GENE-SKU6

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** 1. There are five temperature points marginal passed. 2. There is one temperature point of specification only Ta but no Tc, so we mark it N/A in Tc form and can not determine it pass, fail or marginal pass. 3. They function are normal during the thermal test.

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	6
Defect Unsolved	0	0	0	6

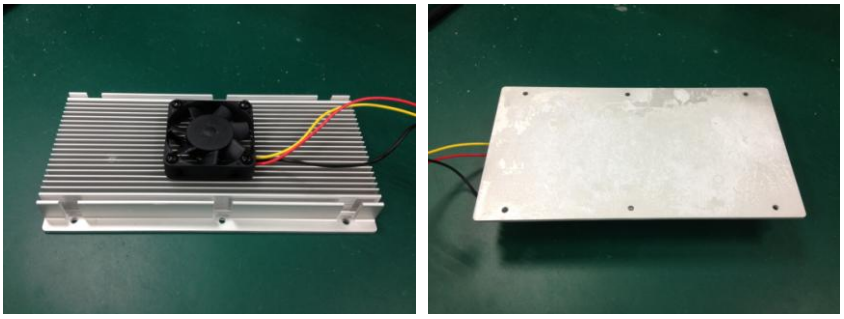
Issue date	QE Manager	Test Engineer
2016 / 07 / 22	KJ Wang	Jerry Chen

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

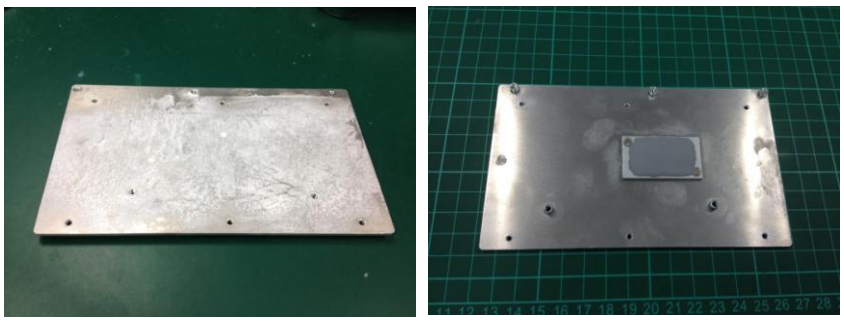
Sample Configuration & Quantity Under Test

- **Model name : GENE-SKU6**
- **CPU Board : GENE-SKU6 Rev. A0.2**
- **CPU : Intel Core i7-6600U 2.60 GHz**
- **BIOS : GENE-SKU6 R0.7 (GSKUAM07) (07/04/2016)**
- **Chipset: Intel SkyLake-U SOC**
- **Memory：Transcend DDR4 2133 ECCSP 4GB *1 / (SEC K4A4G085WD)**
- **3.5” SATA HDD: WD / WD3200AAKX 320GB**
- **Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **AT Power Supply: Zippy / HG2-6400P / 400W**
- **CPU Cooler :**

CPU Cooler.FAN+Heat Sink (P/N: 17592SKU60)



Heat-Spreader (P/N: M10SKU6000) + Thermal Pad



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

Thermal Image Analysis

1. Test Date: 2016-07-20

2. Test Product: GENE-SKU6

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 20 Channel Thermal Recorder:

4.1.1 OMRON Inc,

4.2.2 Model: ZR-RX45

Date of Calibration: 2015/12/18
Due date of Calibration: 2016/12/17
Serial Number: H30481978

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
Due date of Calibration: 2016/11/30
Serial Number: 1051444

5. Test Condition:

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

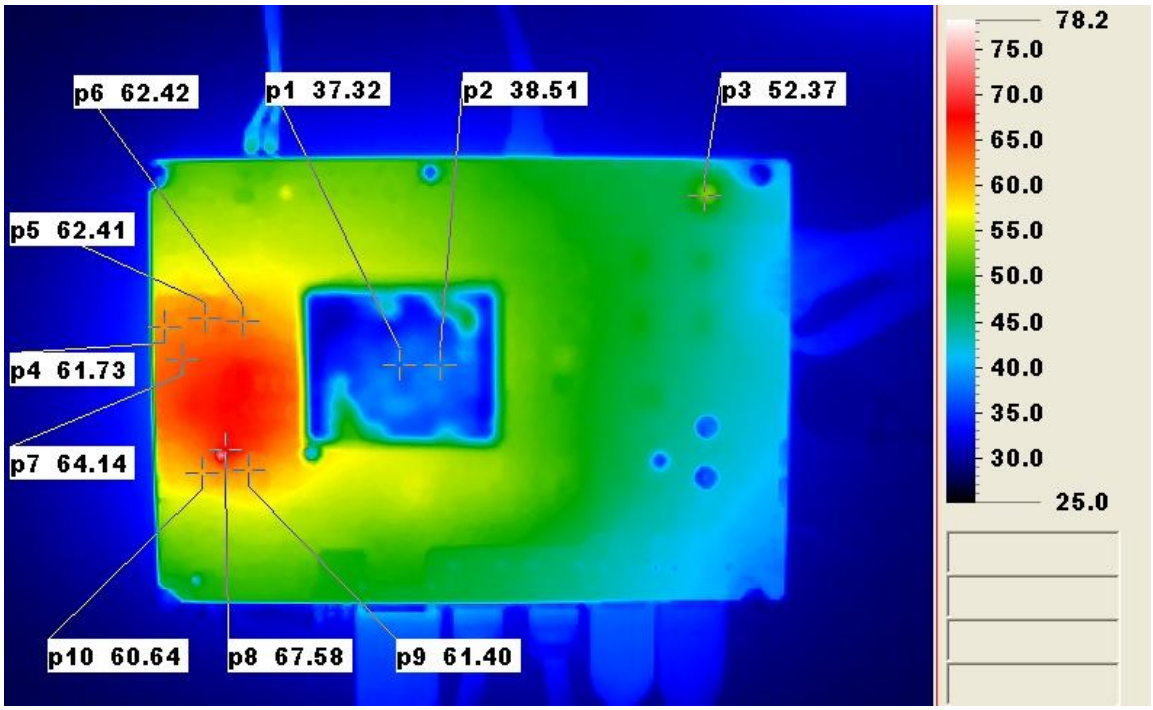
6. Take Picture Time:

After power on 2 hours

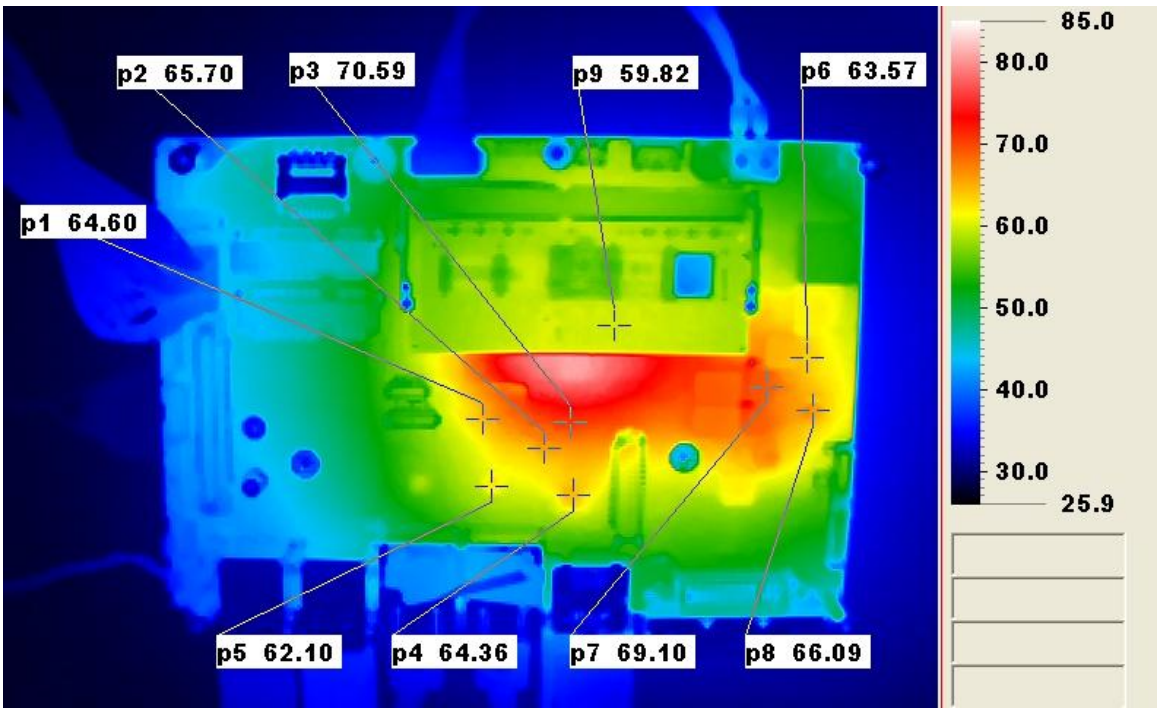
AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Temperature Profile Test:

Front Side:



Back Side:

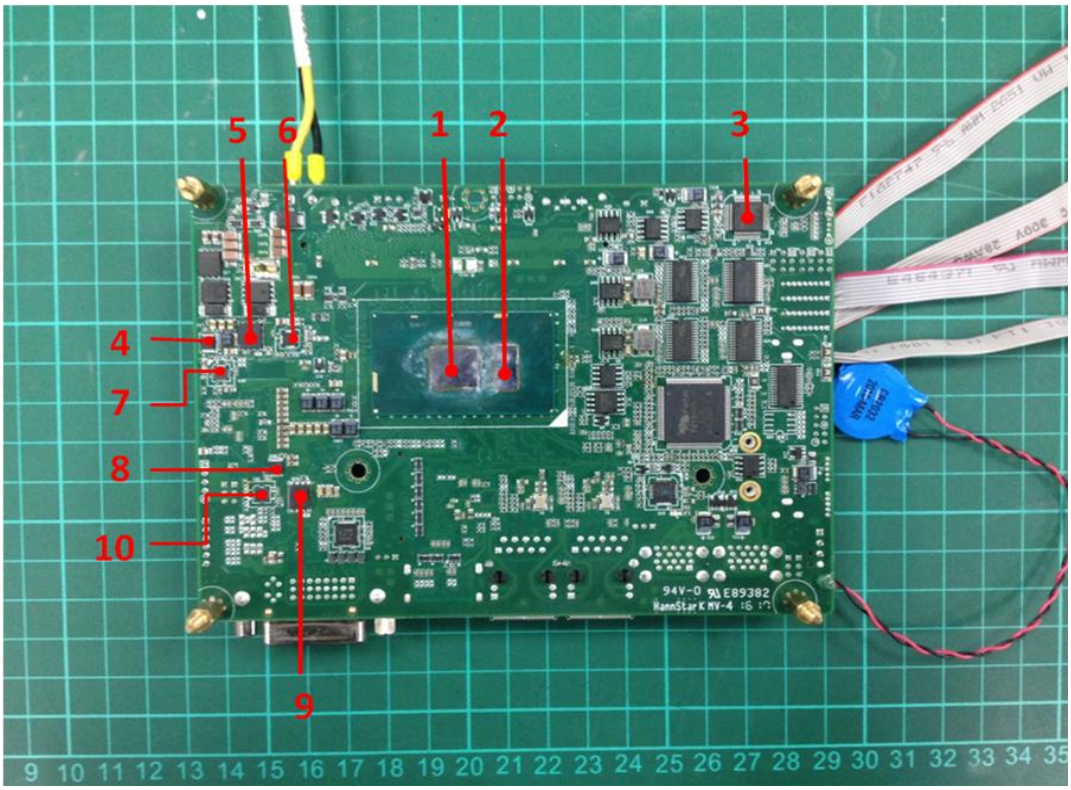


AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

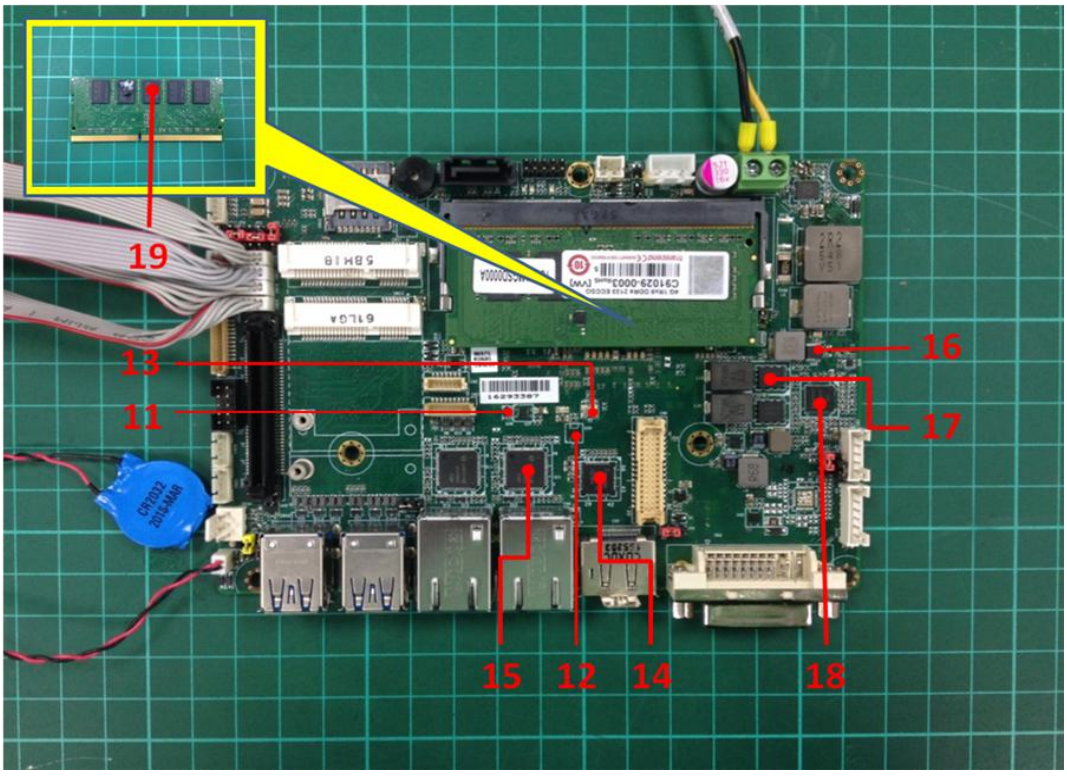
Terminal Recorder:

Measuring Thermal Couple Position：

Front Side:



Back Side:



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

Using OMRON Inc / ZR-RX45 test

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25℃	60℃	
1	U1	Intel Core i7-6600U 2.6 GHz	100	47.8	82.8	
2	U1	Intel Core i7-6600U 2.6 GHz	100	44.5	79.5	
3	U18	IC.7.1 High Definition.Audio Codec.LQFP.REALTEK.ALC892-CG	100.5	48.5	83.5	
4	Q27	PWR.MLP.P-channel MOSFET.FAIRCHILD.FDMC4435BZ	125	58.3	93.3	
5	Q21	N-MOSFET.Vgs=(+/-)20V.DFN8.ON.NTMFD4C50NT1G	125	58.8	93.8	
6	U28	IC.Wide Input Voltage.Single Synchronous.TI.TPS53219ARGTR	125	56.9	91.9	
7	U34	IC.QFN 20P.DDR MEMORY POWER SOLUTION.TPS51216RUK	100	59	**94**	**Note 6**
8	Q38	PWR.PMPAK3X3 DUAL N-MOSFET.FAIRCHILD.FDMC7200S	125	61.4	96.4	
9	Q34	PWR.DUAL.N-MOSFET.PQFN8.FAIRCHILD.FDMS3664S	125	52.4	87.4	
10	U32	IC.SON-10.Single Synchronous.Controller.TI.TPS51218DSCR	125	53	88	
11	U38	IC.SC-70.5P.2 Input AND Gate.TI.SN74LVC1G08DCKR	N/A	45.3	**80.3**	**Note 6**
12	U39	IC.Load Switch with Power Good.DFN8.NCP45520IMNTWG-H	100	47.7	82.7	
13	Y2	X'TAL.24MHz.16PF.4P.ARGO.AGX-24.000M-16-S3225-E-Z-TR	85	47.4	**82.4**	**Note 6**
14	U8	IC.Display Port to LVDS Converter.QFN 56 Pin.NXP.PTN3460BS	83.623	52	**87**	**Note 6**
15	U11	IC.PCI-E GigaBit Ethernet Chipset.QFN 64P.Intel.WGI210IT	105	50.1	85.1	
16	Q35	PWR.PMPAK3X3 DUAL N-MOSFET.FAIRCHILD.FDMC7200S	125	61.2	96.2	
17	Q37	Dual N-Channel.Vds=30V.DFN8.ON Semi.NTMFD4C85NT1G	125	65	100	
18	U36	IC.3-Rail Controller.QFN 52.ON Semi.NCP81246MNTXG	100	64	**99**	**Note 6**
19	RAM	Memory Chipset / SEC K4A4G085WD	95	51.1	**86.1**	**Note 6**
20	Air	Air Temperature	N/A	25	60	

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

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. : E151109LABD01

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