

NANOCOM-BT

Thermal Image Analysis Report

Summary	☐ Pass			
	☐ Fail			
	☒ Pass with Deviation			
	Comment: <u>Temperature at twelve component was estimated to be in marginal temperature point in comparison with component datasheet.</u>			
Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	12
Defect Unsolved	0	0	0	12

Issue date

2014 / 10 / 24

Approval

Tom Lin

Test Engineer

Jerry Chen

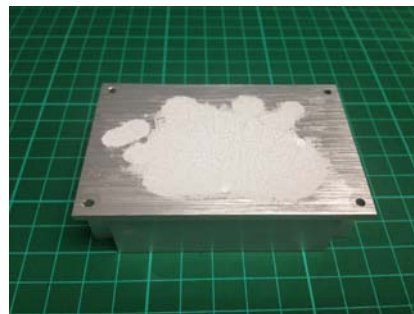
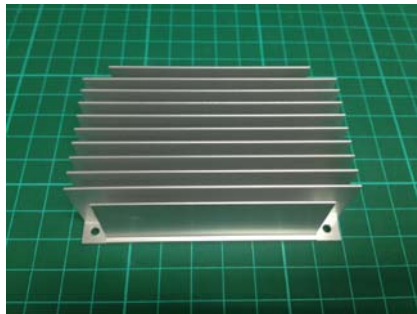
Sample Configuration & Quantity Under Test

- **Model name** : NANOCOM-BT A0.2
- **Mother Board** : NANOCOM-BT A0.2
- **CPU** : Intel Atom E3845 1.91GHz
- **Memory** : On board - Down DDR3L-SDRAM 2GB (V73CBG04168RAJJ11I)
- **2.5" SATA HDD** : Toshiba 160GB / MK1676GSX
- **BIOS** : NANOCOM-BT R0.7(NCBTAM07)(08/11/2014) x64
- **Test Software** : Windows 8 / Run PassMark Burn In Test 7.1 Pro
- **ATX Power Supply** : CWT / DSA400P-C
- **Heat Sink / Heat-Spreader:**

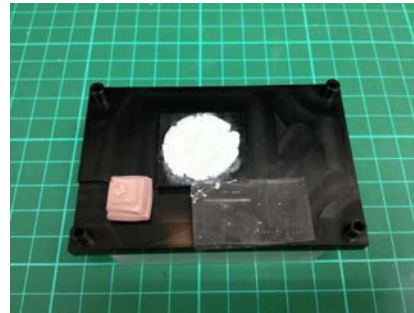
Board



Heat sink(P/N: M16NACV010)



Heat-Spreader (P/N: M16NABT000) and Thermal Pad



Thermal Image Analysis

1. Test Date: 2014-10-23

2. Test Product: NANOCOM-BT A0.2

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: 2014/09/11

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: 2013/12/30

Serial Number: 1051444

5. Test Condition:

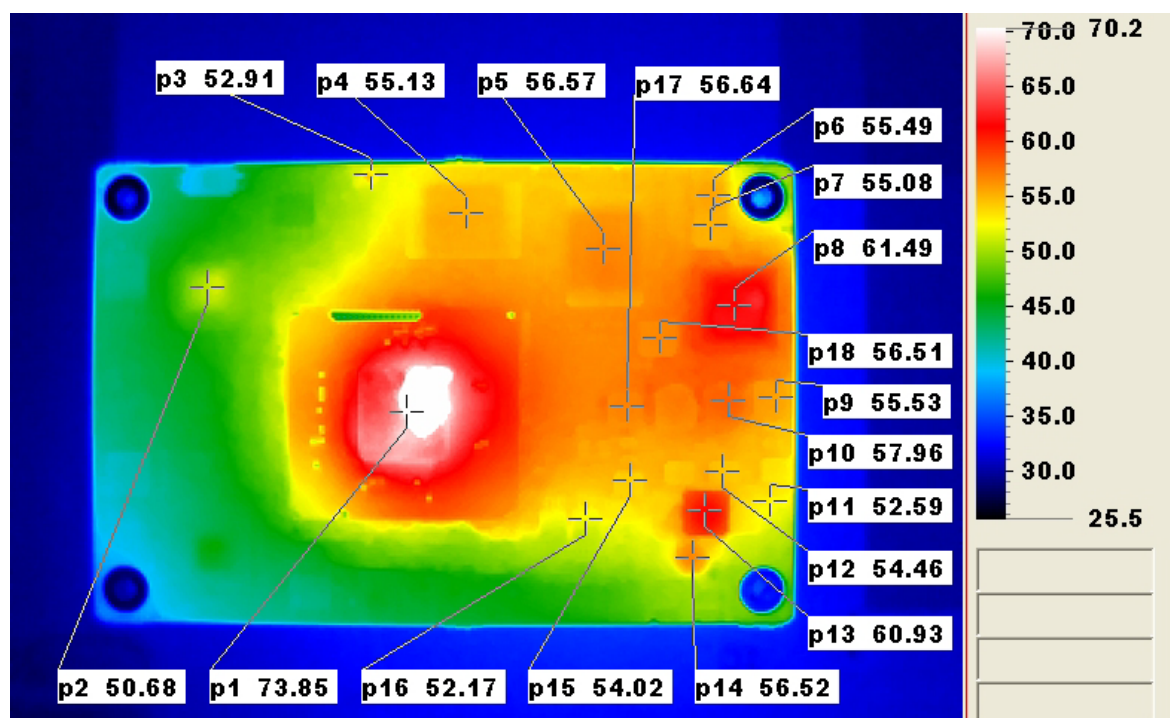
Test by DA-100: 25°C With Heat Sink

6. Take Picture Time:

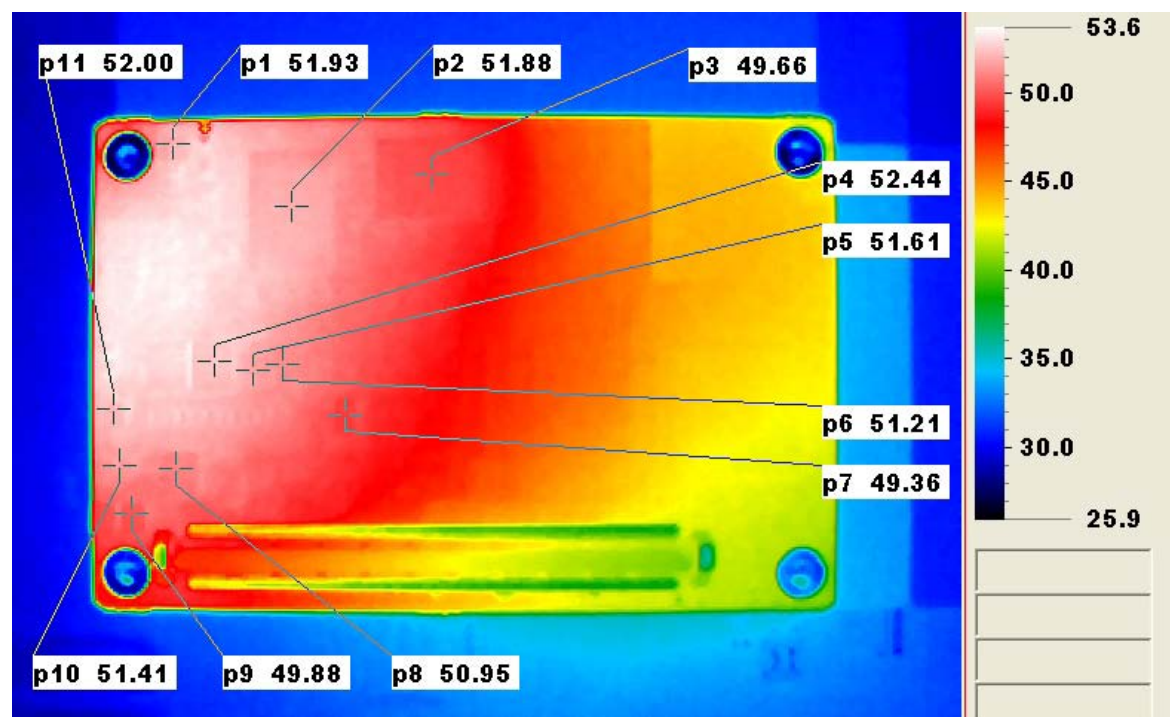
After power on 2 hours

Temperature Profile Test:

Front Side:

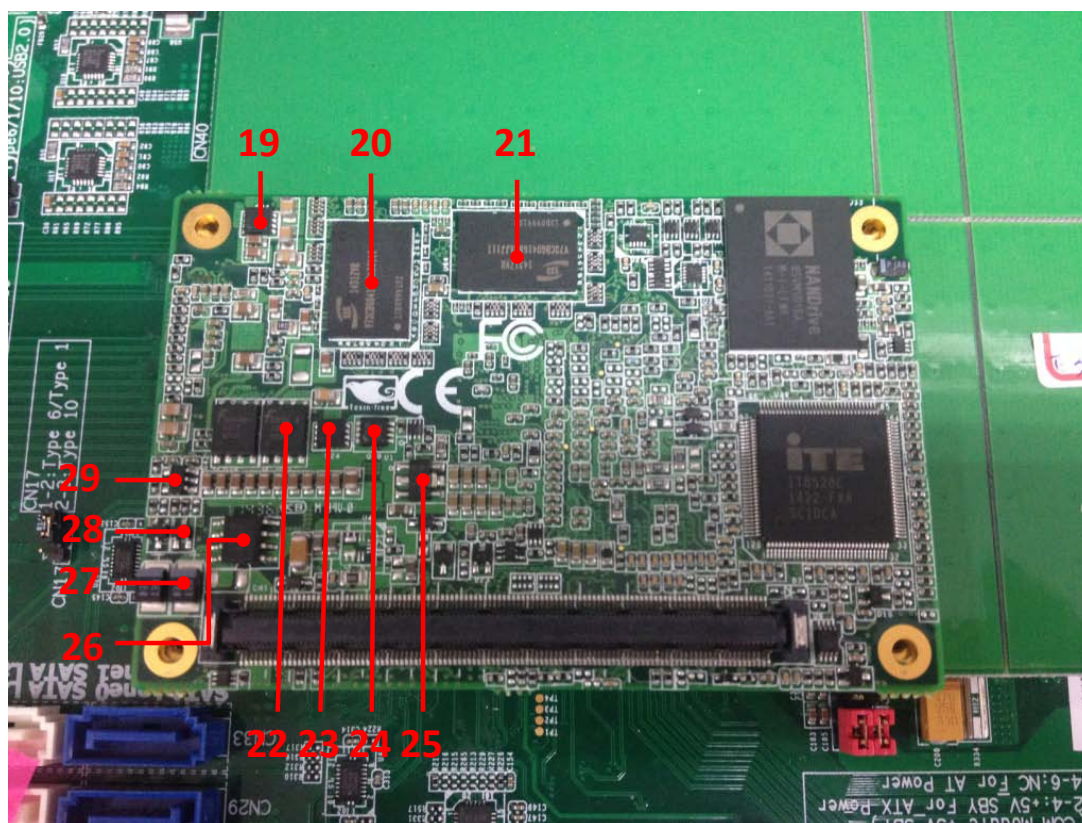
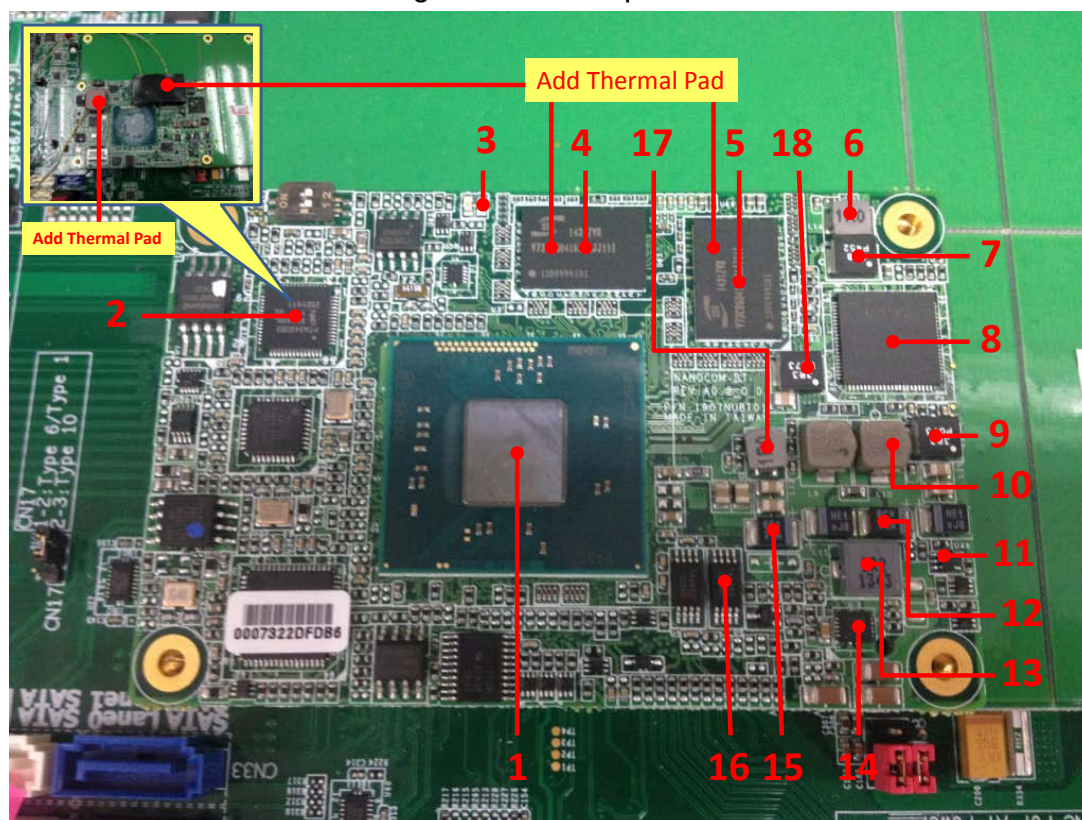


Rear Side:



Terminal Recorder:

Measuring Thermal Couple Position :



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

Point	Position	Describe	Tc (*1) (°C)	Tm (*2) Measured Under		Note
				25°C	60°C	
1	U3	INTEL Bay Trail-I.E3845.1.91GHz.	110	54.9	89.9	
2	U18	Display Port to LVDS Converter.QFN 56 Pin.NXP.PTN3460BS	84	51.7	86.7	Note4
3	LED2	LED.Blue.EVERLIGHT.19-217-BHC-ZL1M2RY-3T	100	55	90.1	Note4
4	U63	DDR3L-SDRAM.256Mx16(bit).PROMOS.V73CBG04168RAJJ11I	95	52.6	87.6	Note4
5	U66	DDR3L-SDRAM.256Mx16(bit).PROMOS.V73CBG04168RAJJ11I	95	53.8	88.8	Note4
6	L14	COIL.1uH.DCR=24mohm.Idc=4.5.Zenittek.ZPWM-4020M-1R0M	140	60.7	95.7	
7	L12	COIL.6.8uH.DCR=91.Irms=2.4.Sumida.0420CDMCBDS-6R8MC	120	60.7	95.7	
8	U60	IC.PMIC.for Intel Valleyview.UQFN.88P.ROHM.BD9596MWV	110	68.8	103.8	Note4
9	L11	COIL.3.3uH.DCR=49.Irms=3.3.Sumida.0420CDMCBDS-3R3MC	120	61	96	
10	L10	COIL.0.33uH.DCR=7.3.IDC=10.3A.NEC/TOKIN.MPLCG0530LR33	135	64.6	99.6	
11	U48	IC.SC-70.5P.2 Input AND Gate.TI.SN74LVC1G08DCKR	100	56.1	91.1	Note4
12	C466	CAP.220uF.2.5V.15mohm.NEC-TOKIN.TEPSLB20E227M(15)8R	120	61.4	96.4	
13	L15	COIL.2.2uH.DCR=25mohm.Idc=5.5Amp.AG.SMTMI0530CN-2R2M	140	66.1	101.1	
14	U7	IC.6A.Synchronous Step down.QFN16.3x3mm.MPS.MP8765GQ-Z	100	60.8	95.8	Note4
15	C433	CAP.220uF.2.5V.15mohm.NEC-TOKIN.TEPSLB20E227M(15)8R	120	59.1	94.1	
16	U6	IC.TSSOP.8P.DUAL FET BUS Switch.TI.SN74CBT3306PWRG4	100	56.5	91.5	Note4
17	L13	COIL.1uH.DCR=24mohm.Idc=4.5A.Zenittek.ZPWM-4020M-1R0M	140	62.8	97.8	
18	L8	COIL.3.3uH.DCR=49.Irms=3.3A.Sumida.0420CDMCBDS-3R3MC	120	62.5	97.5	
19	Q26	PWR.PMPAK3X3 DUAL N-MOSFET.FAIRCHILD.FDMC7200S.	125	58.1	93.1	
20	U65	DDR3L-SDRAM.256Mx16(bit).PROMOS.V73CBG04168RAJJ11I	95	63.9	98.9	Note4
21	U64	IC.DDR3L-SDRAM.256Mx16(bit).PROMOS.V73CBG04168RAJJ11I	95	61.9	96.9	Note4
22	Q23	PWR.DUAL.N-MOSFET.Id1=13A.PQFN8.FAIRCHILD.FDMS3664S	125	64.9	99.9	
23	Q24	PWR.PMPAK3X3 DUAL N-MOSFET.FAIRCHILD.FDMC7200S.	125	63.3	98.3	
24	Q10	PWR.MLP 3.3x3.3.P-channel MOSFET.FAIRCHILD.FDMC4435BZ	125	61.4	96.4	
25	U1	IC.Low-Dropout Regulator.SOT89.YOBON.YT9110-ADJPBA	100	62.8	97.8	Note4
26	Q55	(AOH)PWR.Dual P-Channel.Vds=-30V.SI4925DDY-T1-GE3	125	59.5	94.5	

27	C114	CAP.150uF.6.3V.35mOhm.NEC-TOKIN.TEPSLB20J157M(35)8R	120	54.3	89.3	
28	Q31	PWR.SOT-323.N-Channel.Mosfet.ON.2N7002WT1G	125	55.8	90.8	
29	U42	IC.LDO Regulator.500mA.SOT23-5 5P.UPI.UP0107BMA5-00	100	56.5	91.5	Note4
30	N/A	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** : $T_m > T_c + 5^{\circ}\text{C}$; The measured value is over specification plus margin.

- **Margin** : $T_c + 5^{\circ}\text{C} > T_m > T_c - 10^{\circ}\text{C}$; 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** : $T_m < T_c - 10^{\circ}\text{C}$; The measured value is with safety margin.

4. Defect NO. C140302QED03