GENE-APL6

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** There are 6 temperature points marginal passed, the functions are stable.

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
2017 / 11 / 21	KJ Wang	Juno Cheng

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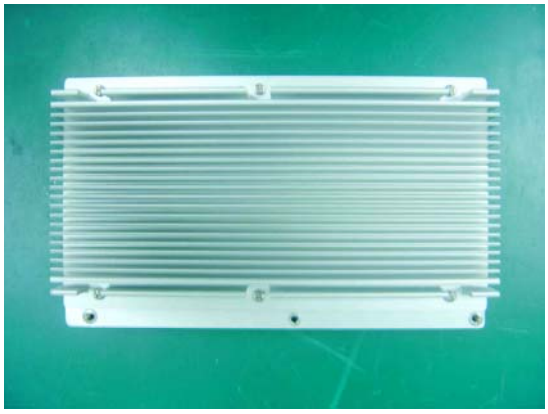
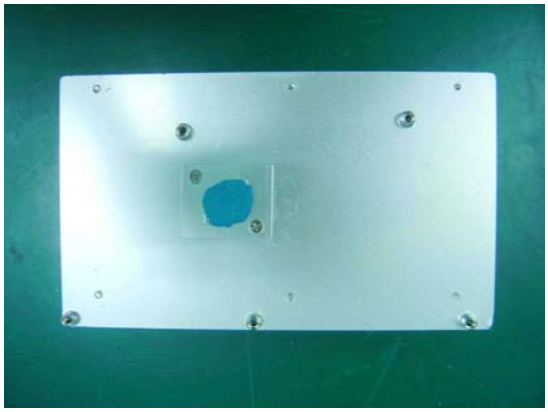
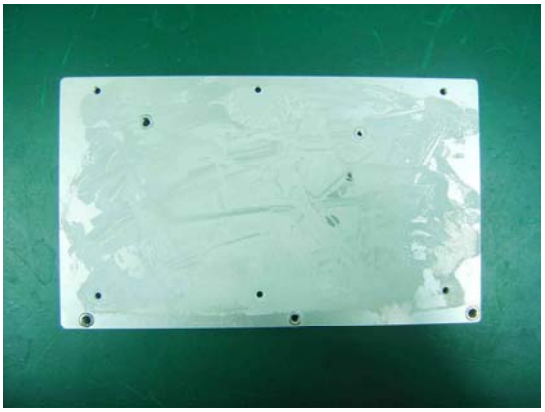
Sample Configuration & Quantity Under Test

- **Model name : GENE-APL6 A0.2**
- **CPU : Intel Apollo Lake N4200 / 1.1GHz**
- **Memory : Transcend 8GB*1 / DDR3L 1866 / Micron 6EN77 D9RVX**
- **HDD : TOSHIBA MK1676GSX / 160 GB**
- **BIOS : GENE-APL6 R0.3 (GAP6AM03) (09/05/2017)**
- **Test Software : Windows 10 / Run PassMark Burn In Test 8.1 Pro**
- **Power : HG2-6400P**
- **CPU Heat Sink :**

Heat Sink




Heat-Spreader + Thermal Pad

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Thermal Image Analysis

1. Test Date: 2017-11-21

2. Test Product: GENE-APL6

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 10 Channel Thermal Recorder:

4.1.1 OMRON

4.1.2 Model: ZR-RX25

Date of Calibration: 2016/11/30

Serial Number: TH-149

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

6. Take Picture Time:

After power on 2 hours

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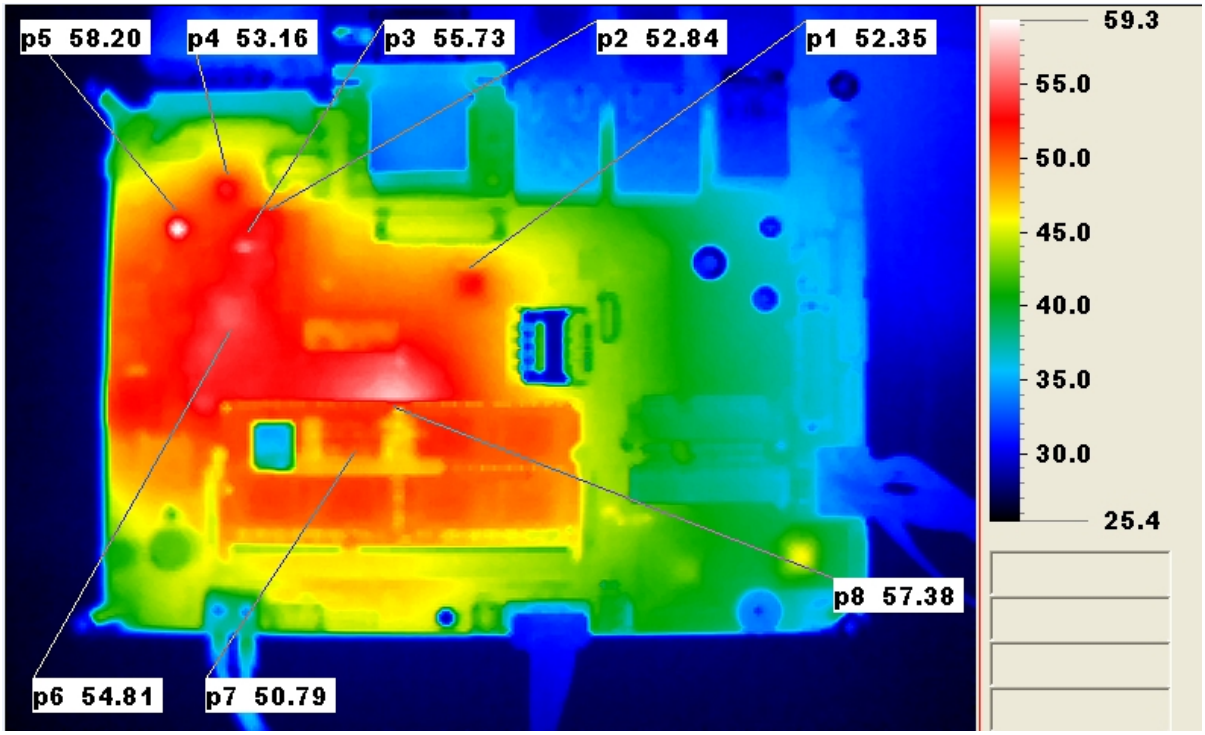
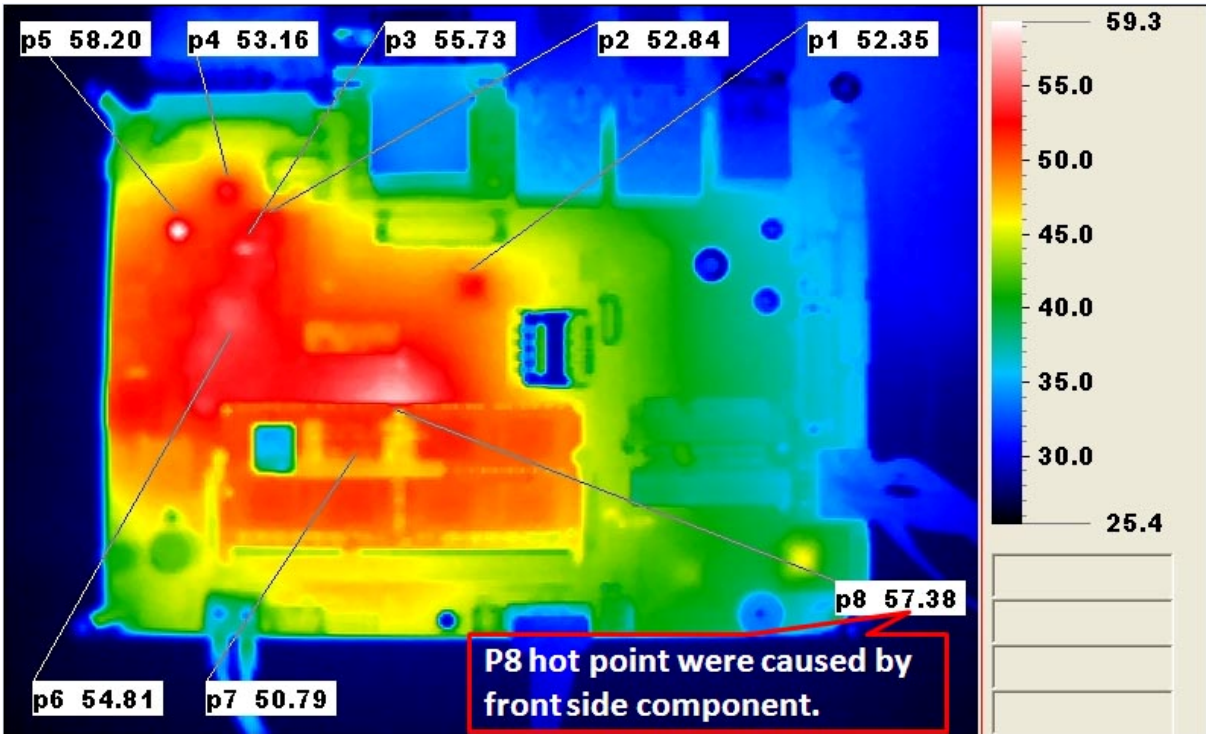
Temperature Profile Test:

Component Side:





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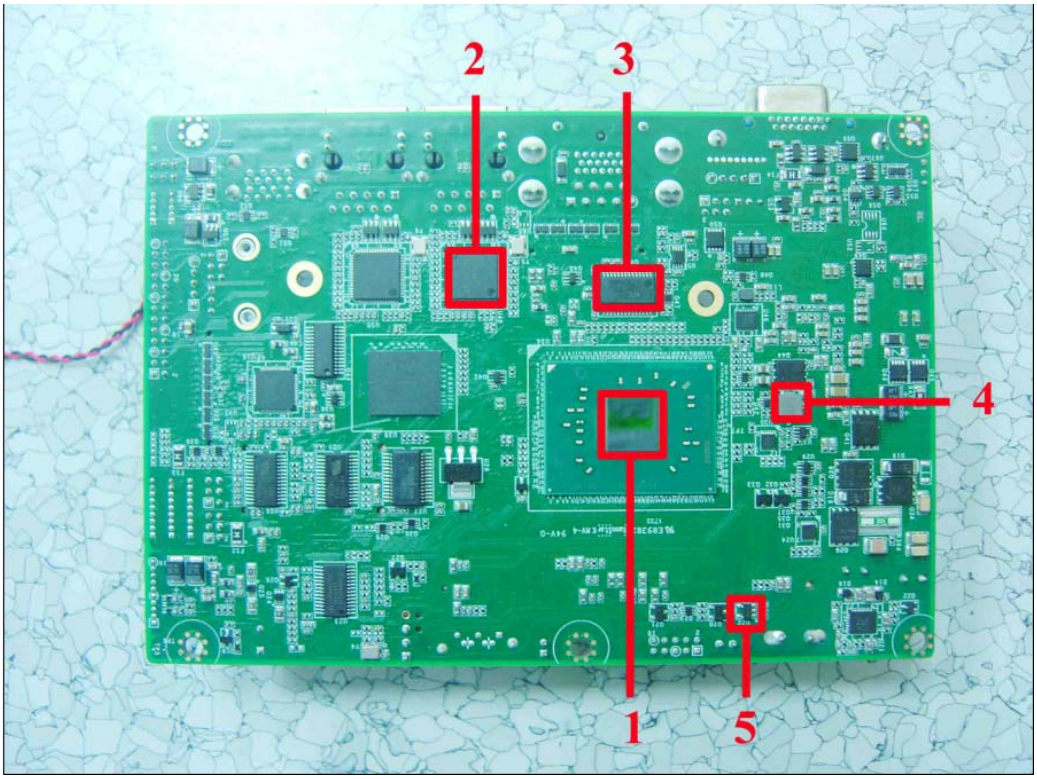
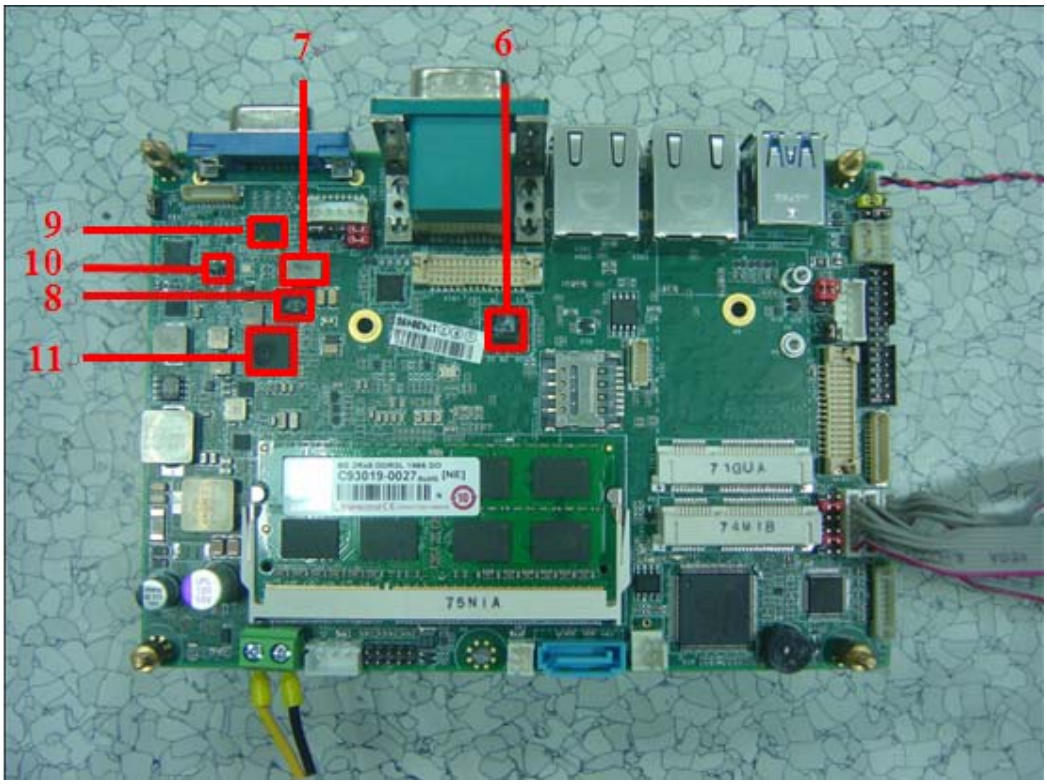
Terminal Recorder:

Measuring Thermal Couple Position：





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Using OMRON / ZR-RX25 test

Point	Position	Describe	Tc (*1) (℃)	TAT(*2) 26.0℃	TPT(*3) 60℃	Note
1	U34	(TF)INTEL CPU.Apollo Lake.Pentium N4200.2.5GHz	105	53.8	88.8	
2	U49	(TF)IC.PCI-E GigaBit Ethernet Chipset. Intel.I211AT	85	54.1	89.1	Note 4
3	U47	(TF)IC.RS232 Driver/Receiver. TI.TRS213IDBR	85	53.6	88.6	Note 4
4	L12	(TF)Coil.0.47uH.DCR=14mΩ.Idc=7.5A. HDT.MPCA-0420-R47-	125	59.6	94.6	
5	U22	(TF)IC.Regulator.EXAR.SPX5205M5-L-5.0	125	57.8	92.8	
6	U9	(TF)IC.Display Port to LVDS Converter NXP.PTN3460IBS/F2MP	96.8	56.0	91.0	Note 4
7	L8	(TF)COIL.CYNTEC.PCMB063T-R22MS	125	56.8	91.8	
8	Q15	(TF)PWR.DUAL N-MOSFET.FAIRCHILD.FDMS3664S	100	56.7	**91.7**	Note 4
9	U19	(TF)IC.DisplayPort to VGA Converter. Chrontel.CH7517A-BF	125	57.5	92.5	
10	U13	(TF)IC.LDO. ANPEC.APL5325BI-TRG	100	65.8	100.8	
11	U7	(TF)IC.PMIC.Intel Apollo Lake TI.TPS650942A0RSKR	100	59.7	94.7	Note 4
12		Memory chipset	95	57.2	92.2	Note 4

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 sp89.1ecification.
6. Defect NO. : 000000LABD01

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