GENE-BT04

Thermal Image Analysis Report

Report NO: 15E090037

Test Cause
For ATRF No.QE150916 Request

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment:** There are 3 temperature points marginal passed, the functions are normal,__

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

Issue date	Approval	Test Engineer
2015 / 10 / 07	KJ Wang	JunoCheng

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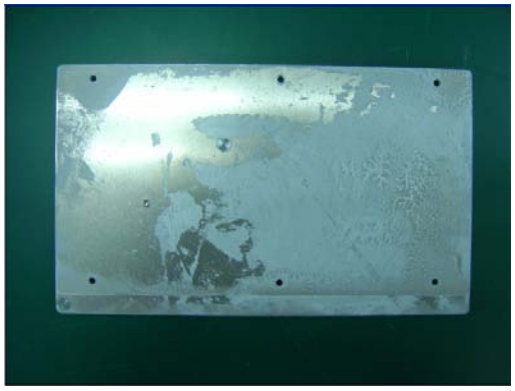
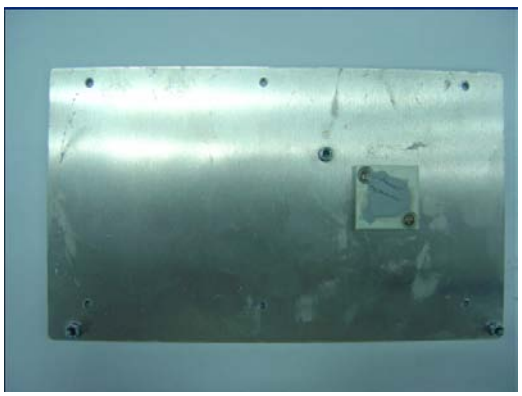
Sample Configuration & Quantity Under Test

- **Model name : GENE-BT04 A1.0**
- **CPU : Intel J1900 1.99GHz**
- **Memory : Innodisk DDR3L-1600 SODIMM/ K4B4G084G0/8GB**
- **CFast : Innodisk 32GB 3ME**
- **BIOS : GENE-BT04 R1.0 (GBT4AM10) (07/01/2015)**
- **Test Software : Windows 7 / Run BurnIn test 8.0 Pro**
- **Power : AT Power**
- **Heat Sink with Fan & Heat spreader:**

Heat Sink (P/N): M16BT06000

Heat spreader(P/N): M10BT04010

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Thermal Image Analysis

1. Test Date: 2015-10-07

2. Test Product: GENE-BT04

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: 2015/09/10

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: 2014/12/30

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 24.8℃ with HeatSink

6. Take Picture Time:

After power on 2 hours

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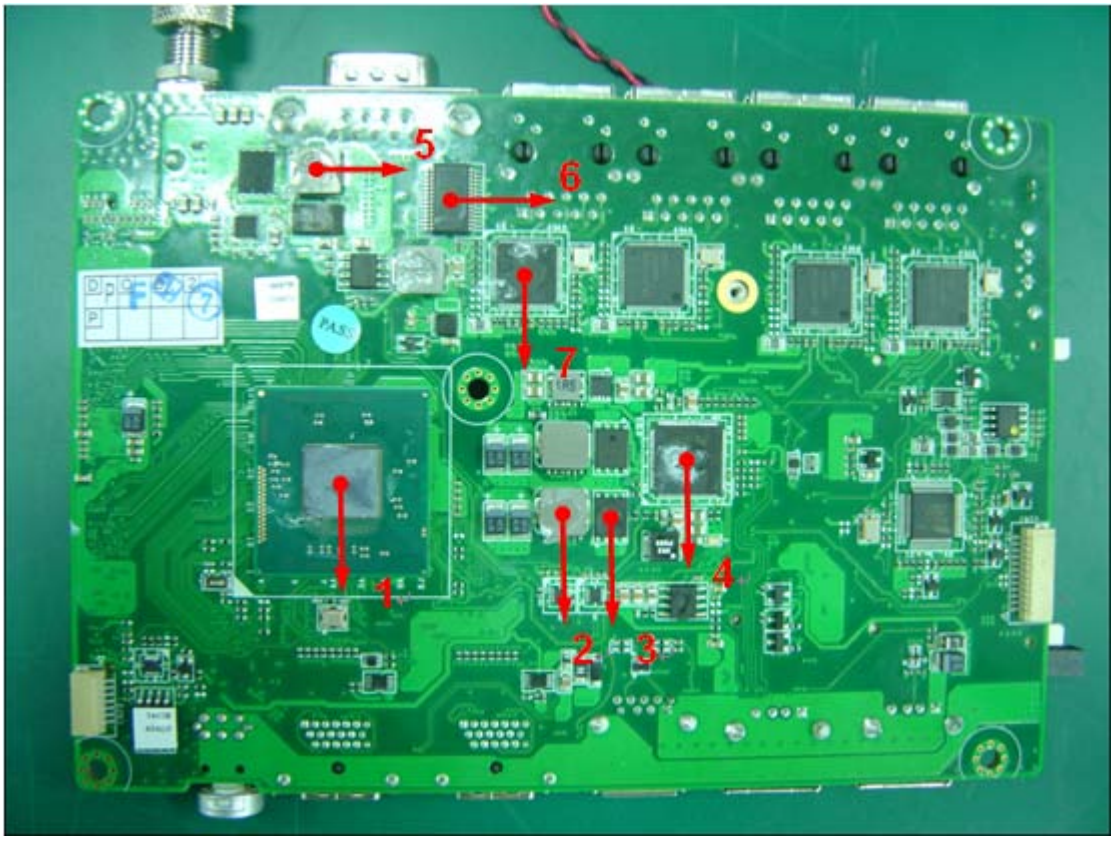
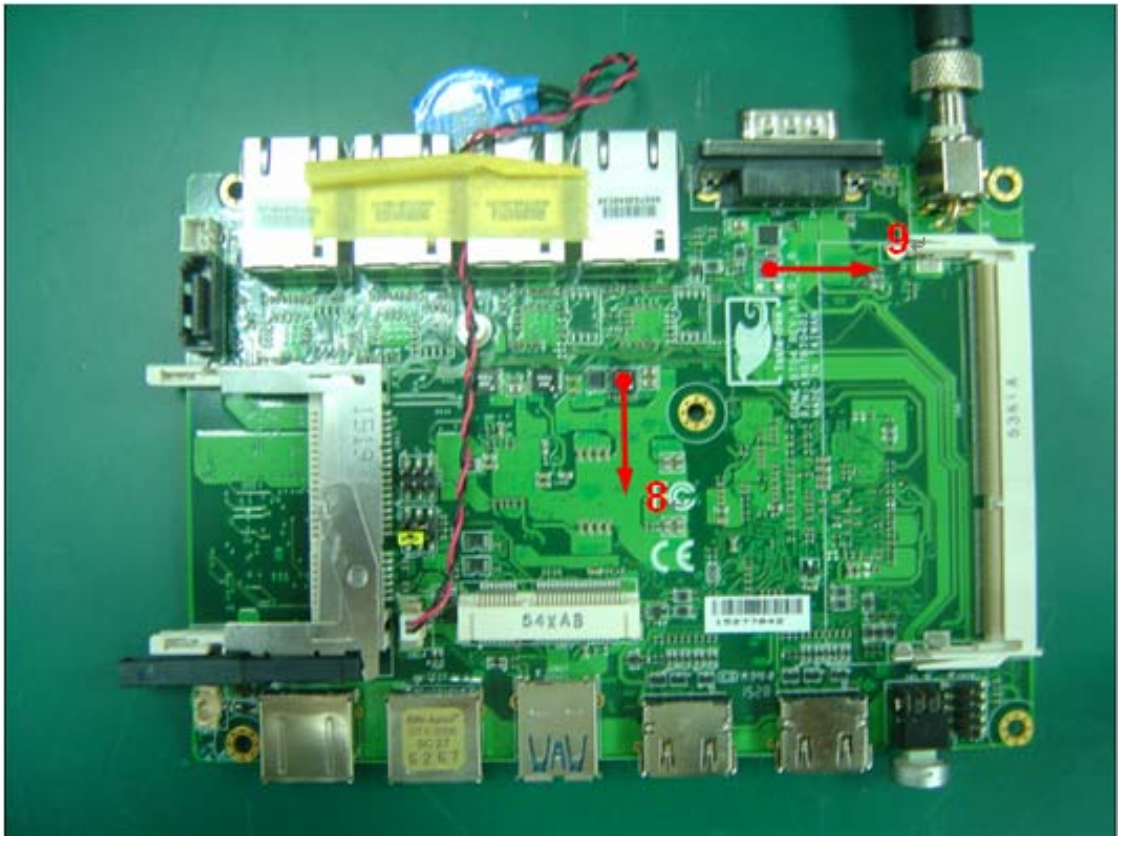
Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under 60℃	Note
1	U29	Intel® Celeron® Processor J1900	105	84.7	
2	L8	(TF)COIL.0.33uH.ZenithTek.ZPWM-6030M-R33M	150	79.1	
3	Q33	(TF)PWR.DUALSMD.N-MOSFET.PQFN8.FAIRCHILD.FDMS3664S	125	81.9	
4	U27	(TF)IC.PMIC.for Intel Valleyview.ROHM.BD9596MWV	125	82.2	
5	L1	TF)COIL.1uH.DCR=6.7mohm.Idc=14Amp.20%.SMD.7.3*6.8*3mm.HDTPower.MPC-7066CZ-1R0-M	150	91.2	
6	U17	(TF)IC.RS232 Driver/Receiver.15KV ESD.SSOP 28P.SMD.TI.TRS213IDBR	125	78.6	
7	U23	(TF)IC.PCI-E GigaBit Ethernet Chipset.QFN 64P.SMD.Intel.WGI211AT	85	80.7	NOTE3
8	L3	(TF)COIL.1uH.DCR=24mohm.Idc=4.5Amp.20%.SMD.4.45*4.05*2.0mm.Zenithtek.ZPWM-4020M-1R0M	150	78.6	
9	Q5	(TF)PWR.SMD.MLP MOSFET.FAIRCHILD.FDMC4435BZ	125	80.6	
10		DIMM	85	83.4	NOTE3
11		CFast	85	76.0	NOTE3

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.

4. RTC battery avoid to put on heat position. Please do not exceed battery temperature specification.

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