NANOCOM-SKU

Intel Core i7 6600U / 2.6GHz CPU

Thermal Image Analysis Report

Summary	☐ **Pass** ☐ **Fail** Note : There is/are ___ defect(s) not list in the report, please check it in the DTS Website. ☑ **Pass with Deviation** **Comment: 1.<u>Temperature at 1 component were estimated to be in marginal temperature point in comparion with component datasheets.</u>**

Test Result Summary

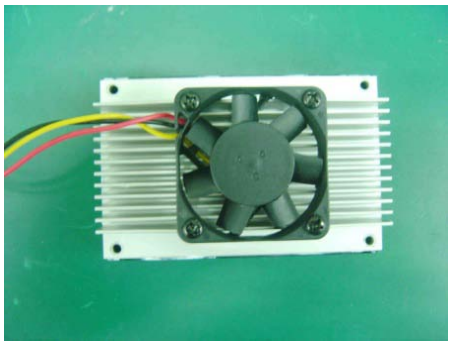
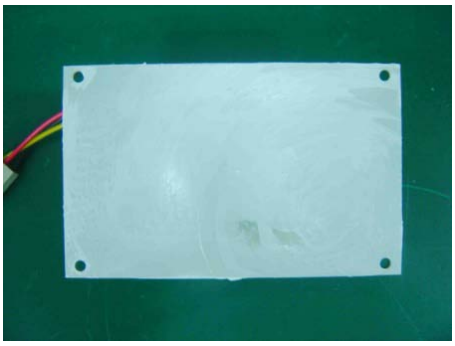
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

Issue date	QA Manager	Test Engineer
2016 / 10 / 04	KJ Wang	Rex Chang

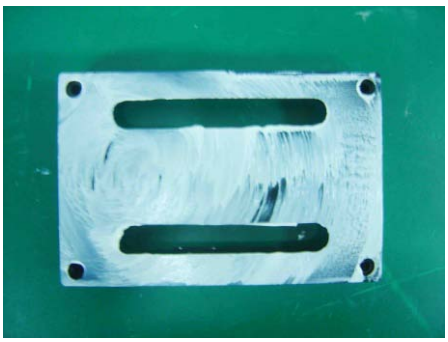
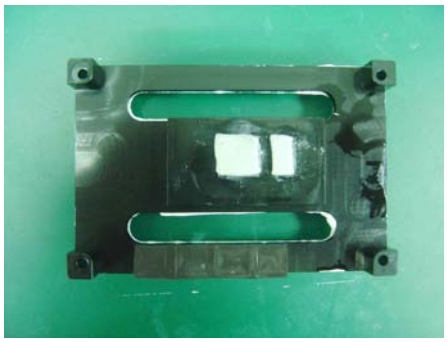
Sample Configuration & Quantity Under Test

- **Model name: NANOCOM-SKU Rev. A1.0**
- **CPU: Intel Core i7 6600U / 2.6GHz**
- **BIOS: NANOCOM-SKU R1.0 (NCSUAM10) (09/09/2016)**
- **Chipset: Intel ULT SOC**
- **Memory: Onboard DDR4 4GB / SEC K4A8G165WB-BCPB**
- **2.5“ HDD: Western Digital WD800BEVT / 80GB**
- **Test Software: Windows 8.1/ Run PassMark Burn In Test 8.1 Pro**
- **Carrier Board: ECB-920 Ver. A1.0**
- **ATX Power Supply: CWT DSA400P-C / 400W**
- **CPU Cooler:**

CPU Cooler.FAN+Heat Sink (P/N: P/N: 17592NABT0)

Heat-Spreader (P/N: M16NASU000) + Thermal Pad

Thermal Image Analysis

1. Test Date: 2016-10-03

2. Test Product: NANOCOM-SKU

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:

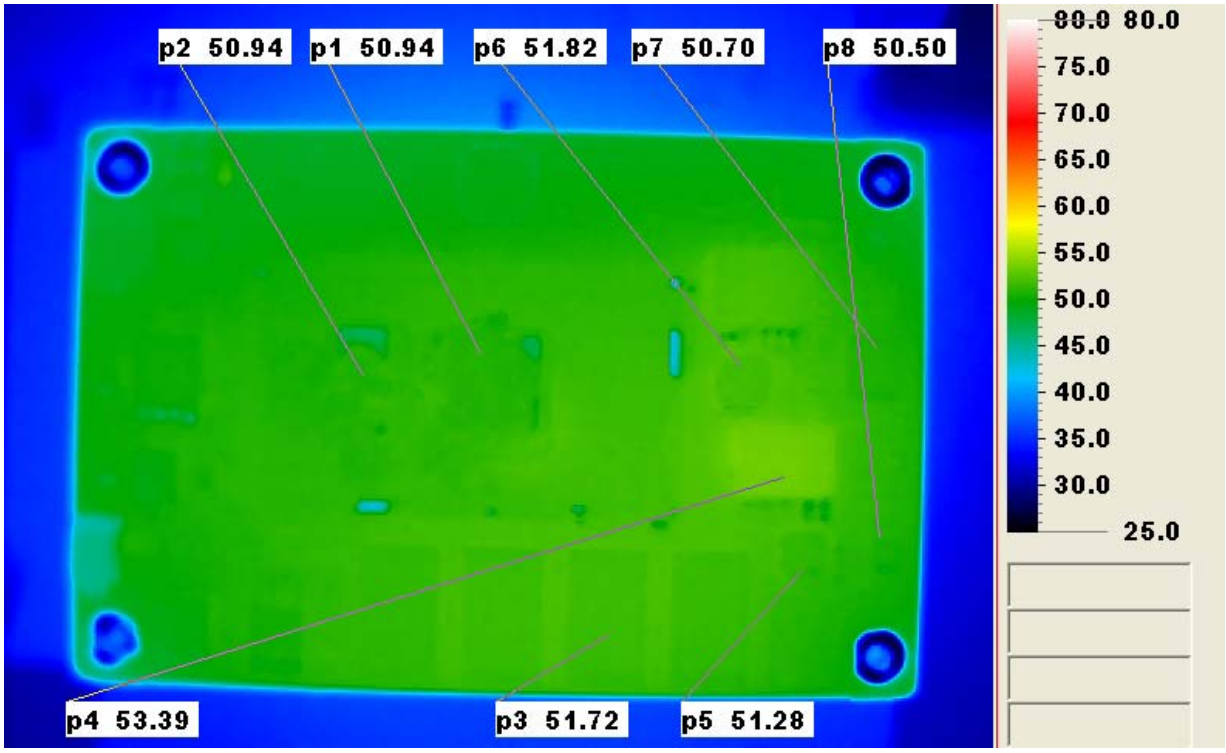
Test by DA-100: 25.0℃ with Heat Sink + Fan (Full speed)

6. Take Picture Time:

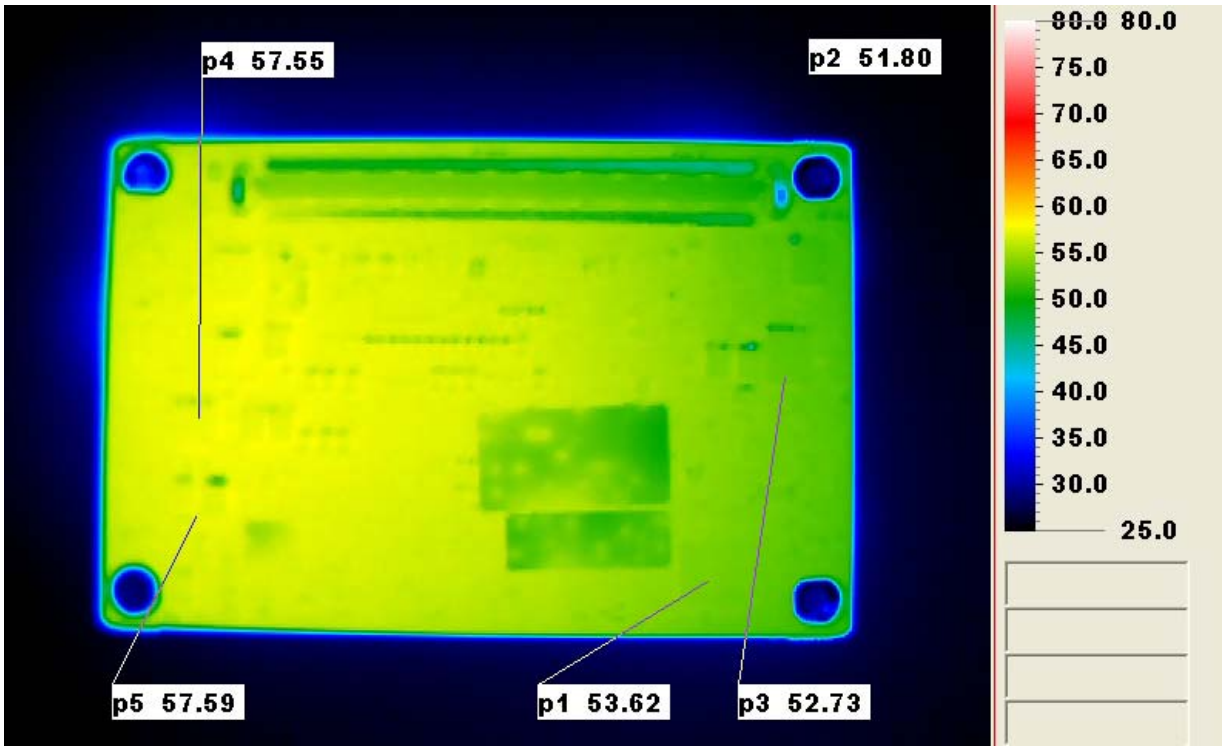
After power on 2 hours

Temperature Profile Test:

Component Side:

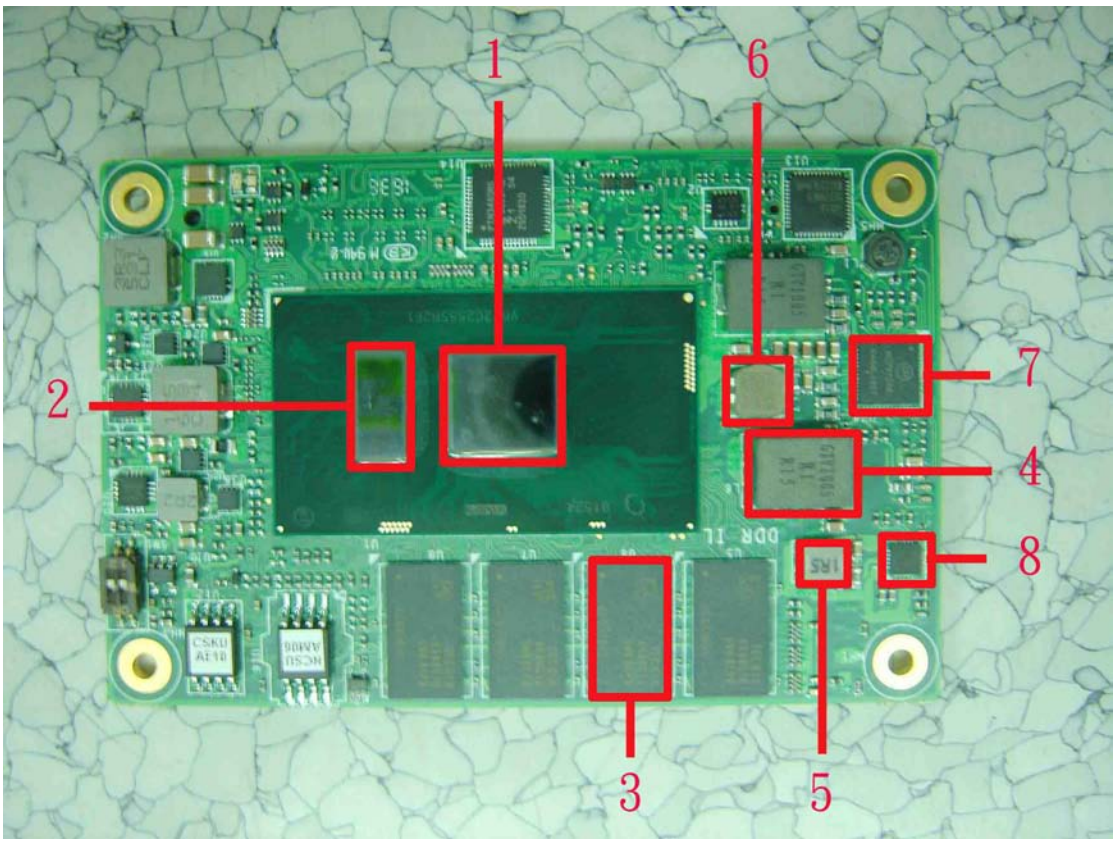


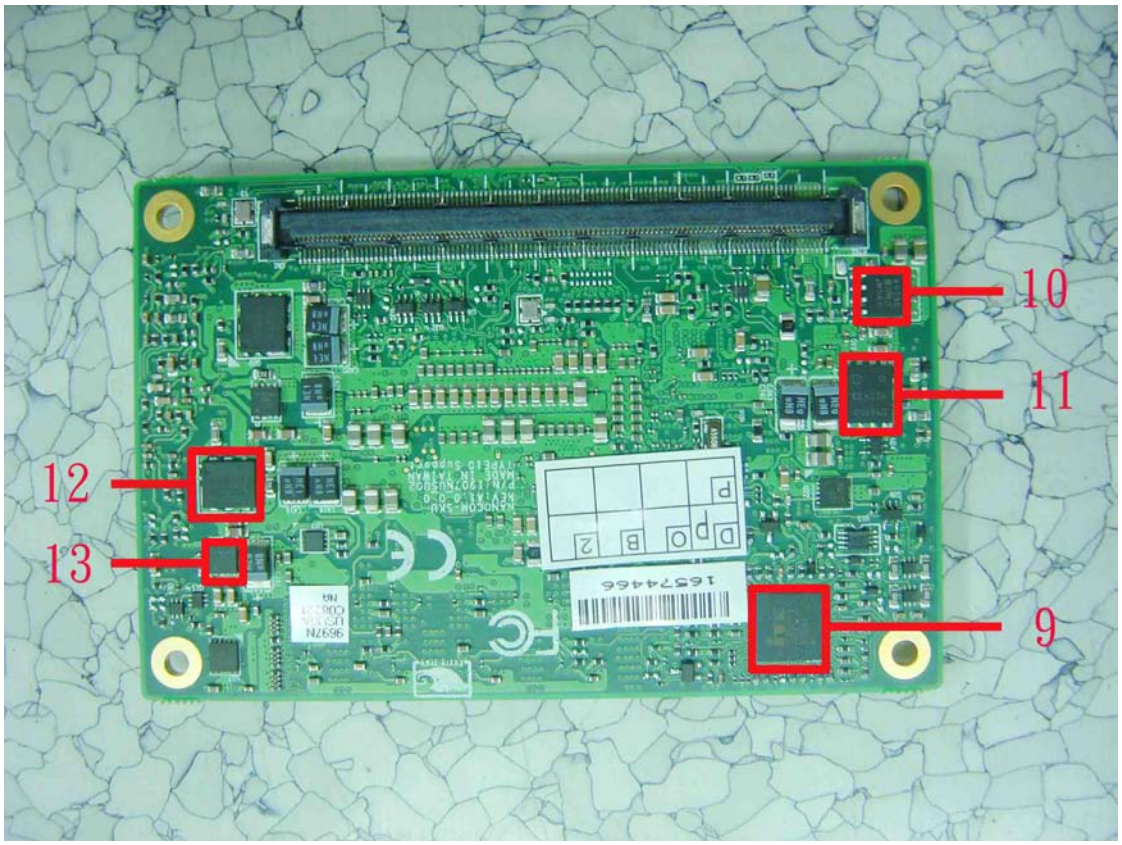
Back Side:



Terminal Recorder:

Measuring Thermal Couple Position：





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

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				25.0℃	60℃	
1	U1	Intel Core i7-6600U / CPU	100	43.6	78.5	
2	U1	Intel Core i7-6600U / PCH	100	42.4	77.3	
3	U6	(TF)IC.DDR4-SDRAM. SAMSUNG.K4A8G165WB-BCPB	95	41.3	76.2	
4	L6	(TF)INDUCTOR.0.15uH. GOTREND.GTV1005PR1-R15K	125	54.9	89.8	
5	L5	(TF)COIL.1.5uH. Zenithtek.ZPWM-4020M-1R5M	125	52.1	87.0	
6	L7	(TF)COIL.0.33uH.NEC/TOKIN.MPLCG0530LR33	120	59.4	94.3	
7	U28	(TF)IC.3-Rail Controller.with SVID Interface for IMVP8. ON Semi. NCP81246MNTXG	100	58.1	**93.0**	**Note6**
8	U23	(TF)IC.Memory Power Supply Controller. Richtek.RT8207MZQW	125	48.6	83.5	
9	U11	(TF)IC.Embedded Controller. ITE.IT8528VG/FX	85	39.2	74.1	
10	Q15	(TF)Dual P-Channel. Vishay.SI4925DDY-T1-GE3	125	43.1	78.0	
11	Q10	(TF)Dual N-Channel. Infineon.BSC0925ND	125	44.0	78.9	
12	Q18	(TF)Dual N-Channel. ON Semi.NTMFD4C85NT1G	125	58.2	93.1	
13	Q11	(TF)PMPAK3X3 DUAL N-MOSFET. FAIRCHILD.FDMC7200S.	125	57.4	92.3	
14		Air Temperature	N/A	25.1	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. : C160501LABD02