GENE-QM77

A0.2

Thermal Image Analysis Report

Summary	☑ **Pass** ☐ **Fail** ☐ **Pass with Deviation** **Comment:**_____

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

Issue date	Approval	Test Engineer
2012 / 03 / 23	Wayne Chen	Clement Chien

Sample Configuration & Quantity Under Test

- **Model name :** GENE-QM77
- **CPU :** Intel core i7-3610QE / 2.3GHz
- **Chipset :** Intel QM77 PCH
- **Memory :** DSL 4G DDR3 1333 CL9 wide temp.
- **HDD :** Seagate ST9120823AS 2.5“ SATA HDD
- **BIOS :** GM77AM09
- **Test Software :** Windows 7 / Run PassMark Burn In Test 7.0
- **Power :** AT Power
- **CPU Fan:**

Thermal Image Analysis

1. Test Date: 2012-03-19

2. Test Product: GENE-QM77

3. Test Site: AAEON Internal Lab.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 YOKOGAWA Inc,

4.2.2 Model: DA100-13-1D

Date of Calibration: 2011/10/12

Serial Number: 12A323190

4.2. IR Scanner: Infrared Camera

4.2.1 NIPPON AVIONICS CO., LTD.

4.2.2 Model: TVS-100

Date of Calibration: 2011/07/11

Serial Number: 0179L2746

5. Test Condition:

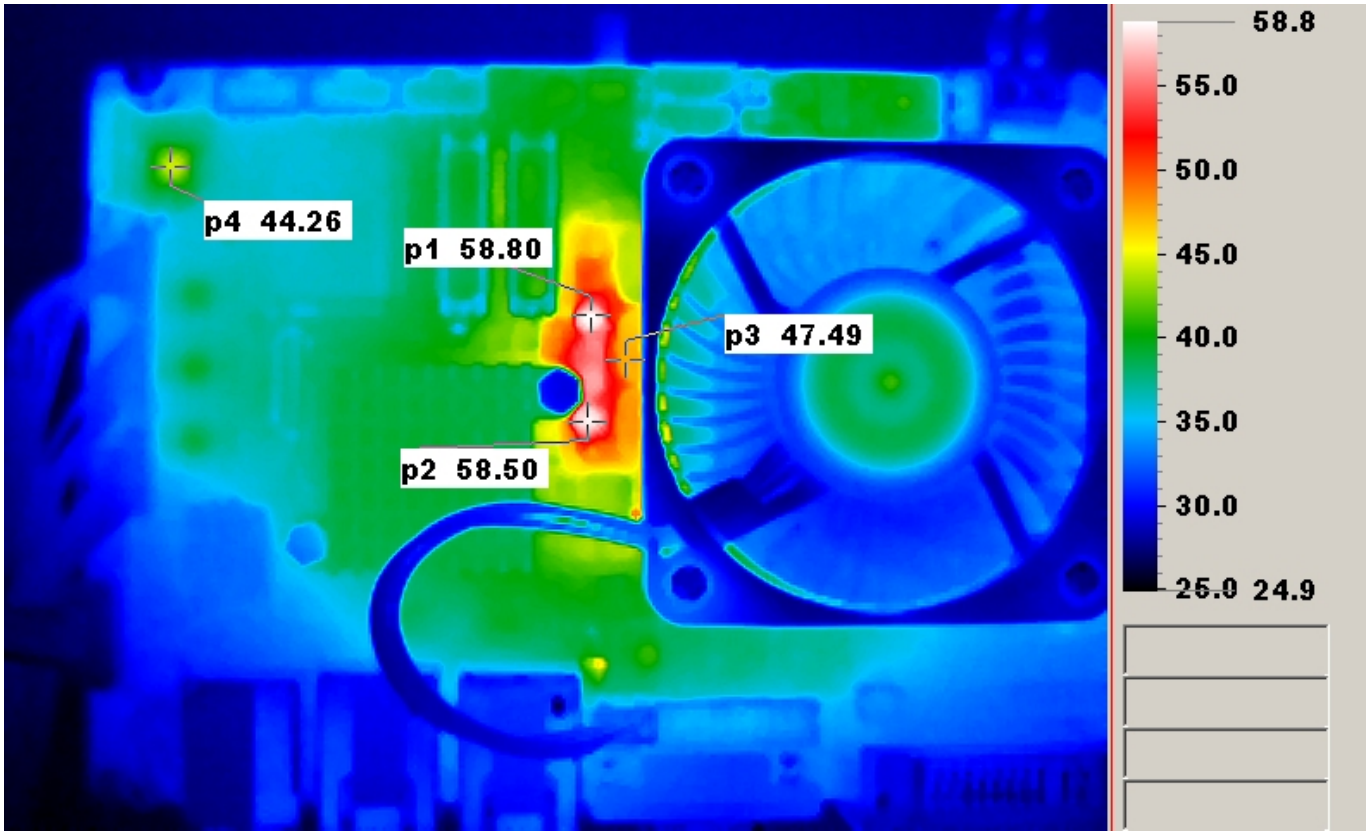
Component Side-1 (Test by DA-100): 25.0℃ With CPU Fan

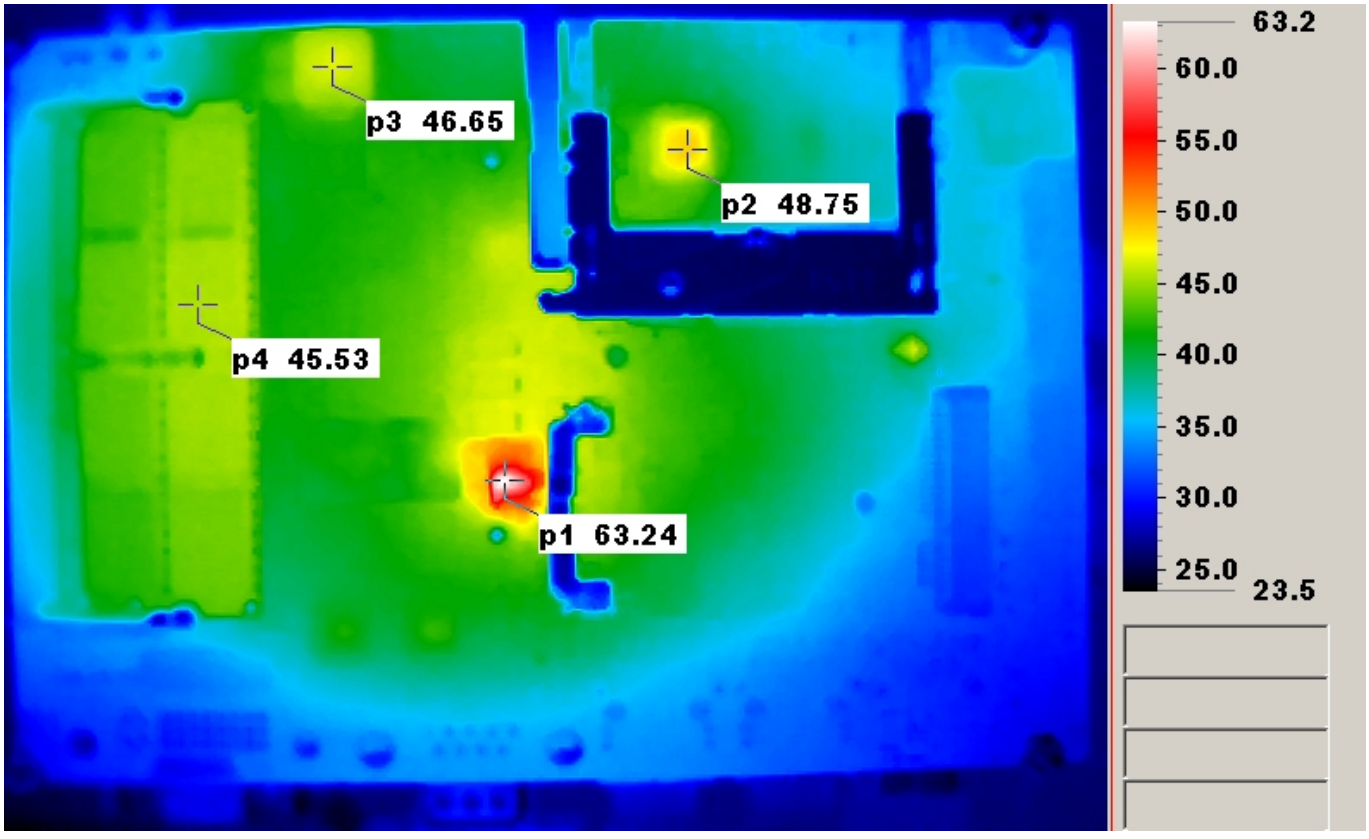
6. Take Picture Time:

After power on 2 hours

Temperature Profile Test:

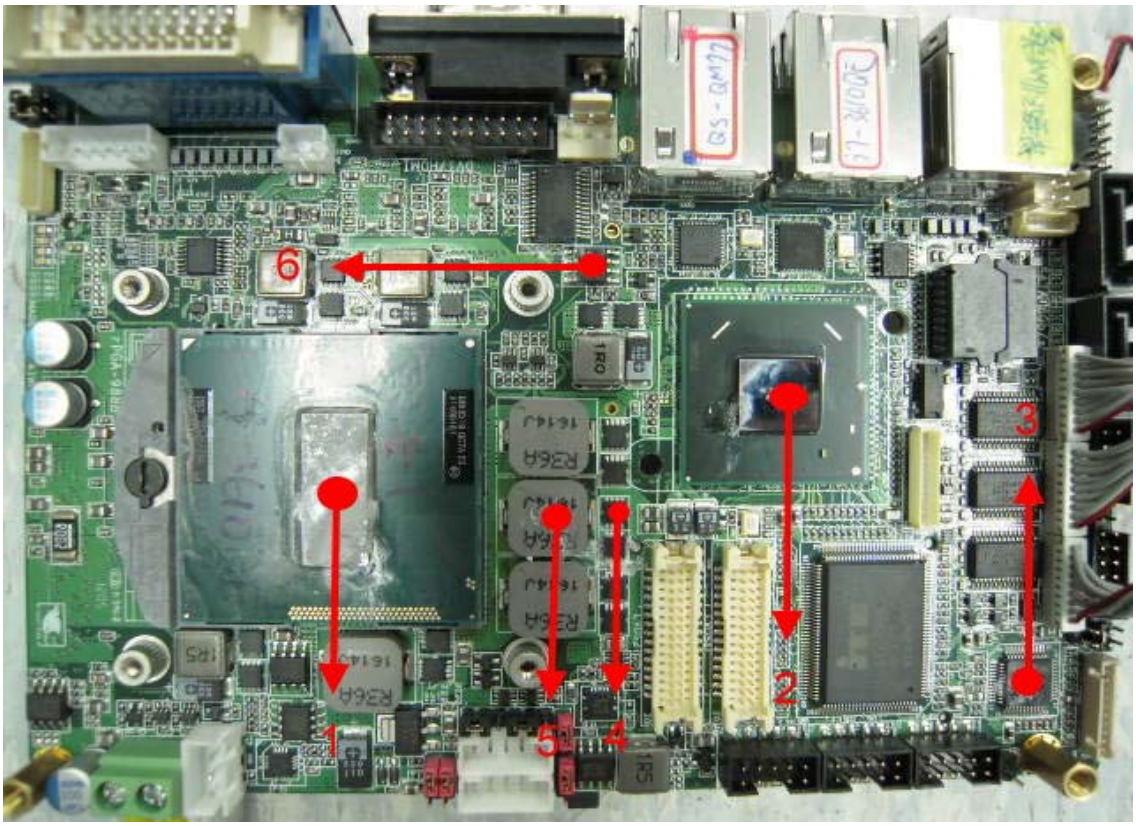
Component Side:

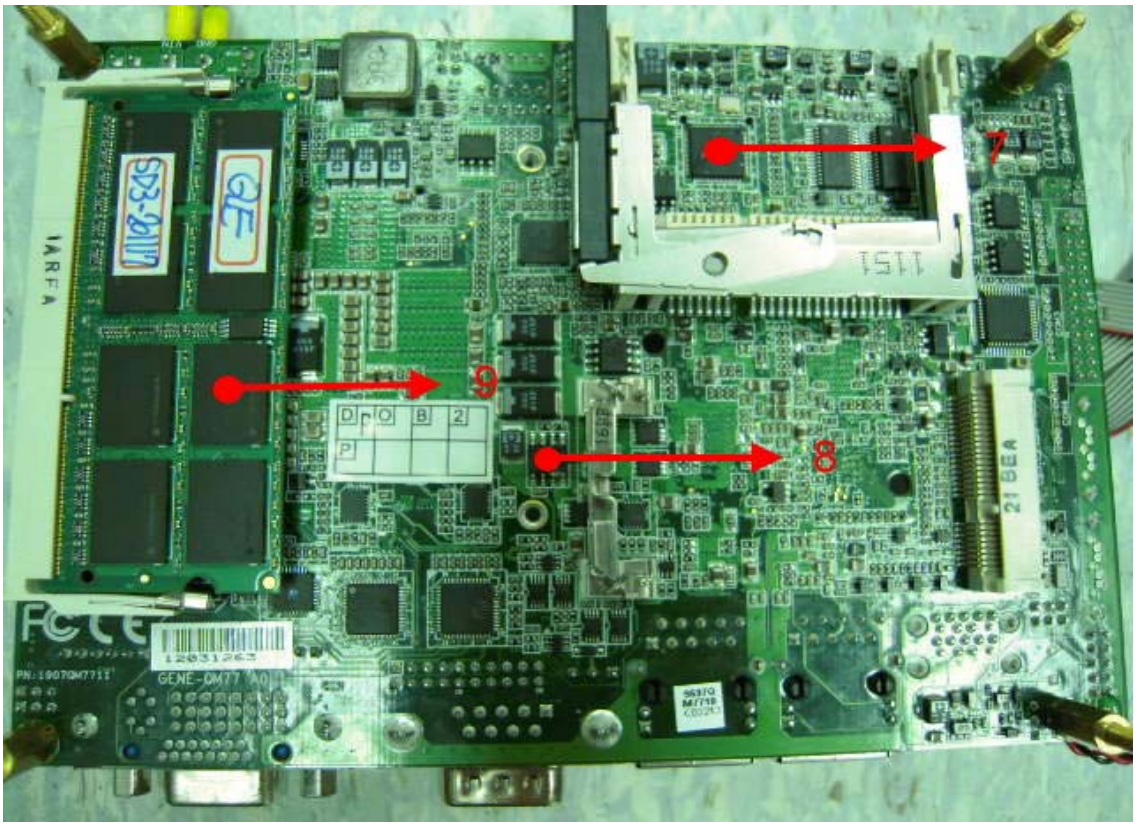




Terminal Recorder:

Measuring Thermal Couple Position：





Using YOKOGAWA / DARWIN DA100-100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	60℃	
1	CPU	Intel core i7-3610QE	105	42.8	77.8	
2	U31	(TF)Chipset PCH.INTEL.BD82QM77	108	41.3	76.3	
3	U11	(TF)High Definition.Audio Codec.REALTEK.ALC892-GR	100.5	41.7	76.7	
4	U23	(TF)PWR.SMD.WDFN8 N-MOSFET.ON SEMI.NTTFS4824NTAG	125	49.5	84.5	
5	L5	(TF)COIL.0.36uH.Irms=34A.20%.Panasonic.ETQP4LR36AFC	130	44.6	79.6	
6	U42	(TF)PWR.SMD.SO-8P.P-Channel MOSFET.APEC.AP6679GM-HF	125	39.6	74.6	
7	U59	(TF)DisplayPort to LVDS Converter.Chrontel.CH7511B-BF	100	47.0	82.0	
8	U80	(TF)Low dropout Linear Regulator.ANPEC.APL5912-KAC-TRL	105	58.9	93.9	
9	Memory	DSL 4G DDR3 1333 CL9 wide temp.	95	49.6	84.6	

Note(*):

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

2. "Tm" indicates the measured Tc value under working environmental temperature within product specification.

3. 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.