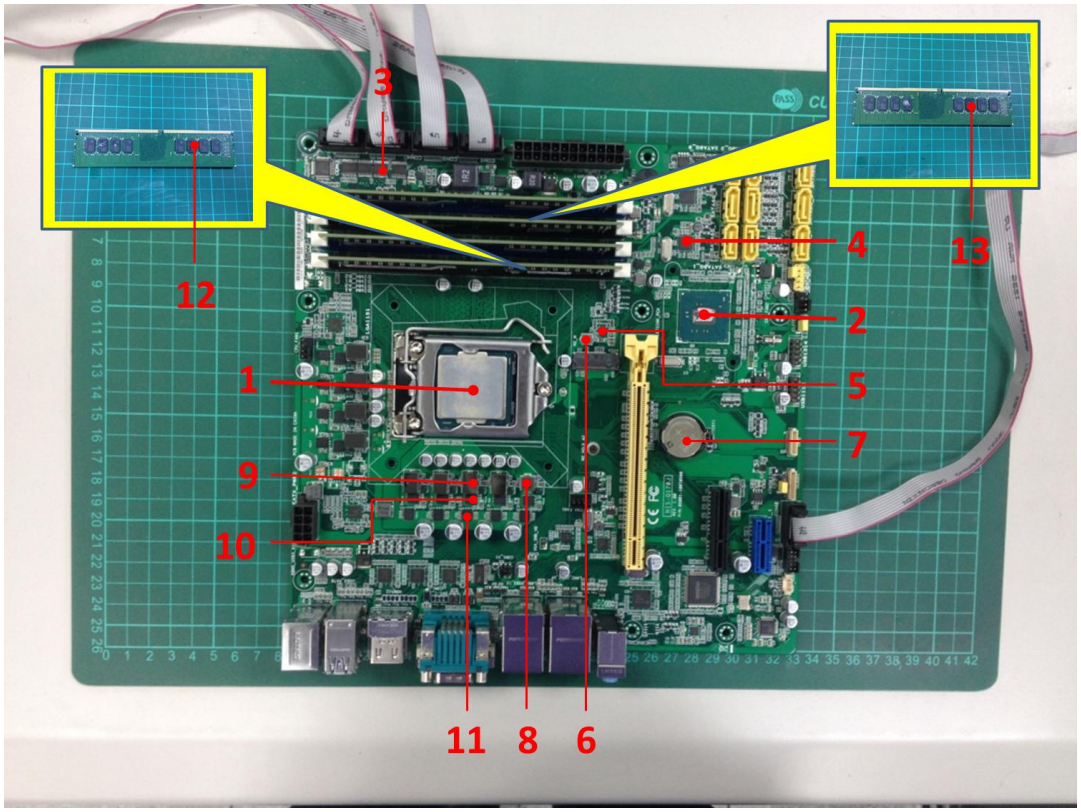
Front Side:



Terminal Recorder:

Measuring Thermal Couple Position：

Front Side:



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Using YOKOGAWA Inc / DA100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25℃	60℃	
1	LGA1151	CPU –Intel Core i7-6700 3.4 GHz	71	37.4	**72.4**	**Note 6**
2	SU1	C.S SKYLAKE GLQ170 PCH-H DT	108	36.5	71.5	
3	OU12	HF INTERFACE 75232G-P20-R	94.6	52.8	**87.8**	**Note 6**
4	TU1	C.S ASM1061 (A3) QFN48L	95	46.1	81.1	
5	PU5	DOWN CONVERTER HPA02240RVER	125	34.6	69.6	
6	PL5	INDUCTOR 1.0UH/10.1A SMD 20%	125	33.3	68.3	
7	BATTERY2	CR2032 3V/210mAh <G>	60	28.2	**63.2**	**Note 6**
8	PQ16	N-MOSFET NTMFS4C06NBT1G	125	38.6	73.6	
9	PL11	INDUCTOR 0.215UH/48A 10% MAGIC/SIHH1075-R22K-R29	125	37.3	72.3	
10	PQ10	N-MOSFET NTMFS4C06NBT1G	125	42.8	77.8	
11	PQ8	N-MOSFET NTMFS4C09NBT1G	125	40.7	75.7	
12	RAM-1	Memory chipset SEC K4A8G085WB BCRC	95	32.5	67.5	
13	RAM-2	Memory chipset SEC K4A8G085WB BCRC	95	35.9	70.9	
14	Air	Air Temperature	N/A	25	60	

Note(*):

1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.

2. "TAT" indicates the actual measured temperature under 25℃ working environmental.

3. "TPT" indicates the predicted temperature under product specification.

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.

6. Defect NO. : BUL1708LABE01

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