GENE-SKU7

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: 1.<u>There are one temperature points marginal passed, the functions are stable.</u>** **2.<u>Under PassMark Burn In Test 8.0 Pro, test Network set loading to 100% test failed (Error message shows "Timeout waiting for packet") , but change to 99% test pass. Please refer to for PASSMARK SOFTWARE</u>** http://www.passmark.com/forum/showthread.php?2931-How-to-test-burnin-test-with-Network

Test Result Summary

	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

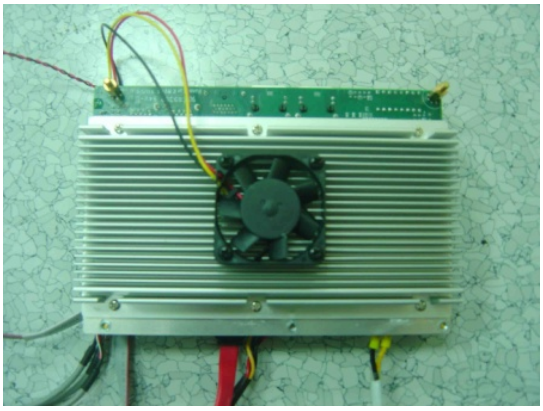
Issue date	QE Manager	Test Engineer
2017 / 05 / 11	KJ Wang	Juno Cheng

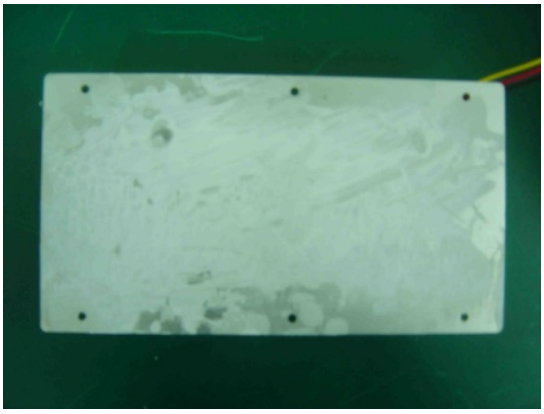
AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Sample Configuration & Quantity Under Test

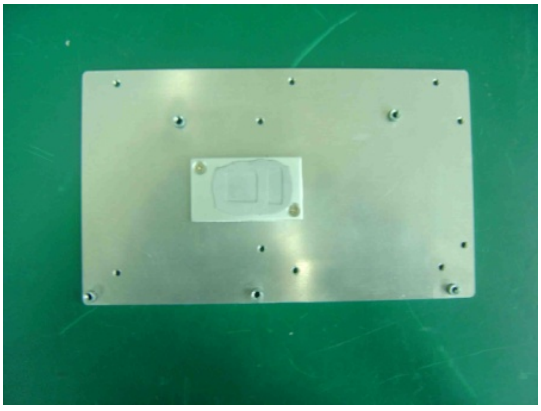
- **Model name : GENE-SKU7 A0.1**
- **CPU : Intel Core i7-6600U / 2.6GHz**
- **Memory : Kingston 16GB / DDR4 2133 / Micron 6BA77 D9SRJ *1**
- **HDD : Western Digital WD2500BEVT / 250 GB**
- **BIOS : ESBD-TWITES R0.4 (EITEAM04) (03/30/2017)**
- **Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **Power : HG2-6400P**
- **CPU Cooler :**

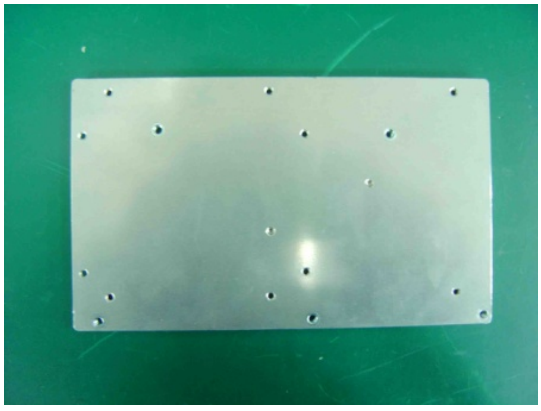
Heat Sink + FAN





Heat-Spreader + Thermal Pad





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Thermal Image Analysis

1. Test Date: 2017-05-11

2. Test Product: GENE-SKU7

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 10 Channel Thermal Recorder:

4.1.1 OMRON

4.1.2 Model: ZR-RX45

Date of Calibration: 2016/12/19

Serial Number: TH-208

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: 2016/11/29

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 25.0℃ with Heat Sink + Fan (Full Speed)

6. Take Picture Time:

After power on 2 hours

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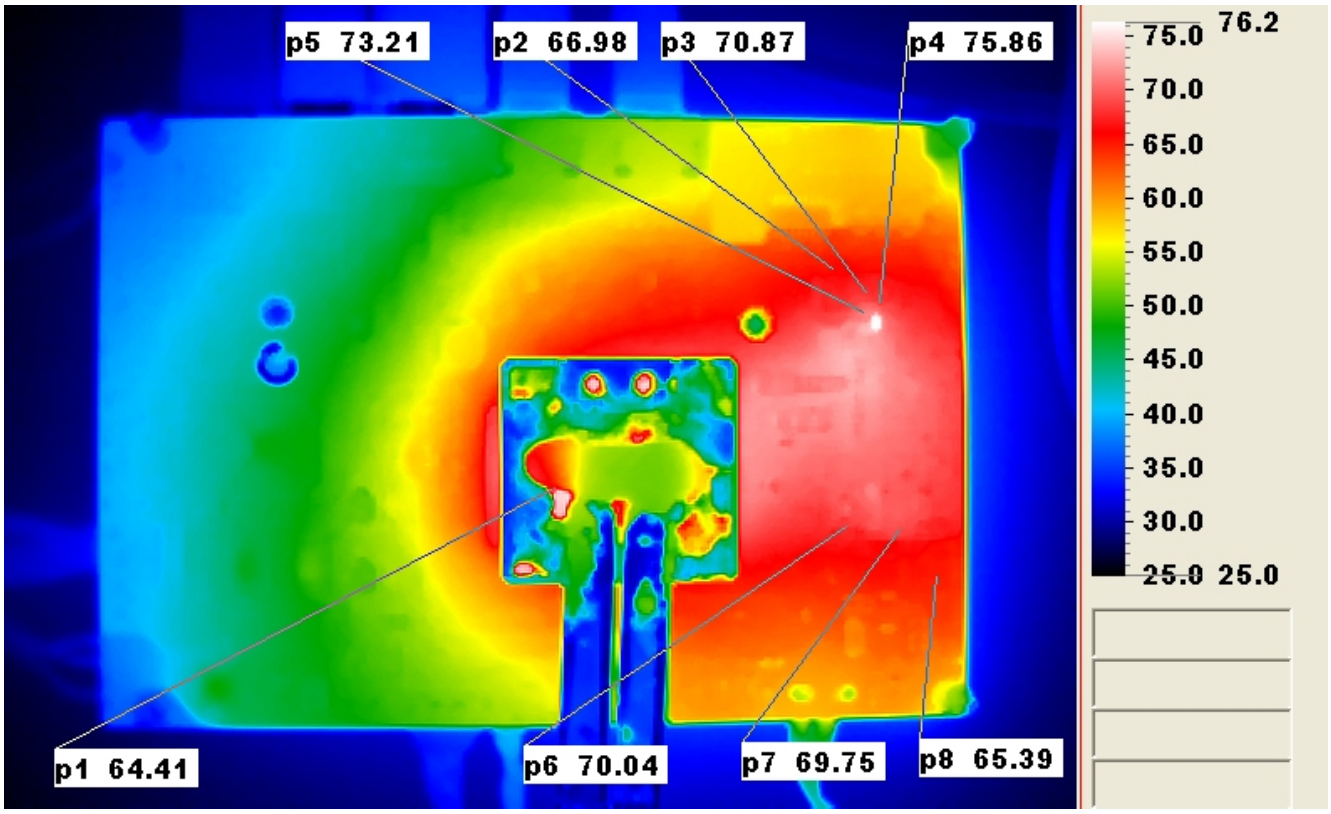
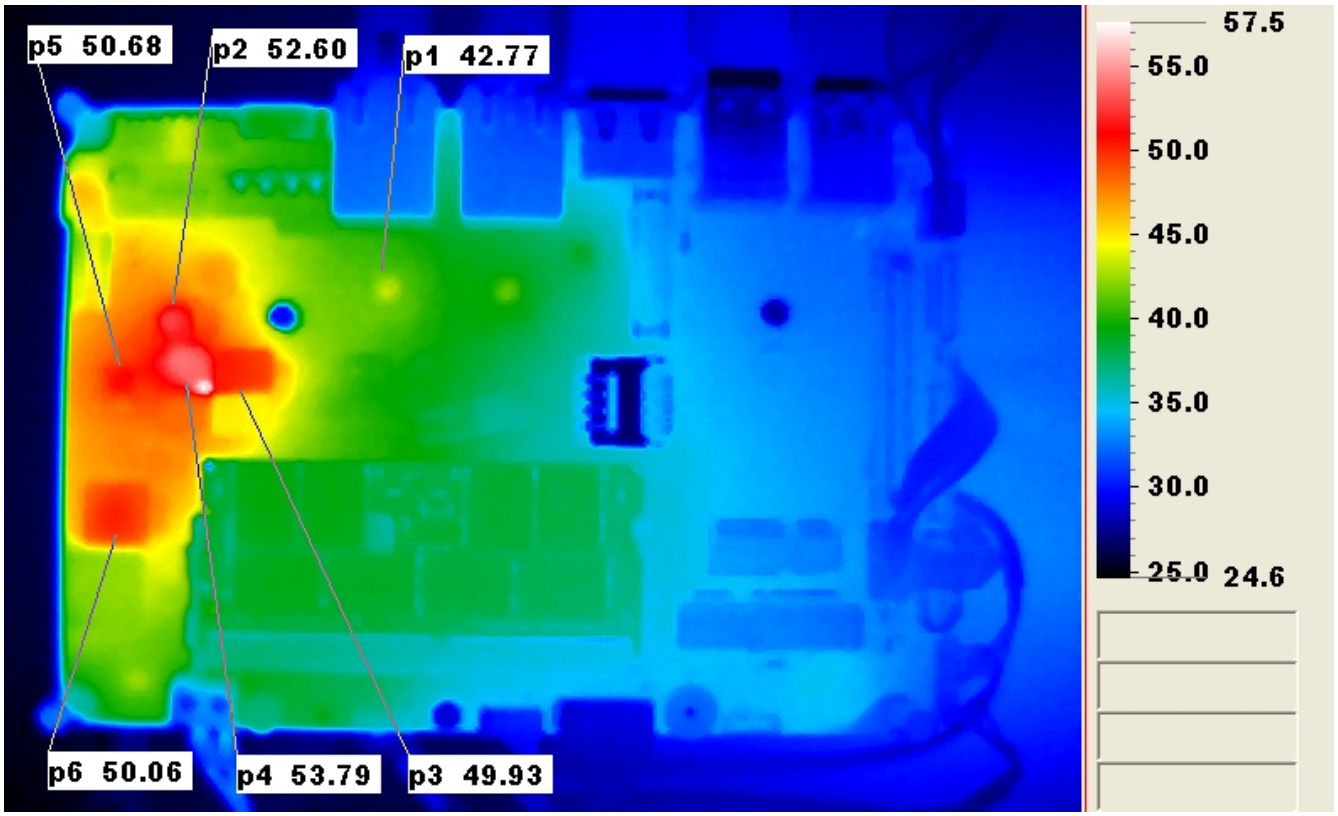
Temperature Profile Test:

Component Side:





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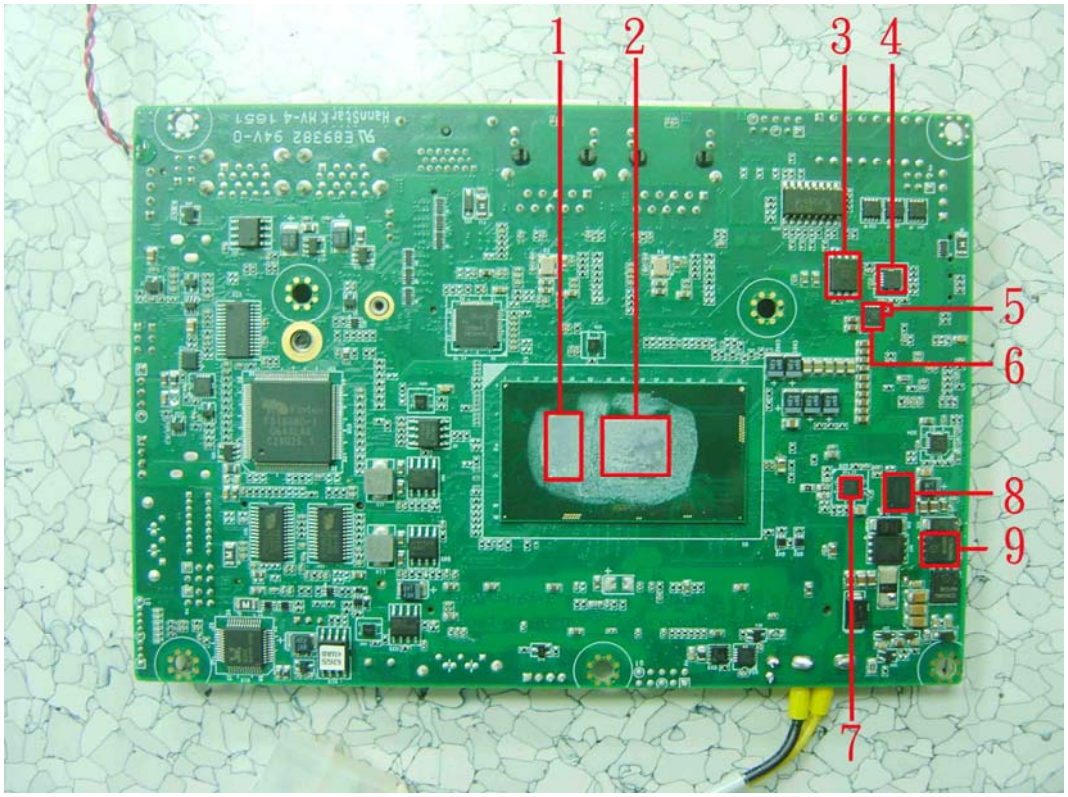
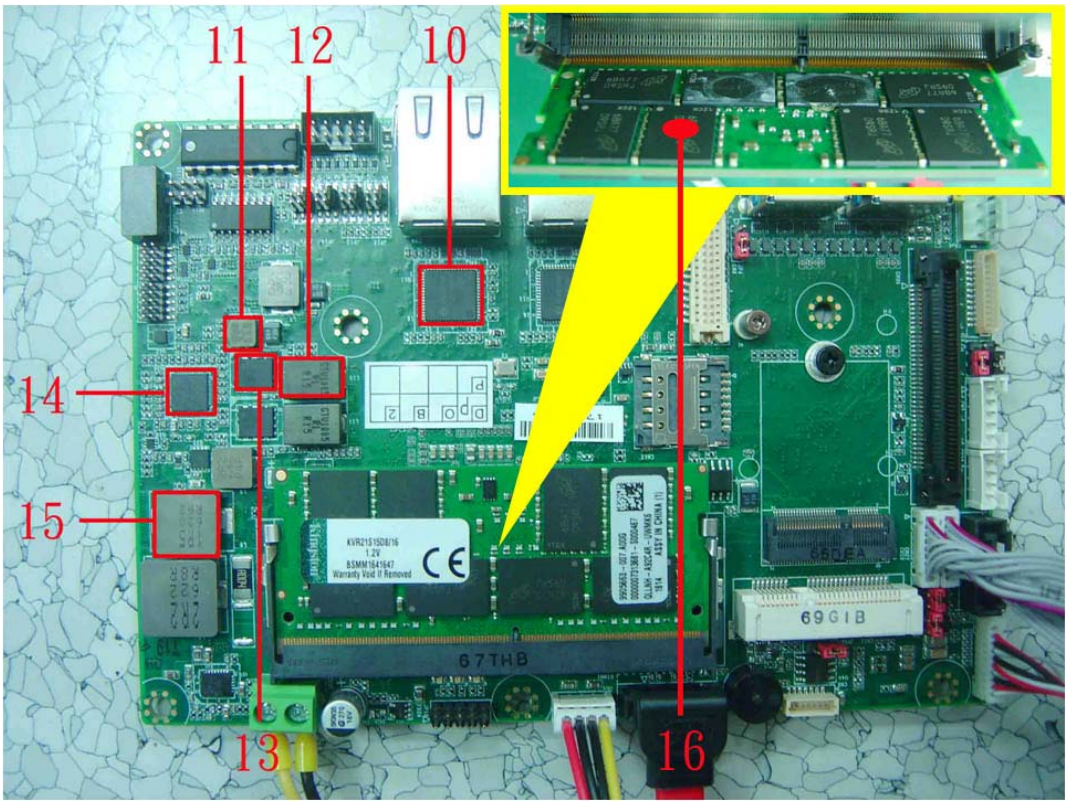
Terminal Recorder:

Measuring Thermal Couple Position：





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Using OMRON / ZR-RX25 test

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25.0℃	60℃	
1	U1	INTEL CPU.Skylake 2.6GHz.4M. i7-6600U	100	38.3	73.3	
2	U1	INTEL CPU.Skylake 2.6GHz.4M. i7-6600U	100	40.2	75.2	
3	Q34	FAIRCHILD.FDMS3664S	125	56.3	91.3	
4	U32	TI.TPS51218DSCR	125	53.9	88.9	
5	R699	CR.2.2.1/16W.5%.0402.SMD	130	61.2	96.2	
6	Q38	FAIRCHILD.FDMC7200S.Id2=8.5A.Vds1/2=30V	125	50.0	85.0	
7	U28	TI.TPS53219ARGTR	125	52.8	87.8	
8	Q21	ON.NTMFD4C50NT1G	125	53.5	88.5	
9	Q18	Infineon.BSC123N08NS3 G	125	51.5	86.5	
10	U11	Intel.WGI211AT	85	48.1	83.1	**Note4**
11	L12	COIL.NEC/TOKIN.MPLCG0530LR33	120	59.3	94.3	
12	L10	INDUCTOR.GOTREND.GTV1005PR1-R15K	125	56.1	91.1	
13	Q36	ON Semi.NTMFD4C85NT1G	125	61.1	96.1	
14	U36	ON Semi.NCP81246MNTXG	125	59.7	94.7	
15	L6	COIL.CYNTEC.PCMB104T-1R5MS	125	57.4	92.4	
16		Memory chipset	95	48.9	83.9	
16		Air Temperature	25	25.2	60.2	

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.

6. Defect NO. : BUL1702LABD01

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