AEC-6420

With CFD

Environment Test Report

Report NO: 09P020021

Issued by:	Rex-Chang	/	*07/16/2009*
	Test Engineer		**Date**
Reviewed by:	Wenyuan Yang	/	*07/16/2009*
	Manager		**Date**

Test item list

Test Configuration:

Num	Item	Spec
1.	Control Box:	AEC- 6420
	1. Main Board	AAEON EPIC-9457 Rev. A1.0 (BIOS: 0.A)
	2. CPU	Intel Atom N270 / 1.6GHz
	3. Industrial Memory	DSL 1GB / ELPIDA E5108AGBG-6E-E (DDR2-667)
	5. Industrial CFD	Transcend 4GB
	6. Test Software	Windows XP / Run PassMark Burn In Test 5.1 Pro
	7. Adapter	EDAC EA1050A-120

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Temperature rise test

Test Date: 07-15-2009

Test Product: AEC-6420

Test Site: AAEON QA Internal Lab.

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

Temperature Measurement:

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

Test Condition:

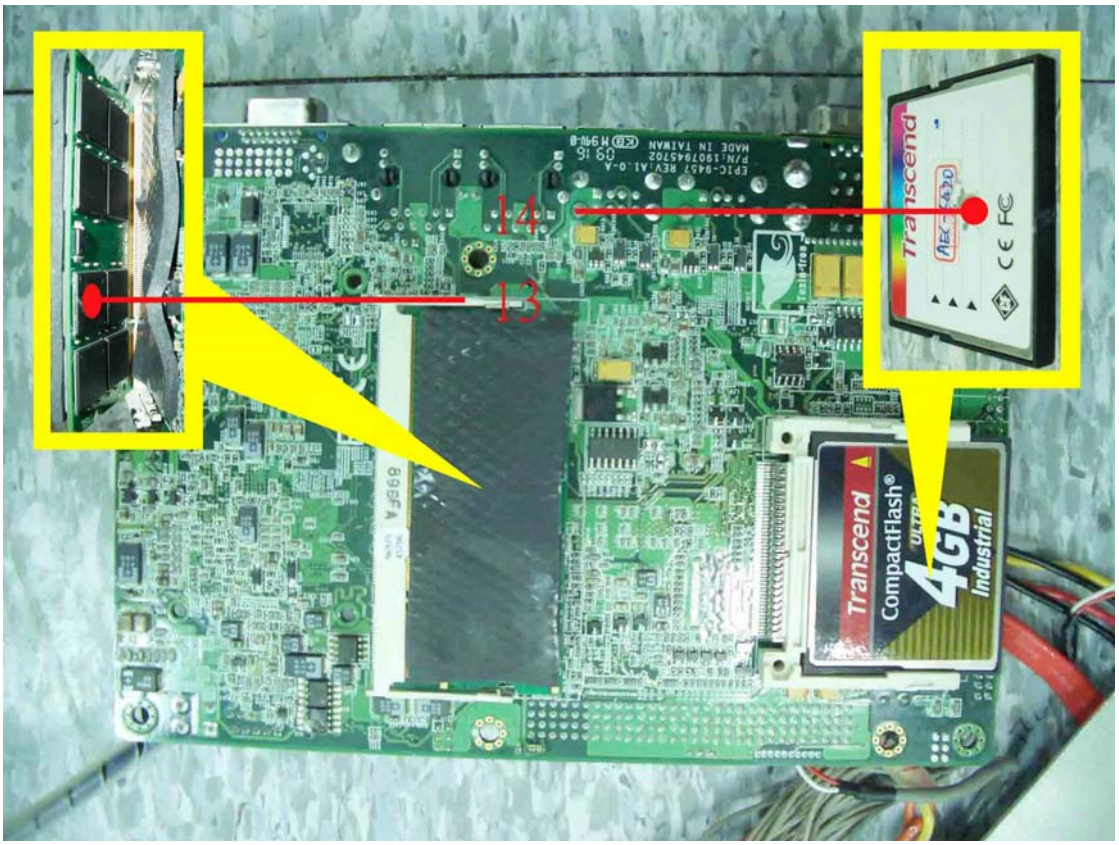
Ambient temperature: 45dC
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows XP / Run PassMark Burn In Test 4.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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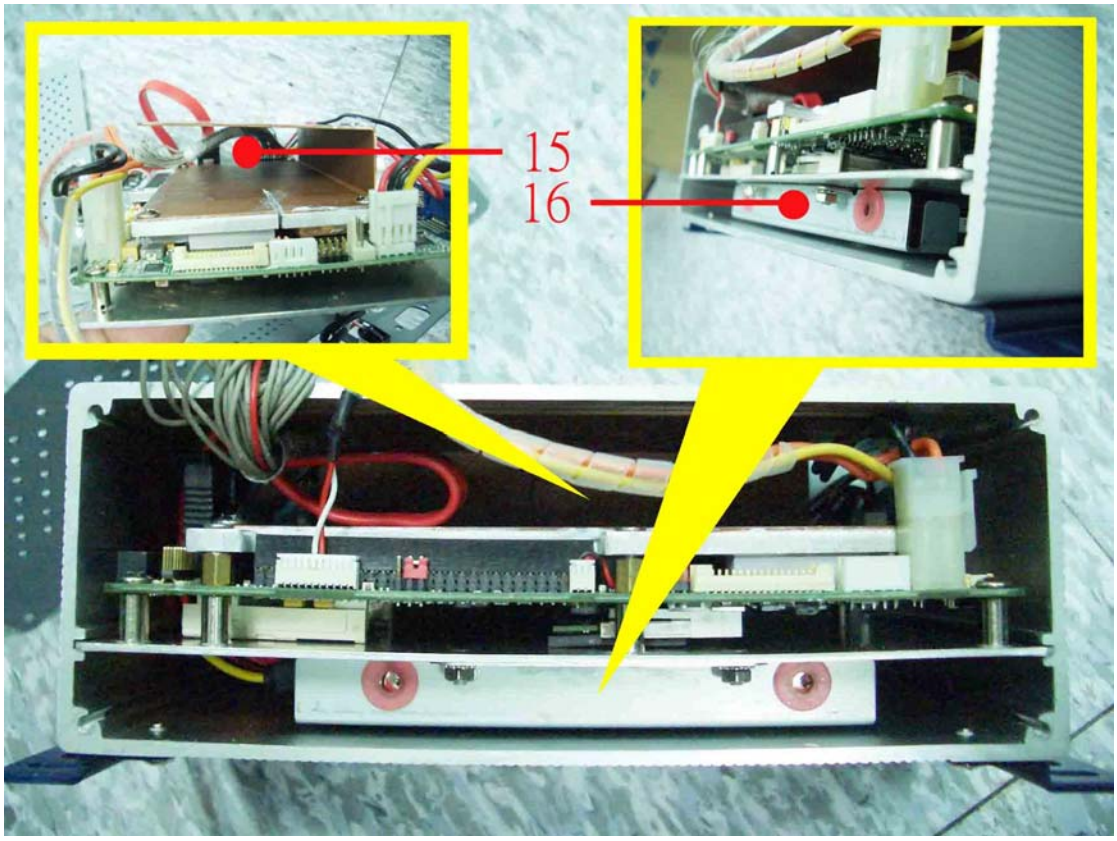

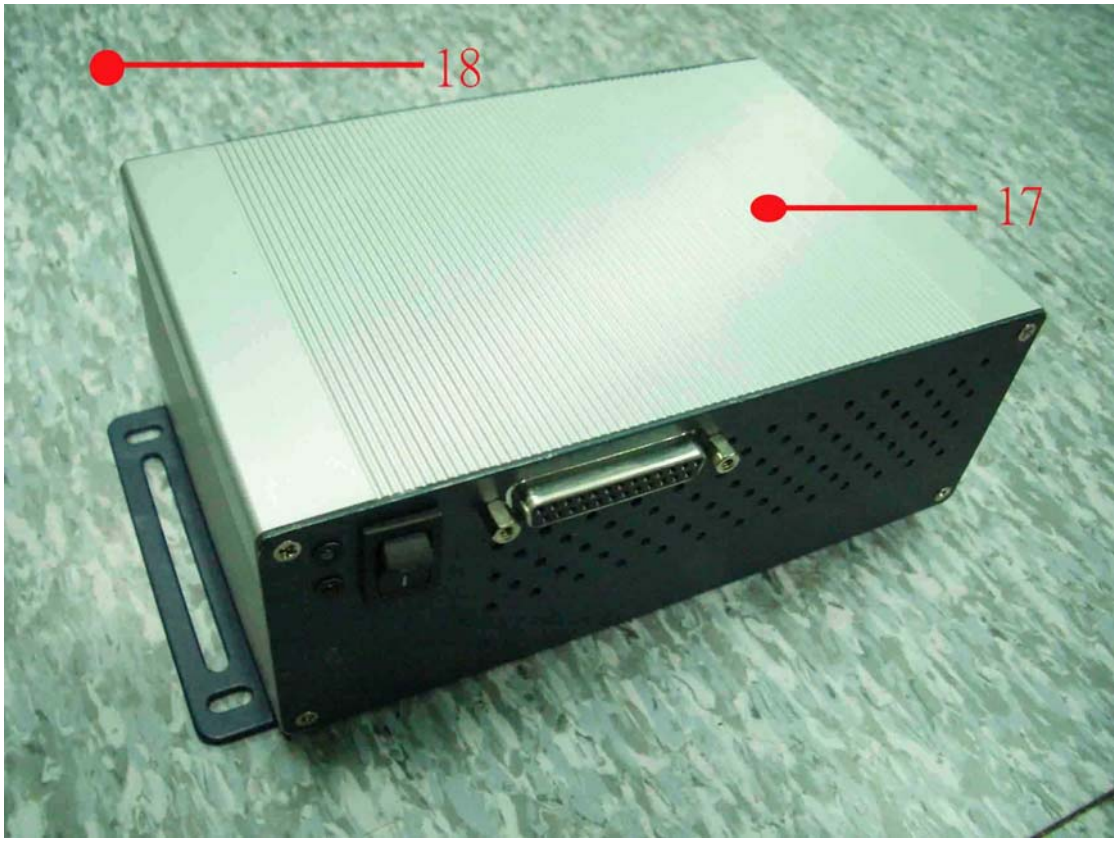

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Temperature rise test

Thermal profile data:

AEC-6420

Point / Temp. Stage(℃)	Spec	45	25
EPIC-9457			
01. CPU	90	85.1	65.1
02. U10 - (TF) Intel 945GSE Express Chipset.Intel.QG82945GSE SLB2R	105	101.6	81.6
03. Q5 - (TF) PWR N-Channel.30V.12A.ANPEC.APM4410KC-TRL	125	100.6	80.6
04. U26 - (TF) Super I/O w/4 COMs.ITE.IT8781F/AX-L	100	87.5	67.5
05. U18 - (TF) CLOCK GENERATOR.IDT.9LPRS501PGLF	100	88.6	68.6
06. U29 - (TF) PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	100	86.4	66.4
07. U30 - (TF) PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8	100	88.5	68.5
08. U4 - (TF) 6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF	100	88.1	68.1
09. UU7 - (TF) ICH7M.Intel.NH82801GBM SL8YB	99	90.1	70.1
10. Q33 - (TF) PWR .N-Channel.30V.12A.ANPEC.APM4420KC-TRL	125	104.9	84.9
11. Q32 - (TF) PWR .N-Channel.30V.12A.ANPEC.APM4420KC-TRL	125	102.2	82.2
12. U40 - (TF) REG. Linear Regulator.Diodes.AP1084DL-13	150	88.6	68.6
13. Industrial Memory	95	88.5	68.5
14. Industrial CFD	85	78.9	58.9
15. Control Box Internal Air Temperature - 1	N/A	71.5	51.5
16. Control Box Internal Air Temperature - 2	N/A	70.1	50.1
17. Control Box External Surface	N/A	67.5	47.5
18. Chamber Air Temperature	N/A	44.9	24.9
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification.			

Sample Configuration & Quantity Under Test:

Quantity: 1 (AEC-6420)

Test Result:

No problem was found during the temperature rise operation test.

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Temperature cycle test

Test Date: 07-03~06-2009

Test Product: AEC-6420

Test Site: AAEON QA Internal Lab.

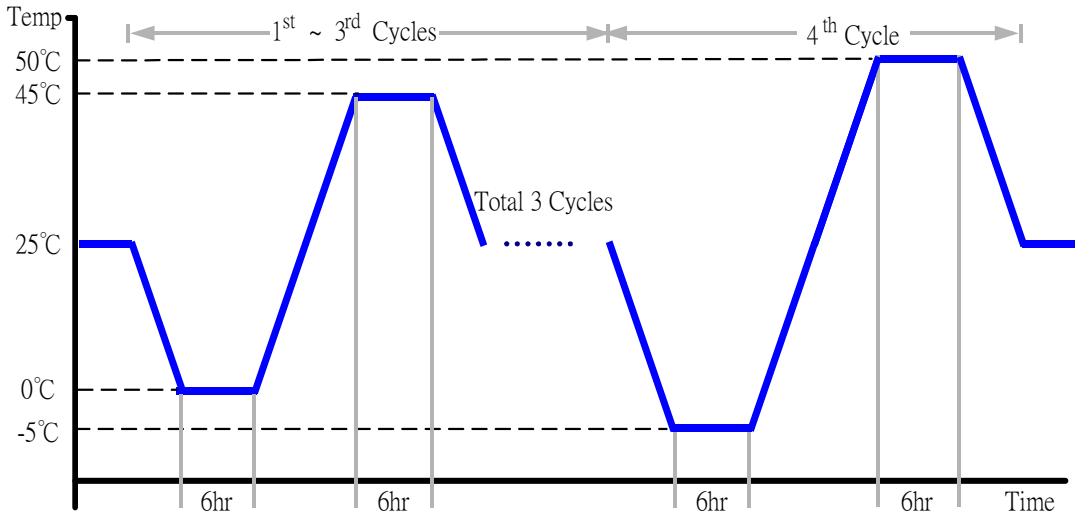
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/07/08
Serial Number: 1241

Test Condition:

1. Test Low Temperature: 0℃ (1~3 cycles)
   -5℃ (4th cycle)
2. Test High Temperature: 45℃ (1~3 cycles)
   50℃ (4th 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 (AEC-6420)

Test Result:

No problem was found during the temperature operation cycle test.

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High temperature storage test

Test Date: 07-06~08-2009

Test Product: AEC-6420

Test Site: AAEON QA Internal Lab.

Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/07/08
Serial Number: 1241

Testing Item:

1. Test Temperature: 60℃
2. Test Times: 48Hrs
3. Test Software: Windows XP / Run PassMark Burn In Test 5.1 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6420)

Test Result:
No problem was found after the high temperature storage test.

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Low temperature storage test

Test Date: 07-08~10-2009

Test Product: AEC-6420

Test Site: AAEON QA Internal Lab.

Test Standard: Reference IEC 68-2-1 Testing procedures
Test Ab: Cold Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/07/08
Serial Number: 1241

Testing Item:

1. Test Temperature: -10℃
2. Test Times: 48Hrs
3. Test Software: Windows XP / Run PassMark Burn In Test 5.1 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6420)

Test Result:
No problem was found after the low temperature storage test.

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Humidity test

Test Date: 07-10~12-2009

Test Product: AEC-6420

Test Site: AAEON QA Internal Lab.

Test Standard: Reference IEC 68-2-3 Testing procedures
Test Ca: Damp heat, steady state (Non-operation)

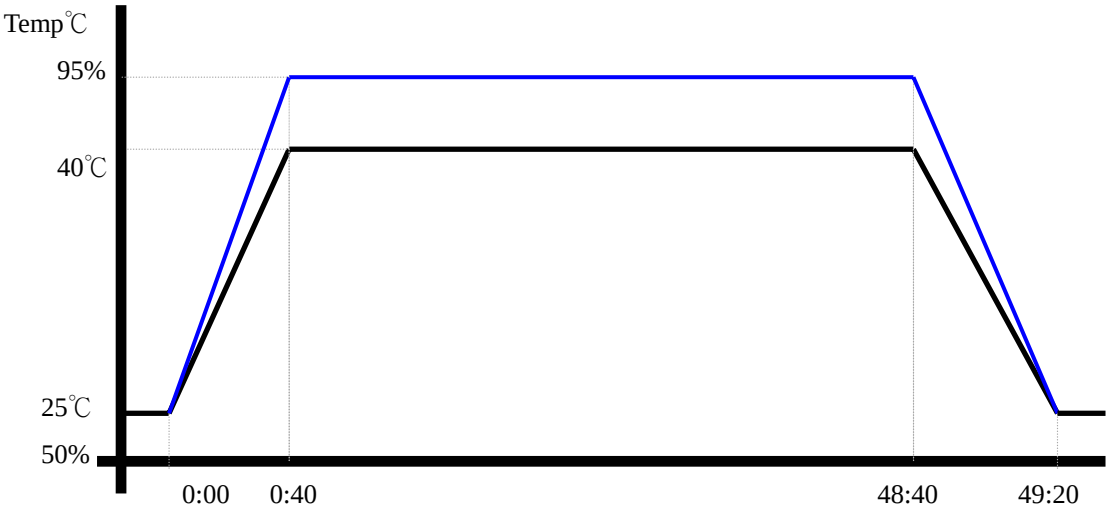
Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/07/08
Serial Number: 1241

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows XP / Run PassMark Burn In Test 5.1 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6420)

Test Result:
No problem was found after the humidity storage test.

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Cold start and hot start test

Test Date: 07-13~14-2009

Test Product: AEC-6420

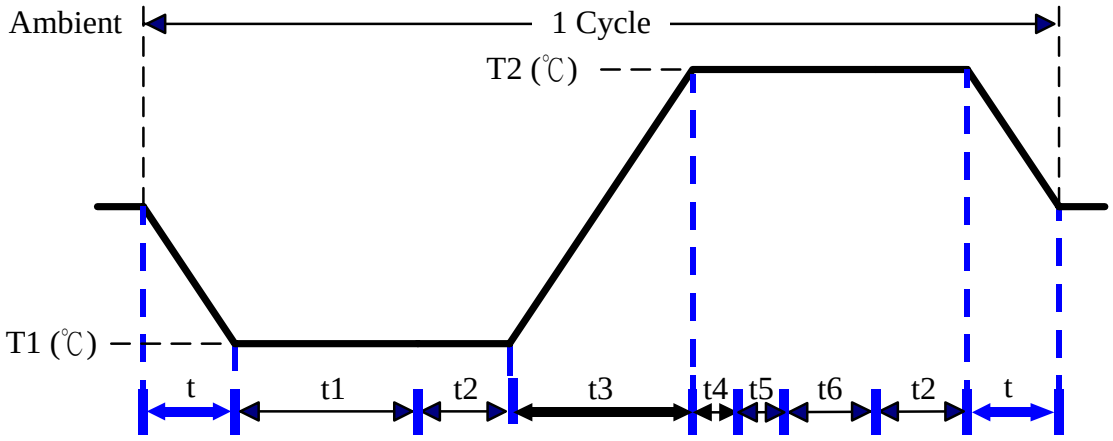
Test Site: AAEON QA Internal Lab.

Test Standard: Reference 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-D4L+-100
Date of Calibration: 05/07/08
Serial Number: 1241

Test Condition:



Parameters	Description
T1	-5℃
T2	50℃
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 PassMark Burn In Test
t5: Win XP Software restart test 3 times
Test Software:Windows XP

Test Result:

a. No problem was found during the cold start test.

b. No problem was found during the hot start test.

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