COM-BT

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: Temperature at 1 component were estimated to be in marginal temperature point in comparion with component datasheets.**

Test Result Summary

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

Issue date	Approval	Test Engineer
2014 / 08 / 14	Tom Lin	Jerry Chen

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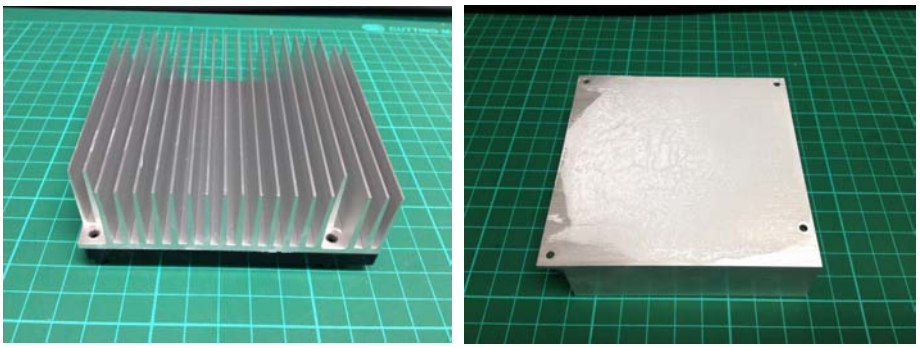
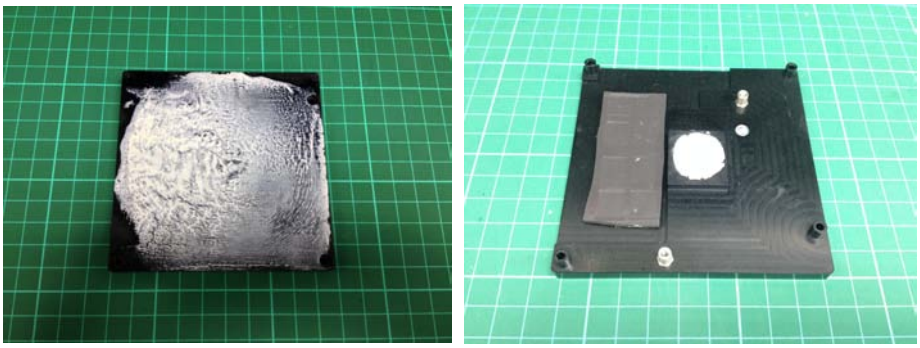
Sample Configuration & Quantity Under Test

- **Model name: COM-BT Rev. A0.3**
- **CPU: Intel Celeron J1900 1.99GHz**
- **BIOS: COM-BT R0.C (CMBTAMOC) (07/30/2014)**
- **Chipset: Intel Bay Trail SoC**
- **Memory: InnoDisk DDR3 1333 LV SO-DIMM 8GB / (Hynix / H5TC4G83AFR)*1**
- **2.5“ SATA HDD: Toshiba / MK1676GSX 160GB**
- **Carrier Board: ECB-920A Rev. A0.3**
- **Test Software: Windows 8 / Run PassMark Burn In Test 7.1 Pro**
- **ATX Power Supply: CWT DSA400P-C**
- **Heat Sink / Heat-Spreader:**

Heat sink (P/N: M16CV00010)



Heat-Spreader (P/N: M16BT00000)



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Thermal Image Analysis

1. Test Date: 2014-08-13
2. Test Product: COM-BT Rev. A0.3
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: 2013/10/01
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: 2014/01/06
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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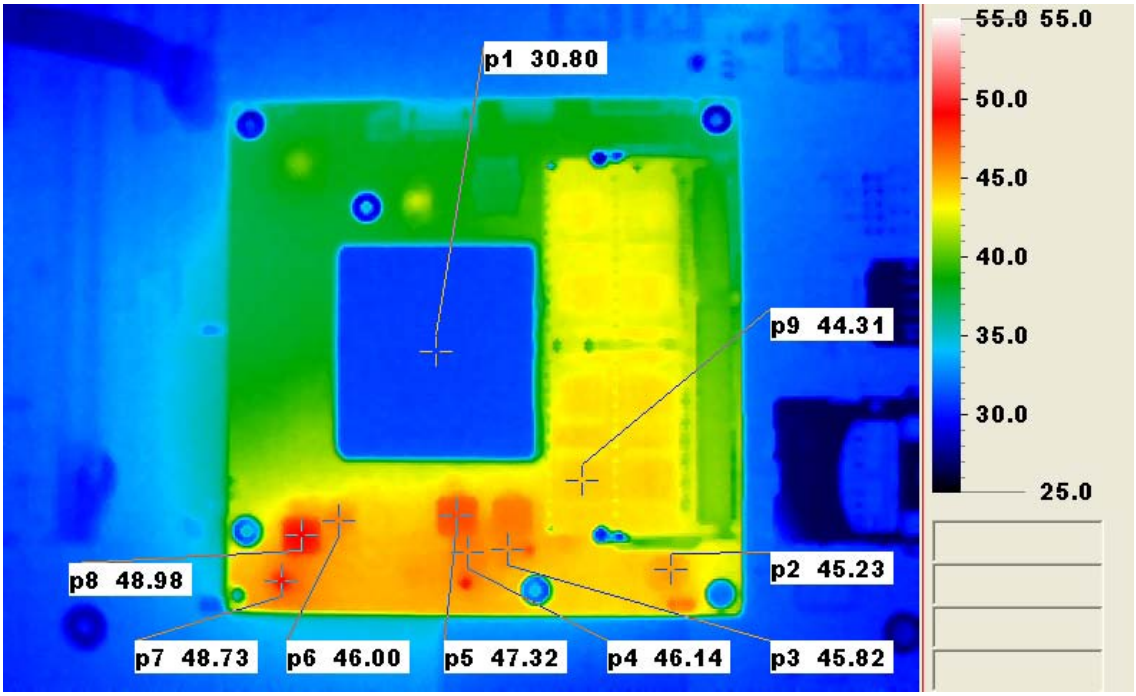
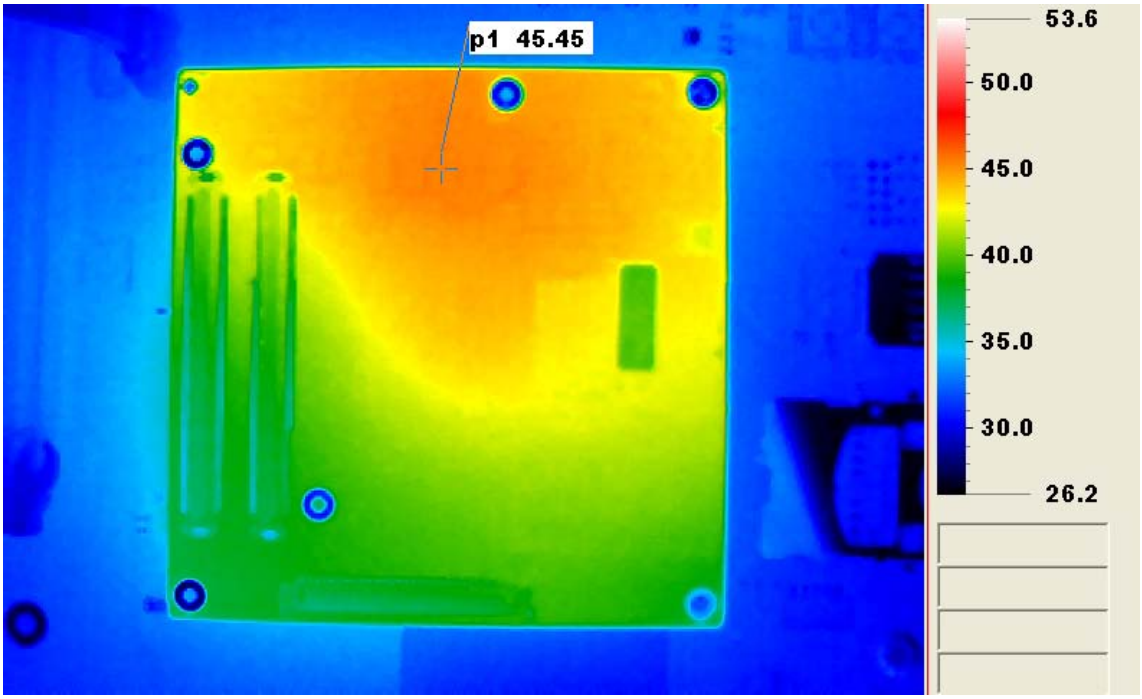
Temperature Profile Test:

Component Side:



Back Side:



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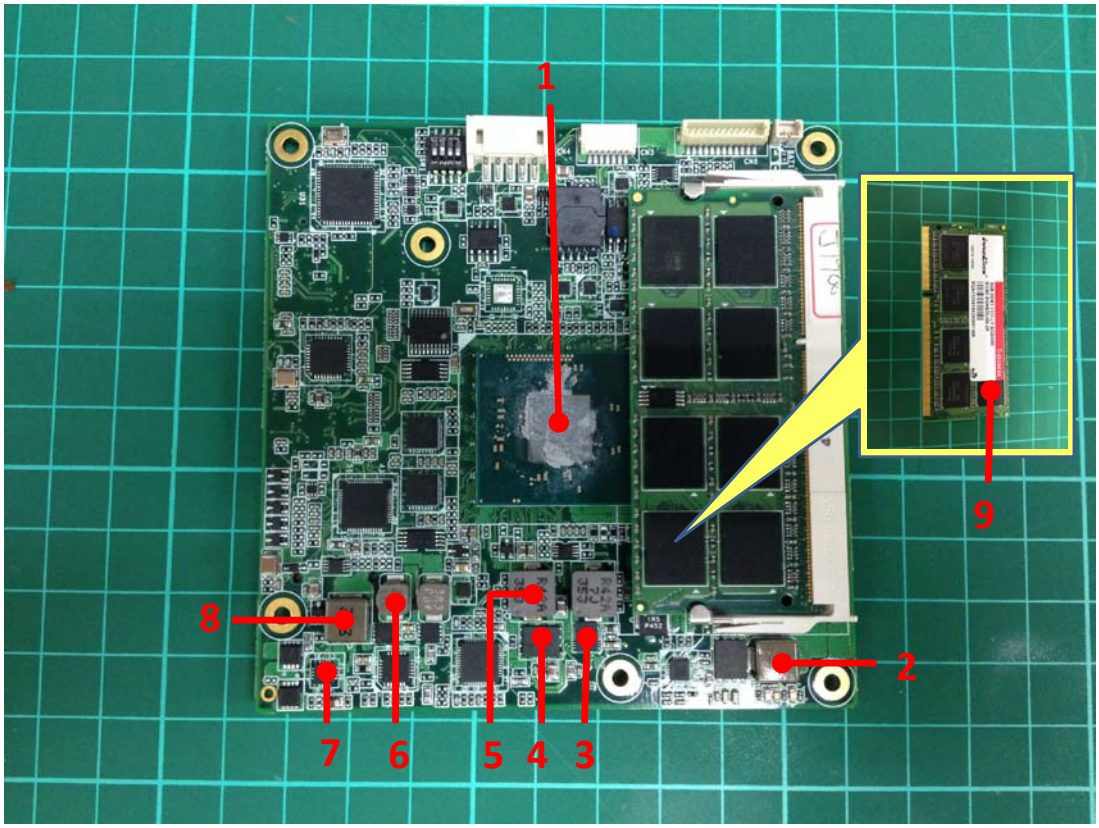
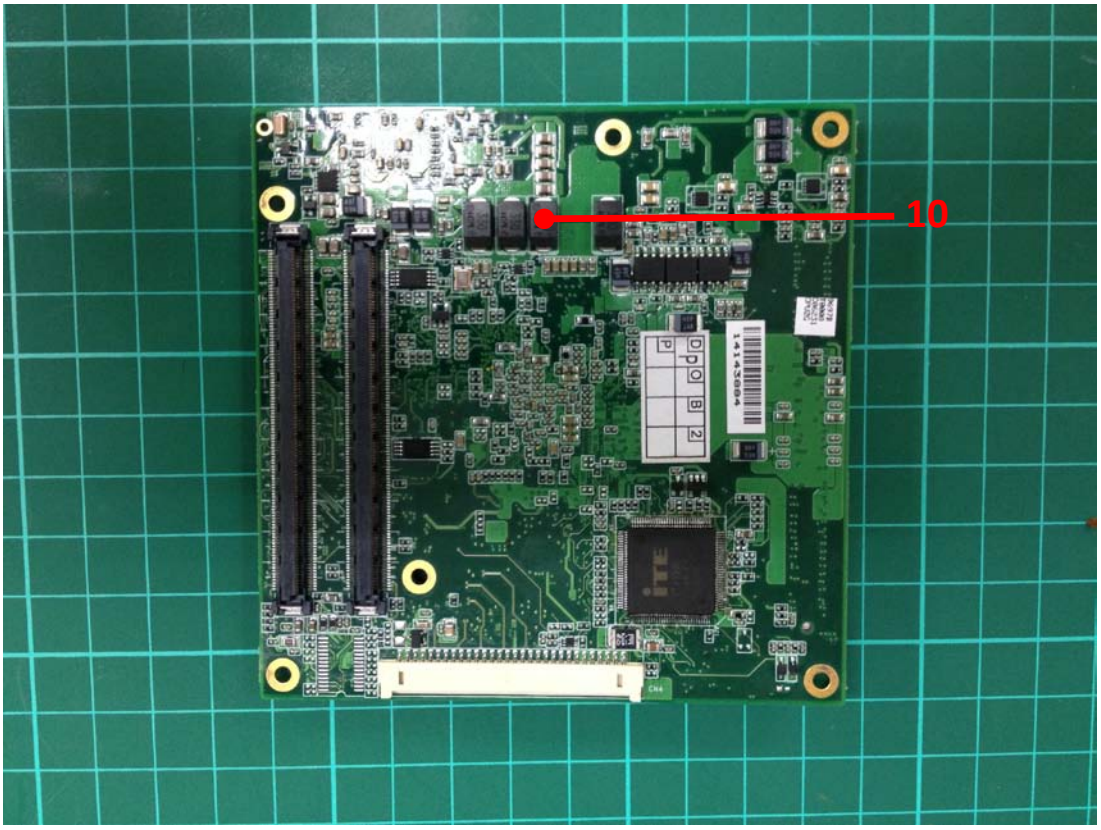
Terminal Recorder :

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		Note
				25.0℃	60℃	
1	U3	CPU - Intel Celeron CPU J1900 1.99GHz	105	48	83	
2	L1	(TF)COIL.1.5uH.GOTREND.GSTD6030PE-1R5M	140	49	84	
3	U59	(TF)IC.Synchronous Buck NexFETTM.SON 8P.TI.CSD97374Q4M	140	53.7	88.7	
4	Q36	(TF)PWR.DFN8 N-MOSFET.ON SEMI.NTMFD4901NFT1G	125	54.4	89.4	
5	L6	(TF)COIL.0.42uH.Panasonic.ETQP4LR42AFM	145	55.1	90.1	
6	L4	(TF)COIL.2.2uH.DCR=36.4mohm.NEC/TOKIN.MPLCG0530L2R2	135	53.8	88.8	
7	U56	(TF)IC.Synchronous Step-Down.QFN 16P.TI.TPS53219ARGTR	100	54.4	89.4	
8	L3	(TF)COIL.3.3uH.DCR=28mohm.GOTREND.GSTD6030PE-3R3M	140	56.4	91.4	
9	Memory	Innodisk DDR3L 1333 SO-DIMM 8G (Hynix / H5TC4G83AFR)	85	48.7	**83.7**	**Note4**
10	TC12	Battery - (TF)SP CAP.330uF.9mohmPanasonic.EEFSX0E331EY	120	50.7	85.7	
11	Air	Air Temperature	N/A	25	60	

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. Defect NO. : C130905QED10

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