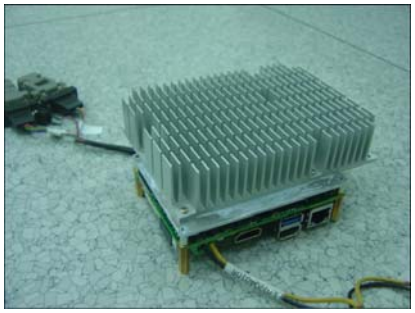
PICO-BSW1

Intel N3160 / GHz CPU

Thermal Image Analysis Report

Test Cause
For ATRF No. QE160919 Request



Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: 1.Temperature at 5 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	5
Defect Unsolved	0	0	0	5

Issue date	QA Manager	Test Engineer
2016 / 09 / 22	KJ Wang	Juno Cheng

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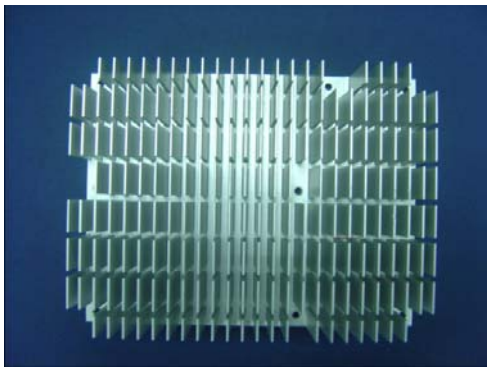
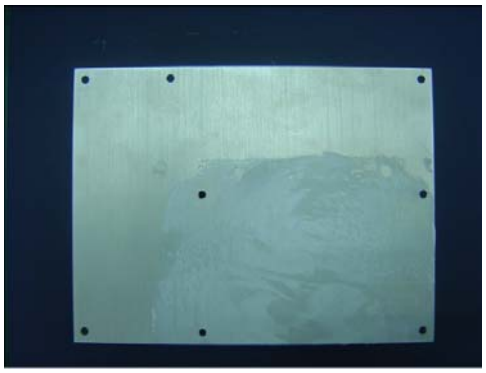
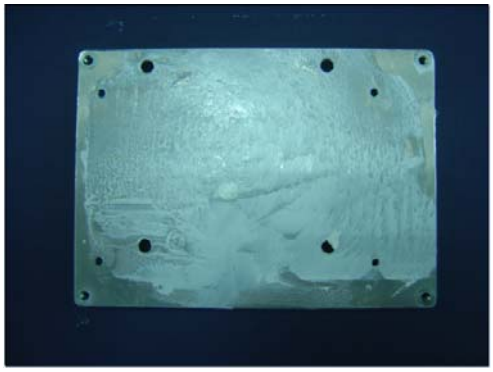
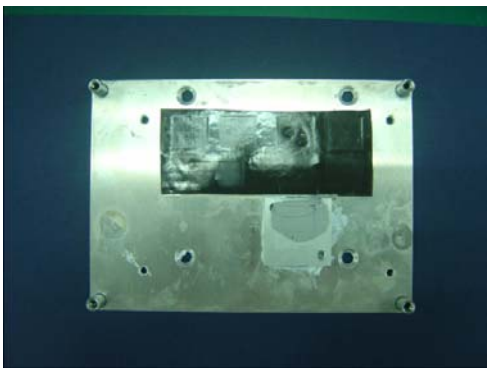
Sample Configuration & Quantity Under Test

- **Model name: PICO-BSW1 Rev. A0.2**
- **CPU: Intel N3160 / 1.6GHz**
- **BIOS: PICO-BSW1 T0.7 (ZBW1AM07)(08/17/2016)**
- **Chipset: Intel Braswell SOC**
- **Memory: Kingston DDR4 8GB / SKhynix H5AN4G8NAFR TFC**
- **2.5“ HDD: TOSHIBA MK1060GSC / 100GB**
- **Test Software: Windows 10/ Run PassMark Burn In Test 8.1 Pro**
- **AT Power Supply: HG2-6400P / 400W**
- **Heat Sink:**

Heat Sink (P/N: M16BSW1000)

Heat-Spreader (P/N: M10BT01010) + Thermal Pad

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Thermal Image Analysis

1. Test Date: 2016-09-22

2. Test Product: PICO-BSW1

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: 2016/09/10

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: 2015/12/01

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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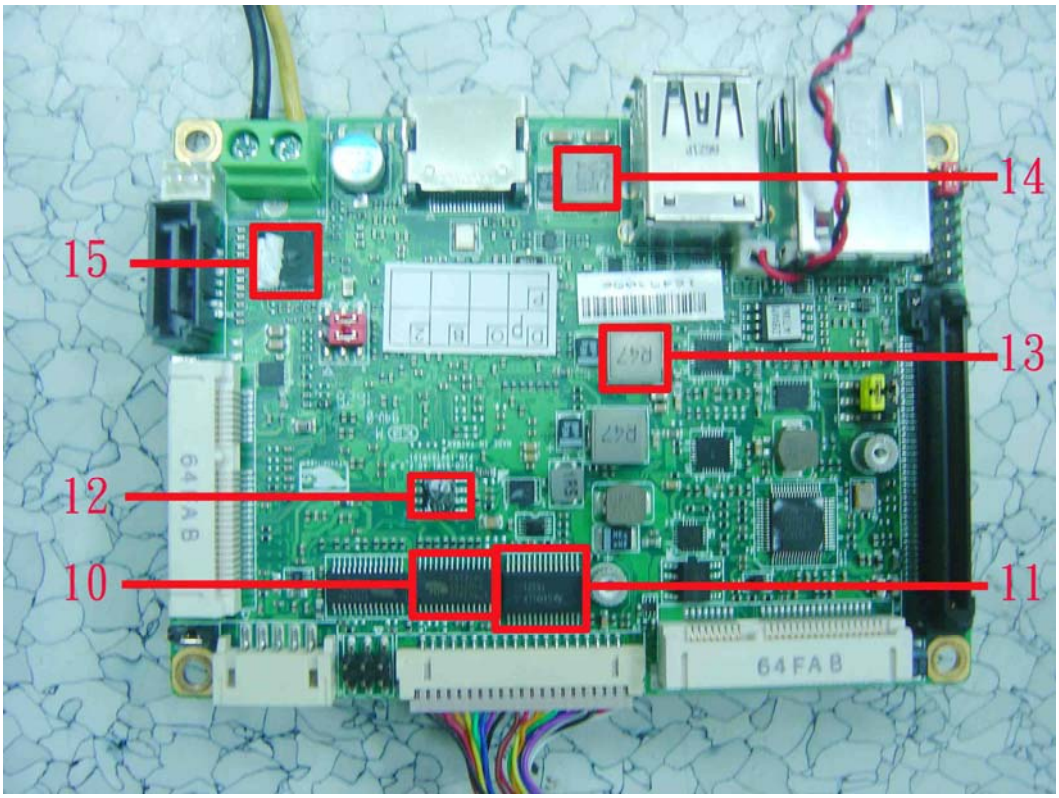
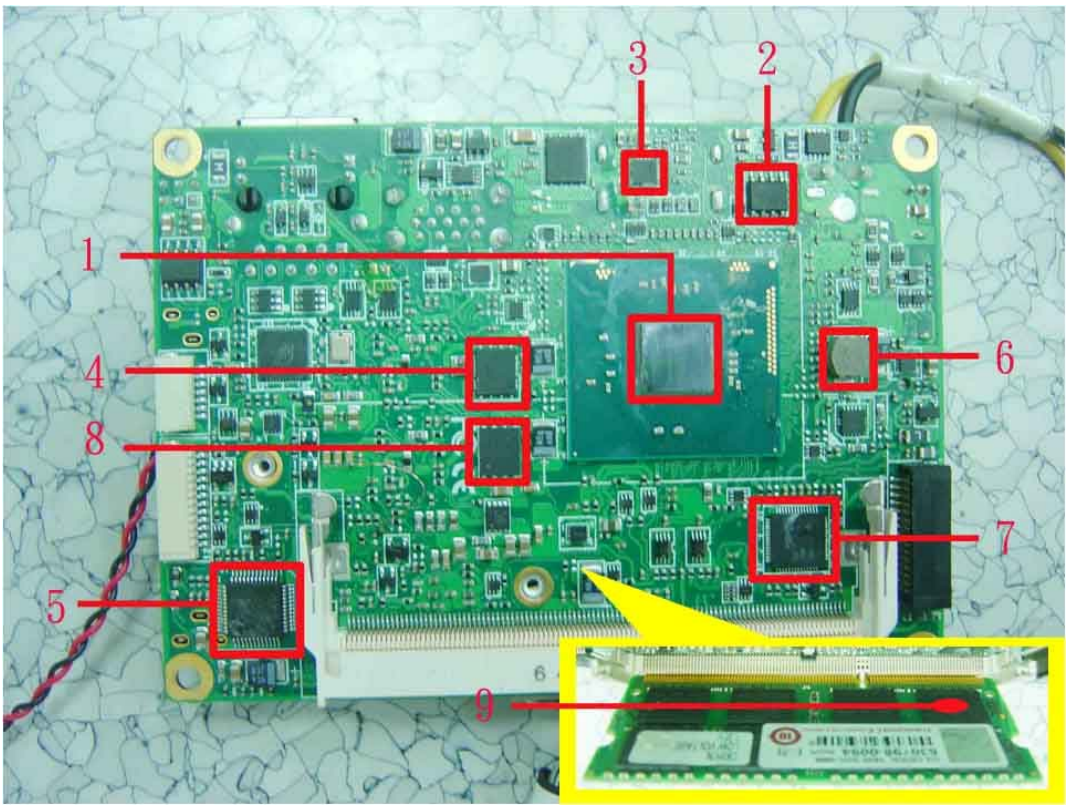
Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25.0℃	60℃	
1	U1	Intel Celeron N3160 / 1.6GHz CPU	90	56.3	**91.3**	**Note4**
2	U40	RICHTEK.RT9025-25PSP	125	62.4	97.4	
3	U47	TI.TPS53219ARGTR	125	58.3	93.3	
4	Q24	FAIRCHILD.FDMS7620S	125	60.1	95.1	
5	U38	REALTEK.ALC892-CG	100.5	53.0	**88.0**	**Note4**
6	L5	NEC/TOKIN.MPLCG0530L1R5	120	56.9	91.9	
7	U7	NXP.PTN3460BS	98.623	60.3	**95.3**	**Note4**
8	Q23	ON.NTMFD4C50NT1G	125	57.8	92.8	
9		Memory Chipset	95	53.6	**88.6**	**Note4**
10	U36	Fintek.F81438G	125	56.6	91.6	
11	U35	TI.TRS213IDBR	125	55.8	90.8	
12	U42	RICHTEK.RT9025-25PSP	125	60.1	95.1	
13	L3	GOTREND.GSTD6030PE-R47M	125	60.4	95.4	
14	L6	CYNTEC.PCMB063T-1R5MS	125	62.8	97.8	
15	U18	NXP.PTN3360DBS	97.26	57.5	**92.5**	**Note4**
16	Air	Air Temperature	N/A	25.0	60.0	

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. :

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