AEC-6710 (PFM-550S)

With CFD

Temperature Cycle Test Report

Report NO: 06P020015

Issued by:	Sean Hsu	/	*09/01/2006*
	Test Engineer		**Date**
Reviewed by:	Wenyuan Yang	/	*09/01/2006*
	Manager		**Date**

Test item list

Num	Item	Spec
1.	Control Box:	AEC- 6710 IP67 Communication Controller
	1. Main Board	AAEON PFM-550S Rev. A1.0 Compact Board (BIOS: 0.2)
	2. CPU	VIA Mark 533MHZ
	3. Memory	Apaccr SO-DIMM 512MB PC133 V54C325680VDJ71
	4. Power Module	AAEON T054 A1.0
	5. Industrial CFD	PQI 2GB
	6. Switching Power Supply	Zippy SP2-4400F

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Temperature cycle test

Test Date: 08-25~27-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

Performed By: Sean Hsu

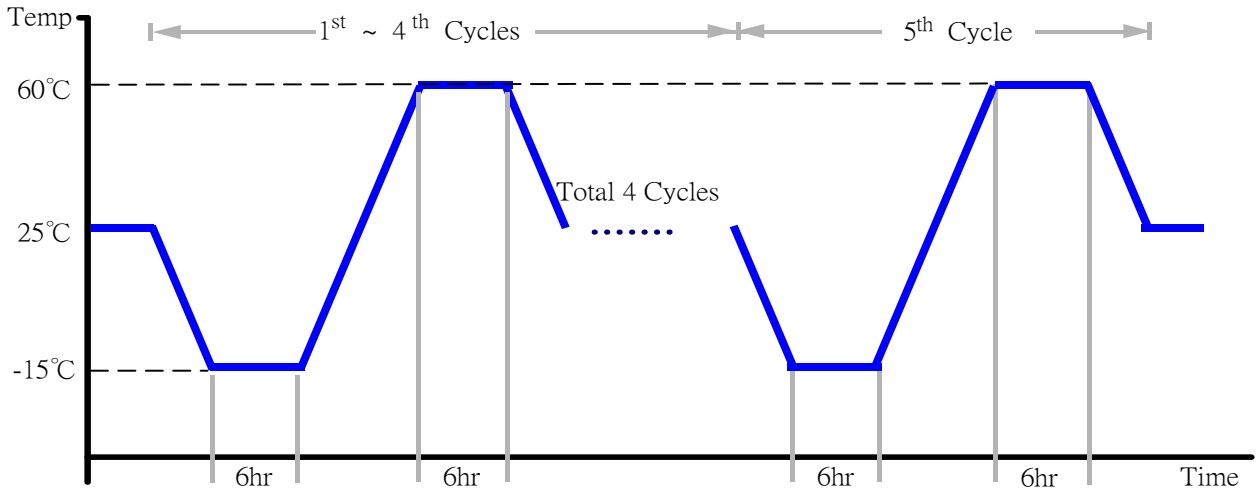
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Temperature Measurement:
40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 12/14/05
Serial Number: 12A323190

Test Condition:

1. Test Low Temperature: -15℃
2. Test High Temperature: 60℃
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 5 cycles
6. Test Software: Windows 2000 / Run PassMark Burn In Test Pro 4.0
7. Test Environment Curve:



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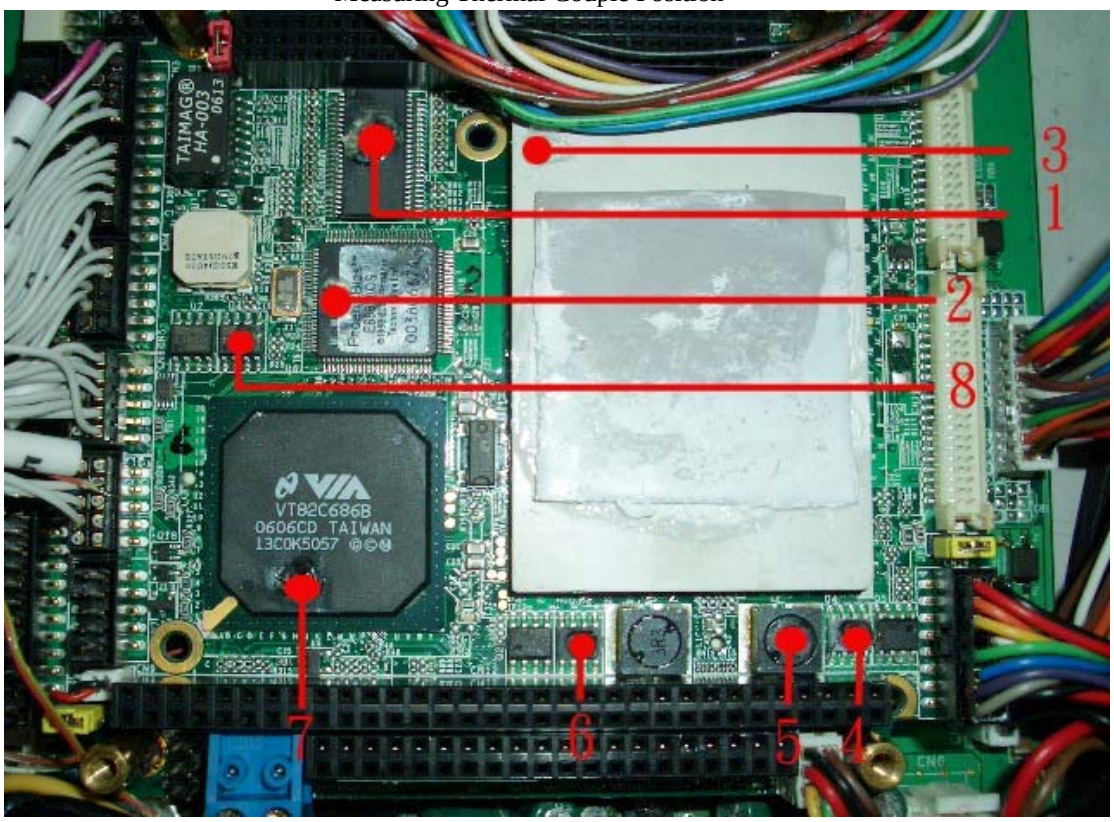
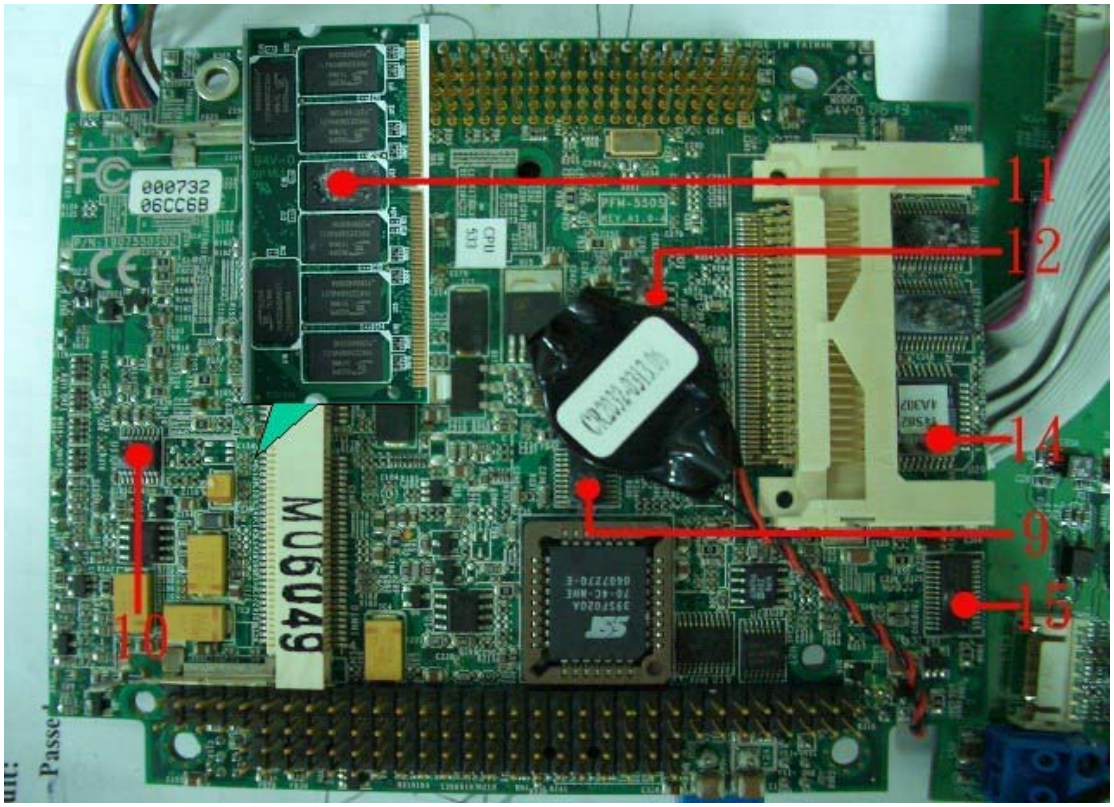
Temperature cycle test

Terminal Recorder:

Measuring Thermal Couple Position：





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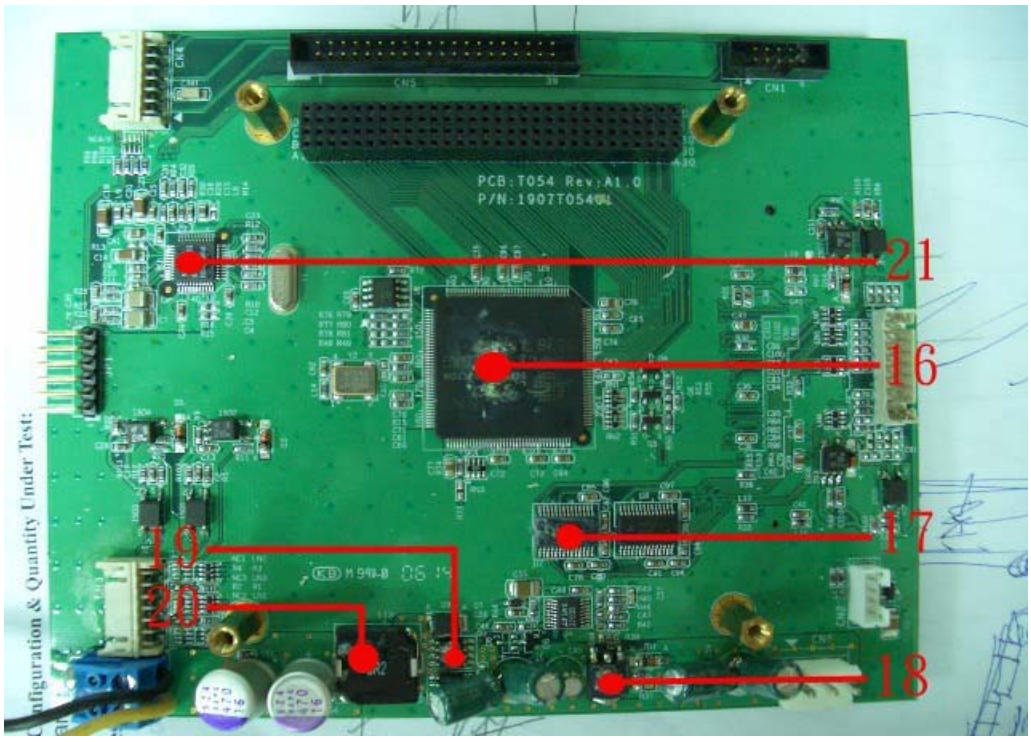
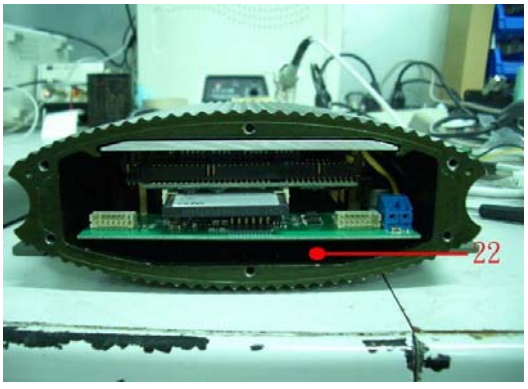
Temperature cycle test





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Temperature cycle test

Thermal profile data:

AEC-6710 (PFM-550S)

Point \ Temp. Stage(℃)	Spec	60	25	-15
PFM-550S				
01. U7-(TF) SSOP 48Pin.Clock gen.ICS.ICS94241AFLF	115	94.3	59.3	19.3
02. U6-(TF).BGA South Bridge.VIA.VT82C686BG	85	78.4	43.4	3.4
03. U9(TF)VIA CPU.BGA 686P.Mark 533GMHz.0.9V	85	67.9	32.9	-7.1
04. Q4-(TF)PWR.SMD.SO8.N-Channel.30V.12A.ANPEC.APM4410KC-TRL	125	76.3	41.3	1.3
05. L2-(TF)INDUCTORS.1.8uH 7.2A.+/-20%.SMD 2pin.GOTREND.GSCDK74P-1R8M	85	77.0	42.0	2.0
06. Q3-(TF)PWR.SMD.SO8.N-Channel.30V.12A.ANPEC.APM4410KC-TRL	125	76.5	41.5	1.5
07. U6-(TF)BGA South Bridge.VIA.VT82C686BG	85	76.7	41.7	1.7
08. U4-(TF)IC.SMD.NSOIC 8P.RS-485 Transceivers.SIPEX.SP485ECN-L	70	75.8	40.8	0.8
09. U16-(TF) IC.SMD TSSOP.20P.TI.SN74HCT245PWR	85	77.0	42.0	2.0
10. U11-(TF)IC.SMD.QSOP 16Pin.CMD.PAC-VGA201QR	70	74.8	39.8	-0.2
11. Industrial Mamory	85	78.0	43.0	3.0
12. U18-(TF)Microchip.93LC46B/SN EEPROM.For PFM-550S LAN EEPROM	155	78.1	43.1	3.1
13. Industrial CFD	85	80.2	45.2	5.2
14. U20-(TF) TQFP 44P.CS:C5E4Ch.GENE-6310.LATTICS.M4A3-64/32-10VNC	100	77.1	42.1	2.1
15. U29-(TF)QSOP 28P.IEEE 1284 Termination Network.CMD.PACSZ1284-04QR	85	72.5	37.5	-2.5
Power Module T054				
16. U5-(TF).LQFP 160Pin.Dual UARTs.OXFORD.OXmPCI952-LQAG	105	72.3	37.3	-2.7
17. U7-(TF) SSOP 28P.RS232 Driver ESD 15KV.INTERSIL.HIN213ECAZ	70	74.3	39.3	-0.7
18. Q2-(TF)NPN.SMD.SOT223.Mideum Power Transistor.ZETEX.FZT605	125	72.0	37.0	-3.0
19. Q3-(TF)PWR.SMD.SOP 8P.N-Channel MOSFET.FAIRCHILD.FDS5670	125	69.9	34.9	-5.1
20. L13-(TF)POWER INDUCTOR.SMPI1205HW-8R2M	125	76.4	41.4	1.4
21. U2-(TF)IC.SMD LQFP 48Pin.6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF	100	79.9	44.9	4.9
22. Control Box Internal Air Temperature	NA	65.2	30.2	-9.8
23. Control Box Surface	NA	64.5	29.5	-10.5
24. Chamber Air Temperature	60	59.8	24.8	-15.2

1. Tm (Measured operation temperature) must less than Tc (Specified case temperature) + 5 degree C.

2. Any Tm value showed in red words which meaning the value over the Tc + 5 degree C of this device specification

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Sample Configuration & Quantity Under Test:

Quantity: 1 (AEC-6710)

Test Result:

No problem was found during the temperature operation cycle test. But there have two location temperature are over spec. and the detail information as below.

1. U4 (TF)IC.SMD.NSOIC 8P.RS-485 Transceivers.SIPEX.SP485ECN-L

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High temperature Operation test

Test Date: 08-31~09-01-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

Performed By: Sean Hsu

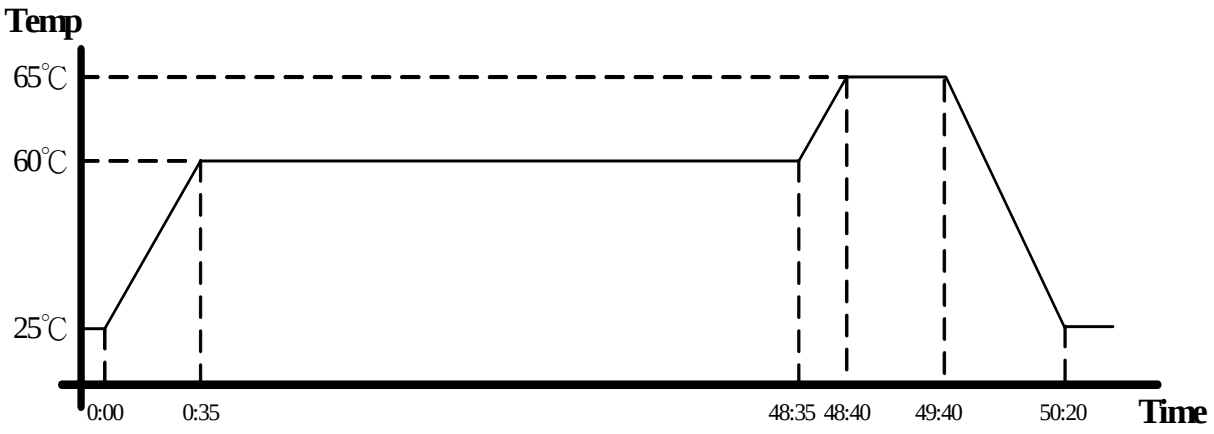
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bd: Dry Heat Test (Operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Testing Item:

1. Test Temperature: 60℃/ 65℃
2. Test Times: 60℃/ 96Hrs ; 65℃/1Hr
3. Temperature slope: 1℃/min
4. Test Software: Windows 2000 / Run PassMark Burn In Test Pro 4.0
5. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6710)

Test Result:

No problem was found after the high temperature operation test.

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High temperature storage test

Test Date: 08-21~22-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

Performed By: Sean Hsu

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-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Testing Item:

6. Test Temperature: 85℃
7. Test Times: 48Hrs
8. Test Software: Windows 2000 / Run PassMark Burn In Test Pro 4.0
9. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6710)

Test Result:

No problem was found after the high temperature storage test.

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Low temperature storage test

Test Date: 08-23~24-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

Performed By: Sean Hsu

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-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Testing Item:

1. Test Temperature: -40℃
2. Test Times: 48Hrs
3. Test Software: Windows 2000 / Run PassMark Burn In Test Pro 4.0
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (AEC-6710)

Test Result:

No problem was found after the low temperature storage test.

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Humidity test

Test Date: 08-28~29-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

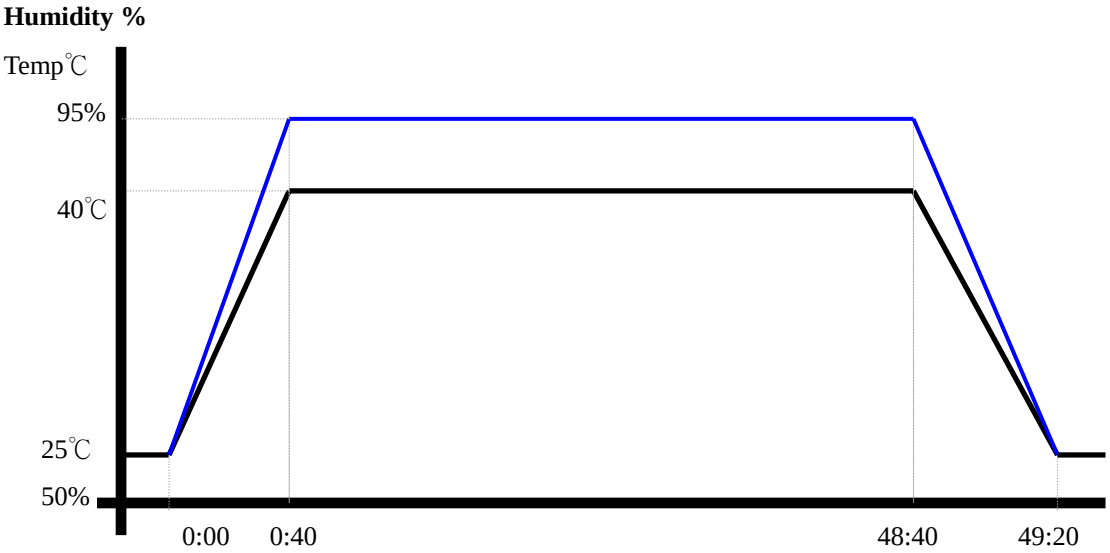
Performed By: Sean Hsu

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-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows 2000 / Run PassMark Burn In Test Pro 4.0
5. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (AEC-6710)

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

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Cold Start test

Test Date: 08-30-2006

Test Product: AEC-6710 (PFM-550S Rev: A1.0).

Test Site: AAEON QA Internal Lab.

Performed By: Sean Hsu

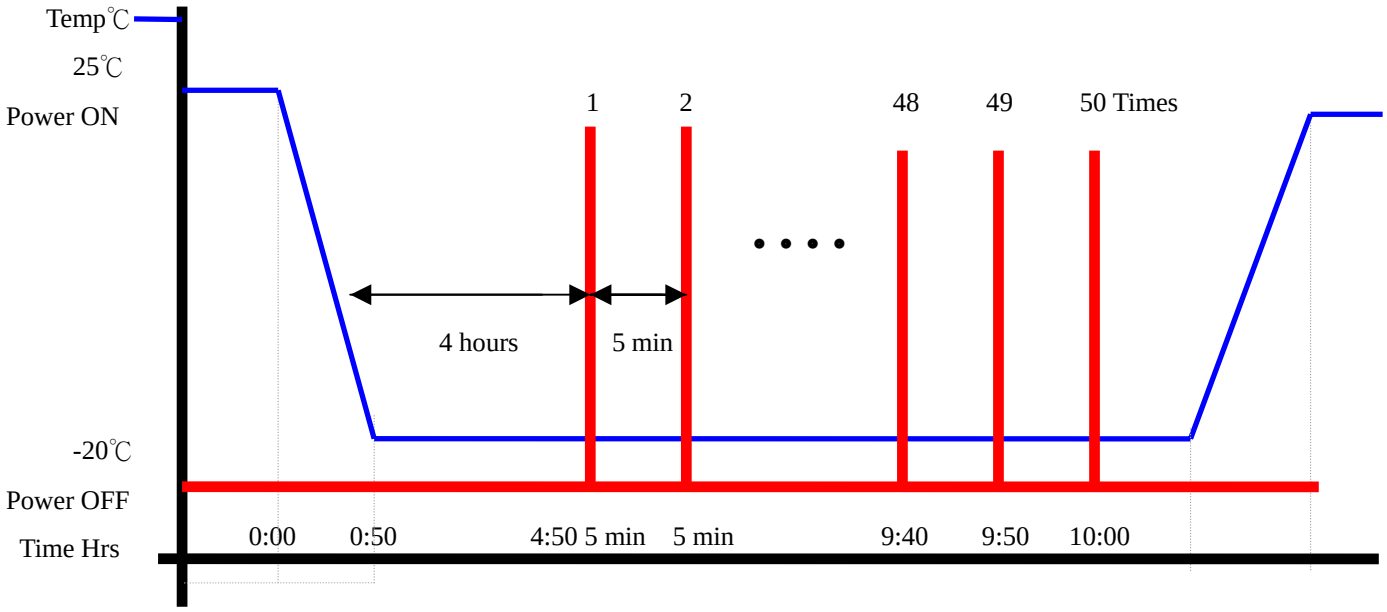
Test Standard: Reference IEC 68-2-1 Testing procedures
Test Ab: Cold Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D7S-100+1 N2
Date of Calibration: 12/14/05
Serial Number: 3898

Test Condition:

1. Test Temperature: -20℃
2. Test Times: 5 Hours or 50 times of ON/OFF
   (1) Power off for 4 hours before 1'st power on. Then once complete boot, power off immediately.
   (2) After 5 min later power on again and wait until booting is completed.
   (3) Repeat (2) for around 4:50
   (4) Power off then wait for 5 min before final power on operation.
3. Number of test: 50 times
4. Test Software: Windows 2000
5. Test Environment Curve:



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Cold Start test

Sample Configuration & Quantity Under Test:

Quantity: 1 (AEC-6710)

Test Result:

Passed.

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