ETKD-JPHOKL01-B01

Environment Test Report

Report NO:13E020007

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:** **Temperature points at 1 components were estimated to be in marginal temperature points in comparion with component datasheets.**

Issue date	Approval	Test Engineer
2013-04-16	**Tom Lin**	**Andy Chen**

Test item list

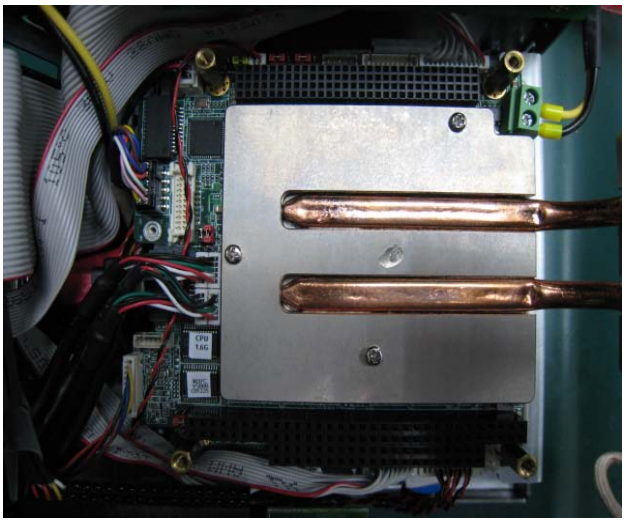
Testing Result

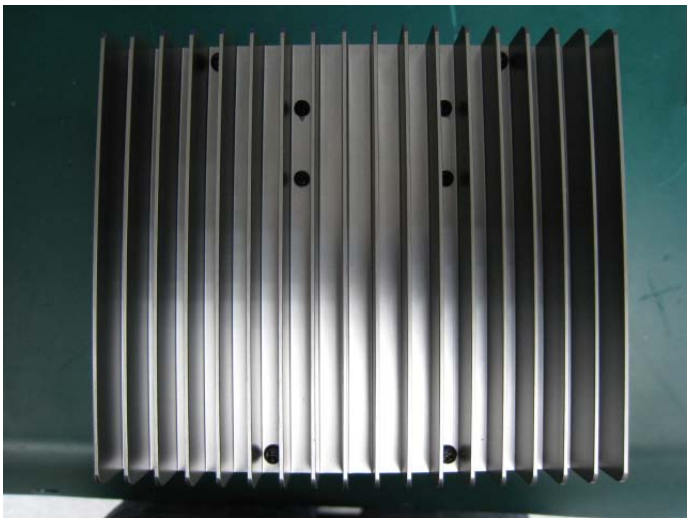
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	Cold start and hot start test	Pass	

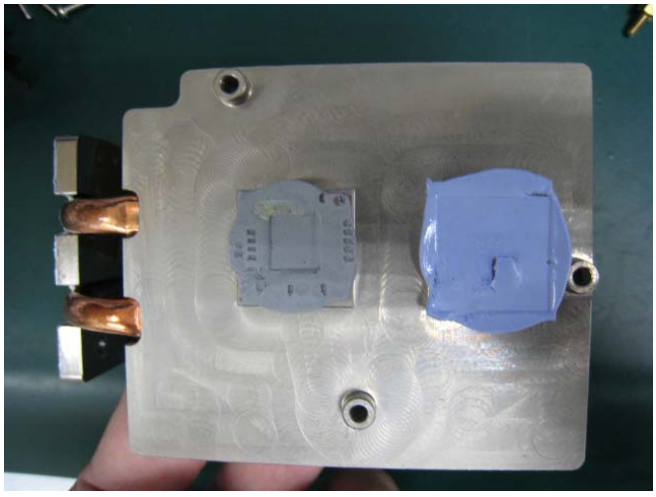
Configuration of EUT

Item	Device Information	
SYSTEM PC Model / Ver.	ETKD-JPHOKI01-B01 A1.0	
CPU	Intel Atom N2600 1.6GHz	
BIOS / Version	PFM-CVS Rev.B R0.1(PFCVBM01)(02/19/2013)	
South Bridge	Intel Cedar View platform N2600	
Industrial Memory	DSL DDR3 1333 2G CL9 2UD22D9MGZ	
Industrial SSD	Innodisk FID 2.5” SATA 1000 plus – Innodisk FID 2.5” SATA 1000 plus	
Operating System	Windows 7 Professional English 64 Bit	
Adapter	FSP FSP084-DMAA1	

System picture:







Temperature rise test

Test Date: 04-15-2013

Test Product: ETKD-JPHOKI01-B01

Test Site: AAEON QE Dept.

Test Standard: Refer to EN 61131-2(94), UL508 (94)

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 10/08/2012
Serial Number: 12A323190

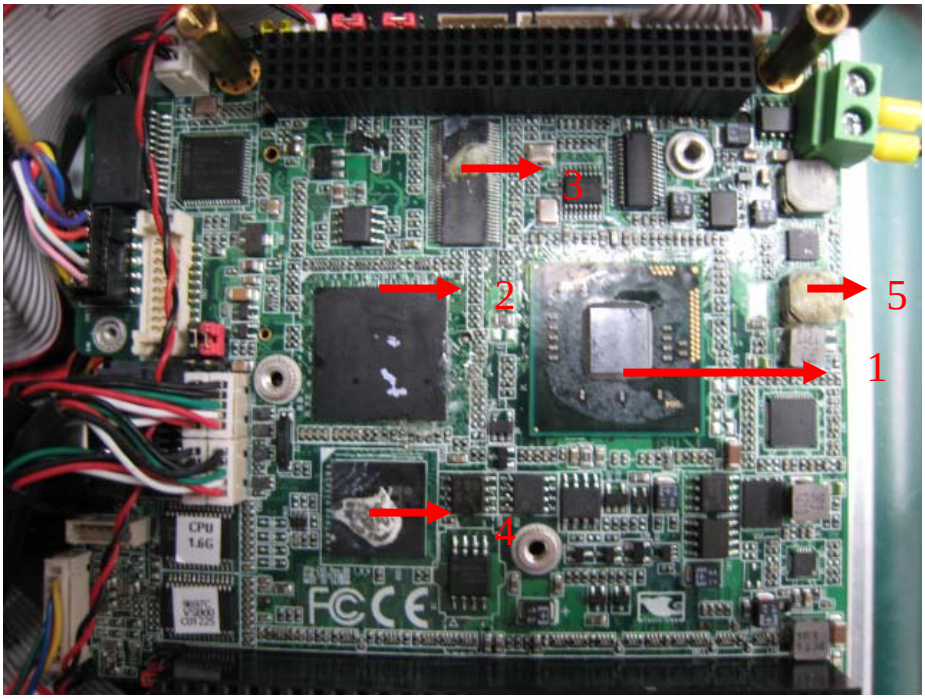
Test Condition:

Ambient temperature: 55℃
Continuous running till thermal stable (within less than 1℃)

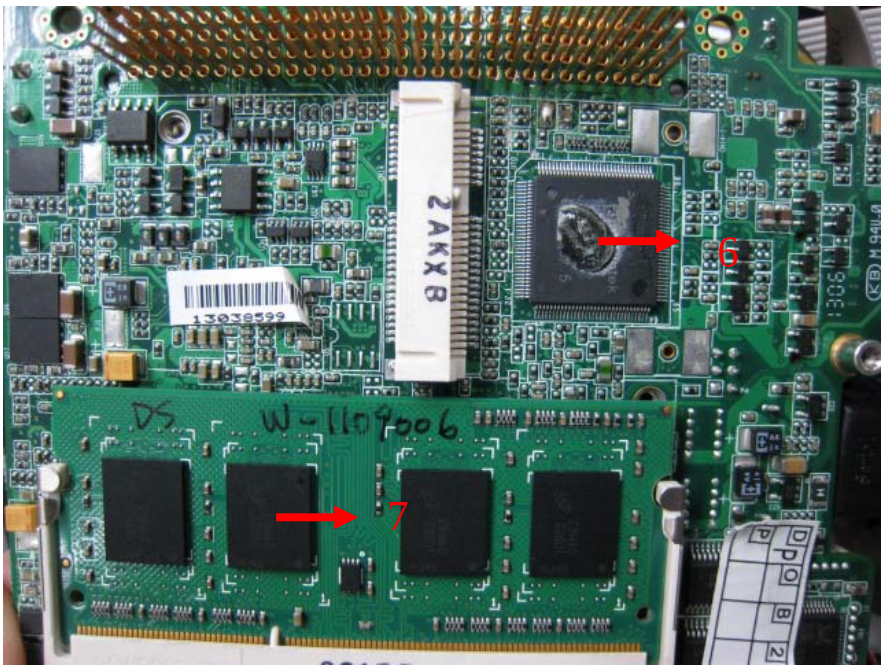
Test Software:

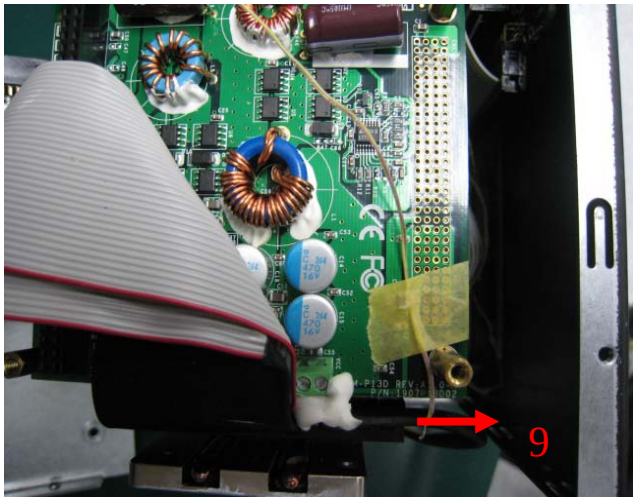
Windows 7 / Run PassMark Burn In Test 7.0 Pro

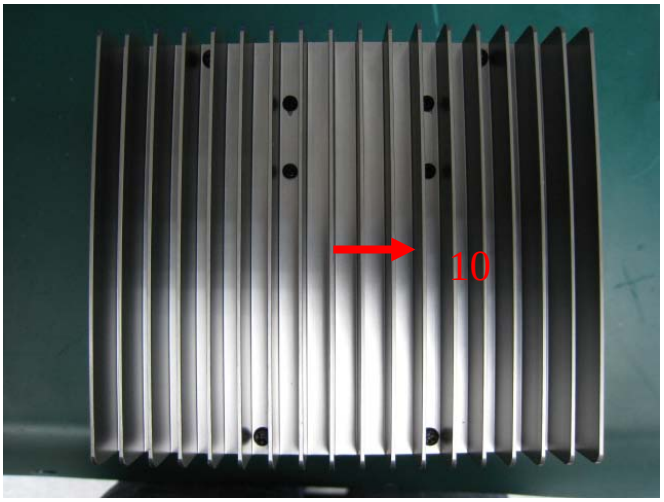
Terminal Recorder:

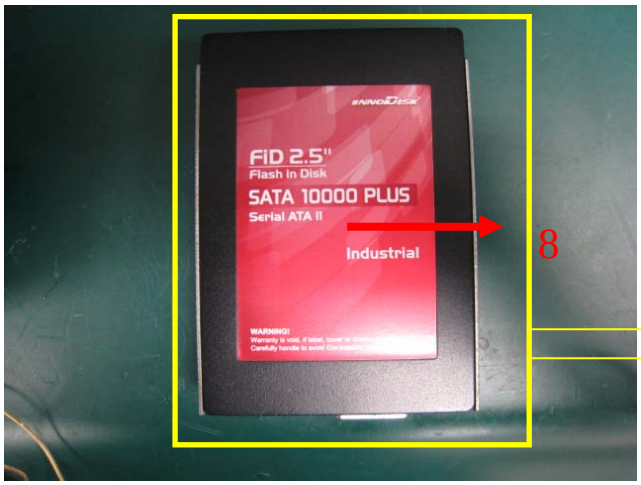


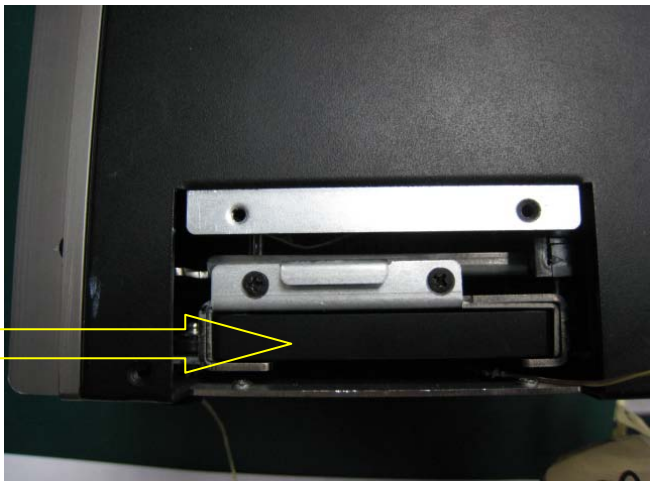
Temperature rise test











Temperature rise test

Thermal profile data:

Point \ Temp. Stage(℃)	Spec	25	55	Note
01. CPU - Intel Atom N2600 1.6GHz	100	47.5	77.5	
02. U2 - (TF)IC.SMD.NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	49.5	79.6	
03. U4- IC.SMD.TSSOP64P.CLOCK GENERATOR.IDT.9LPRS501PGLF	115	54.1	84.1	
04. U58 - (TF)IC.SMD TFBGA.160P.PCI to ISA Bridge Chip.ITE.IT8888G-L	125	52.0	82.0	
05. L12 - COIL.3.3uH.20%.SMD	125	58.3	88.3	
06. U10 - (TF)IC.SMD.LQFP128P.Super I/O.Fintek.F81866D-I	125	55.1	85.1	
07. RAM - DSL DDR3 1333 2G CL9 2UD22D9MGZ	85	54.0	84.0	**Note4**
08. Industrial SSD – Innodisk FID 2.5" SATA 1000 plus	85	43.2	73.2	
09. Internal Air	NA	50.3	80.3	
10. External heatsink	NA	41.7	71.7	
11. Chamber Temperature	NA	25	55	

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; The measured value is over specification plus margin.
- **Margin** : Tc > Tm > Tc-5℃; 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-5℃; The measured value is with safety margin.

4. Defect NO. E130203LABE02

Sample Configuration & Quantity Under Test:

Quantity: 1 (ETKD-JPHOKI01-B01)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 04-11 ~15-2013

Test Product: ETKD-JPHOKI01-B01

Test Site: AAEON QE Dept.

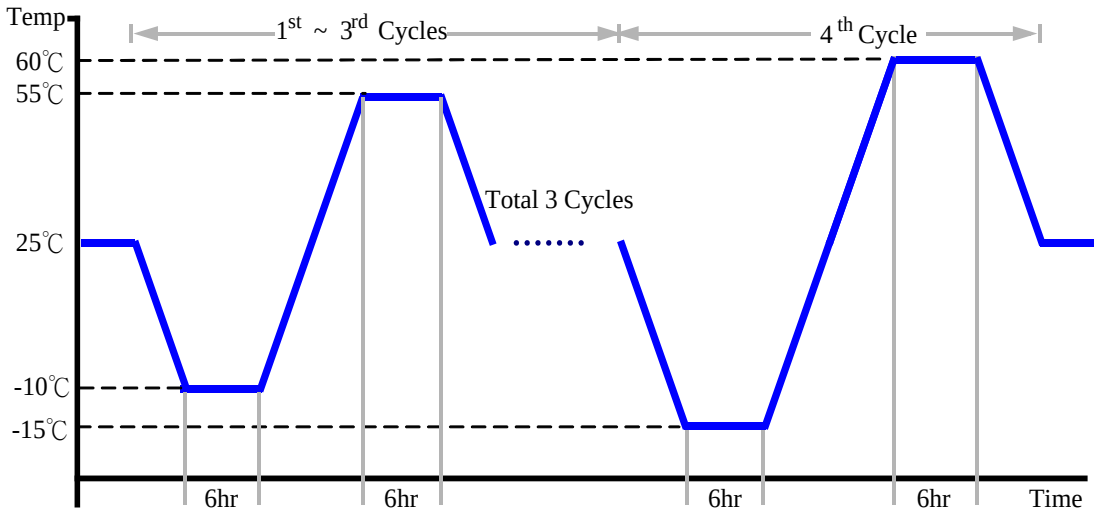
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber(K.SON. INS. TECH. CORP.)
Model: THS-D75-100+LN2
Date of Calibration: 06/20/2012
Serial Number: 6487KT

Test Condition:

1. Test Low Temperature: -10℃ (1~3 cycles)
   -15℃ (4^{th} cycle)
2. Test High Temperature: 55℃ (1~3 cycles)
   60℃ (4^{th} cycle)
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 4 cycles
6. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (ETKD-JPHOKI01-B01)

Test Result:

No issues were found during the temperature operation cycle test.

Cold start and hot start test

Test Date: 04-10~11-2013

Test Product: ETKD-JPHOKI01-B01

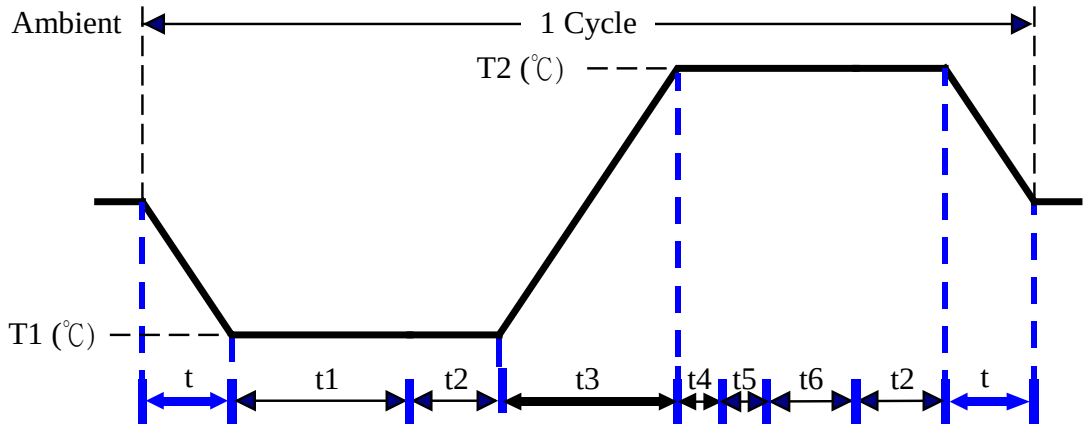
Test Site: AAEON QE Dept.

Test Standard: Refer to IEC 68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber(K.SON. INS. TECH. CORP.)
Model: THS-D75-100+LN2
Date of Calibration: 06/20/2012
Serial Number: 6487KT

Test Condition:



Parameters	Description
T1	-15℃
T2	60℃
t1	4 hrs
t2, t6	2 hrs
t4, t5	1hrs
t, t3	2℃/min
n (Cycle)	1

t = temprature slope
t , t1, t6: Power Off
t2: Power on/off test 10 times (on 2 min / off 5min)
t3, t4: Run Burn In Test 7.0 Pro
t5: Win 7 Software restart test 3 times
Test Software: Windows 7

Test Result:

a. No issues were found during the cold start test.

b. No issues were found during the hot start test.