FOX-121

With 2.5” SATA HDD

Environment Test Report

Report NO: 10P020009

Issued by:	Rex Chang	/	*08/26/2010*
	Test Engineer		**Date**
Reviewed by:	Jansin Lee	/	*08/26/2010*
	Sr. Manager		**Date**

Test item list

Testing Result

FOX-121STT:

Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Temperature variation operation test	Pass	
6	Cold start and hot start test	Pass	

FOX-121HTT:

Num	Test item list	Result	Remark
1	Temperature rise test	N/A	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Temperature variation operation test	Pass	
6	Cold start and hot start test	Pass	

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Configuration of EUT

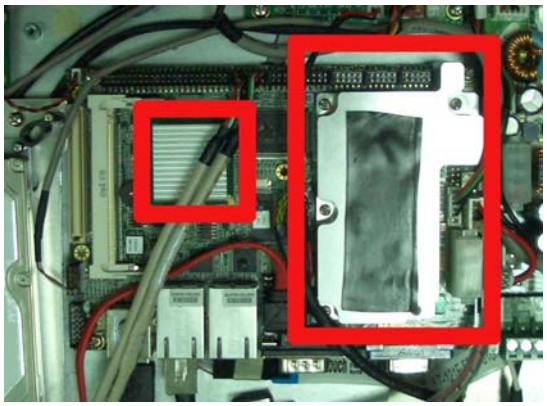
Sample 1:

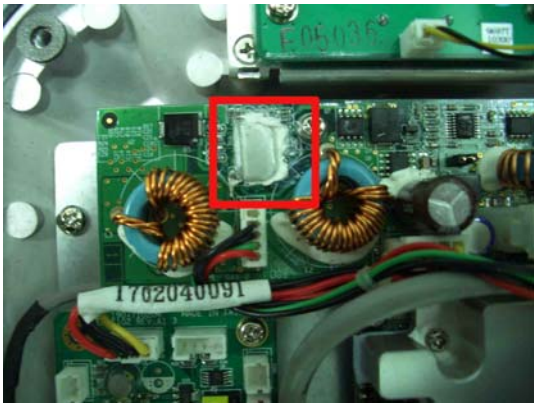
Num	Item	Spec
1.	Fanless Touch Panel	FOX-121STT
	1. LCD	MITSUBISHI.AA121X01.LVS 18&24bits.1000 nits
	2. Main Board	AAEON GENE-9455 Rev. A1.0 (BIOS Ver: 0.41)
	3. CPU	Intel Atom N270 / 1.6GHz
	4. Memory	DSL 1GB * 1 / DDR2 667 / ELPIDA E5108AJBG-6E-E
	5. Industrial SATA HDD	Seagate ST989017SM / 80GB
	6. Power Board	Power Board.P02D.Rev.A1.1.for ATX mode
	7. Test Software	Windows XP / Run PassMark Burn In Test 5.1 Pro
2.	Adapter	MPU100-108 (OUTPUT 24V/4.16A)

Sample 2:

Num	Item	Spec
1.	Fanless Touch Panel	FOX-121HTT
	1. LCD	AUO.G121XN01 V0.LVDS 18&24Bits.500 nits
	2. Main Board	AAEON GENE-9455 Rev. A1.0 (BIOS Ver: 0.41)
	3. CPU	Intel Atom N270 / 1.6GHz
	4. Memory	DSL 1GB * 1 / DDR2 667 / ELPIDA E5108AJBG-6E-E
	5. Industrial SATA HDD	Seagate ST989017SM / 80GB
	6. Power Board	Power Board.P02D.Rev.A1.1.for ATX mode
	7. Test Software	Windows XP / Run PassMark Burn In Test 5.1 Pro
2.	Adapter	MPU100-108 (OUTPUT 24V/4.16A)

Heat Sink





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Temperature rise test

Test Date: 08-24-2010

Test Product: FOX-121STT

Test Site: AAEON QE 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: 12/08/09
Serial Number: 12A323190

Test Condition:

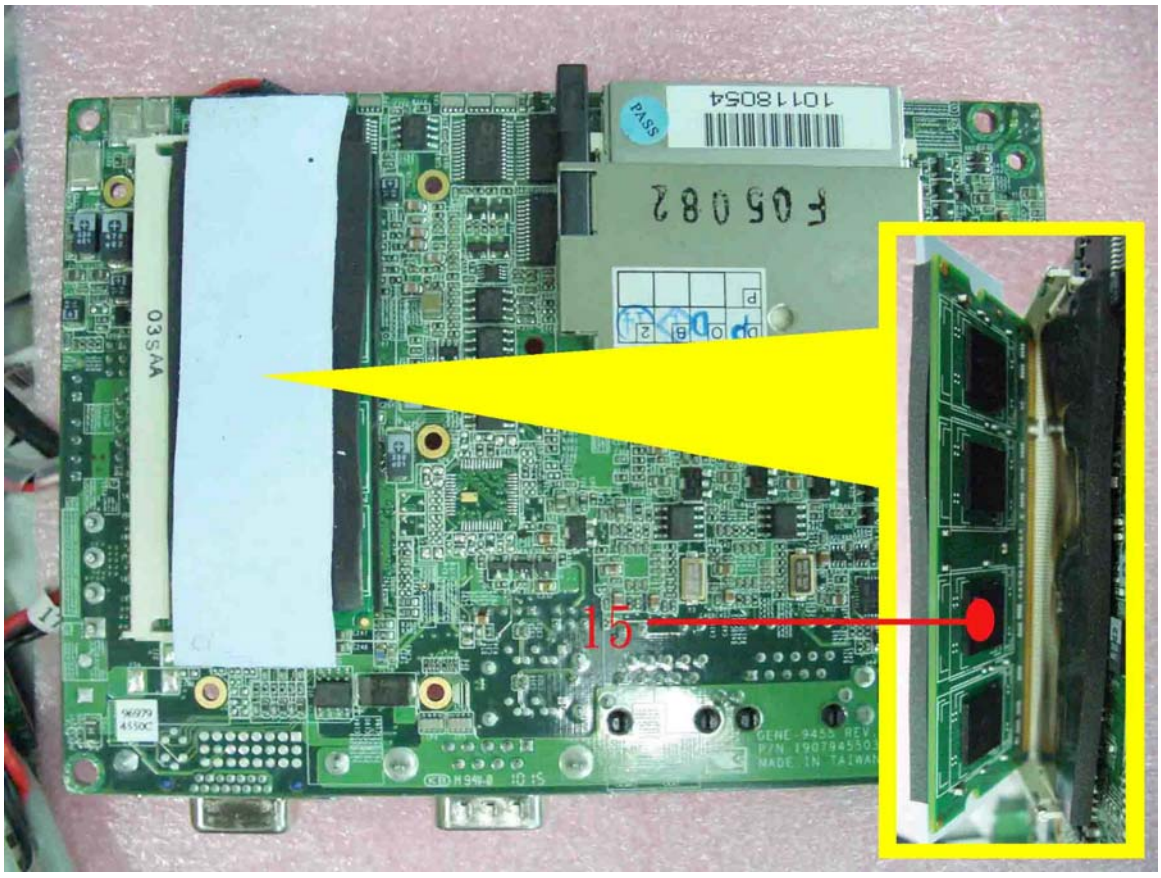
Ambient temperature: 50℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows XP / Run PassMark Burn In Test 5.1 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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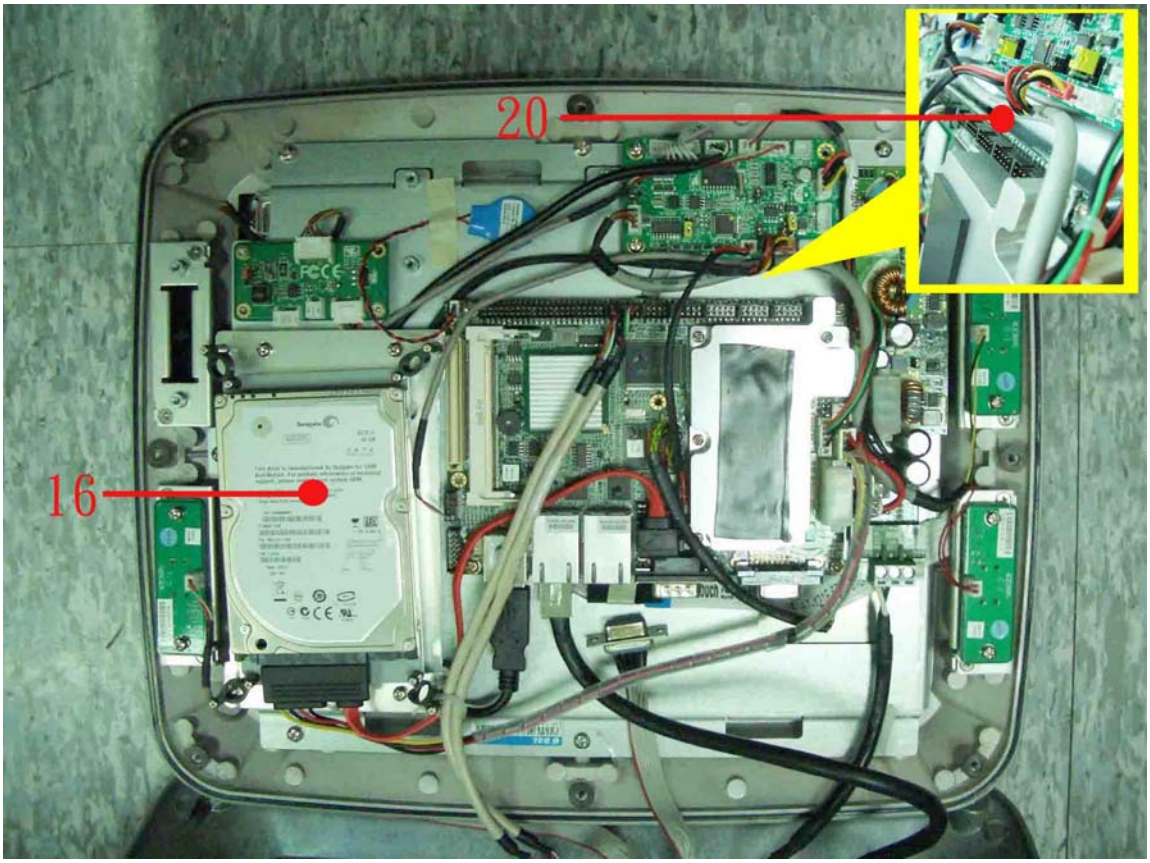
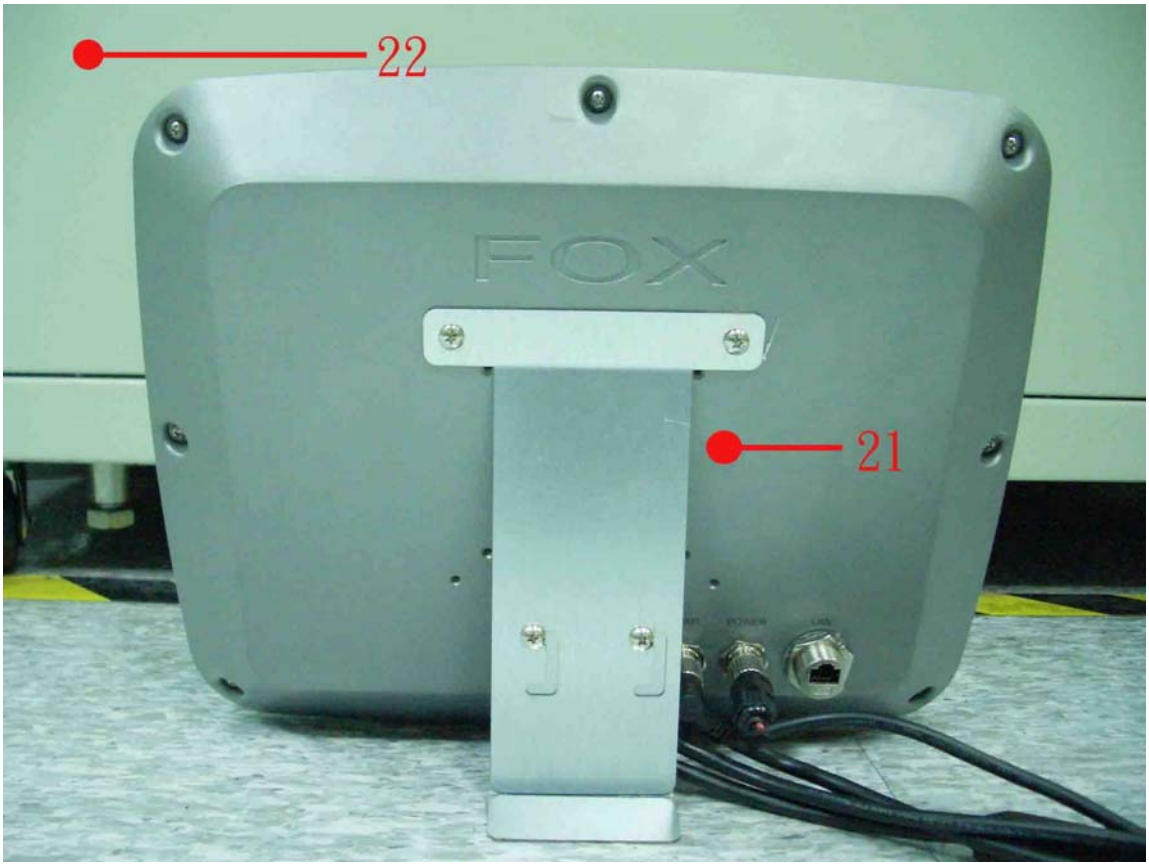
Temperature rise test





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Temperature rise test

Thermal profile data:

FOX-121STT

Point / Temp. Stage(℃)	Spec	55	25
GENE-9455 A1.0-A			
1. CPU	90	84.9	54.9
2. U13 - (TF) Intel 945GSE Express Chipset.Intel.QG82945GSE SLB2R	105	81.3	48.3
3. U4 - (TF) Chipset ICH7M.Intel.NH82801GBM SL8YB	99	91.2	61.2
4. U9 - (TF) Super I/O w/4 COMs.ITE.IT8781F/AX-L	100	90.1	60.1
5. U3 - (TF) CLOCK GENERATOR.IDT.9LPRS501PGLF	100	91.3	61.3
6. U7 - (TF) GigaBit Ethernet Chipset.Intel.WG82574L	109	86.2	56.2
7. U17 - (TF) PWR. N-Channel.30V.12A.ANPEC.APM4410KC-TRL	125	92.1	62.1
8. L8 - (TF) COIL.GOTREND.GSTC063P-2R2MN	150	84.1	54.1
9. U19 - (TF) PWR.DirectFET MX.N-MOSFET.IR.IRF6628TRPBF	125	95.0	65.0
10. L7 - (TF) COIL.GOTREND.GSTC063P-1R5MN	150	79.2	49.2
11. U46 - (TF) 6 Channel AC'97 Audio Codec.REALTEK.ALC655-LF	100	88.3	58.3
12. U40 - (TF) Low Dropout Regulator.Adj(1.2~4.8V).SEMTECH.SC1565IS-TRT	115	91.3	61.3
13. U50 - (TF) PWR.DirectFET MX.N-MOSFET.IR.IRF6628TRPBF	125	88.2	58.2
14. U20 - (TF) PWR.DirectFET MX.N-MOSFET.IR.IRF6628TRPBF	125	97.9	67.9
15. Industrial Memory	95	85.6	55.6
16. Industrial HDD	85	80.6	50.6
Power Board.P02D.Rev.A1.1			
17. U2 - (TF) Regulator. Vin 3.5-36V.LINEAR.LTC3728EUH#PBF	100	93.2	63.2
18. Q7 - (TF) PWR. N-Channel 30V MOSFET.VISHAY.SI4410BDY-T1-E3	125	92.6	62.6
19. U1 - (TF) PWR. MOSFET.LINEAR-TECHNOLOGY.LTC1778EGN	100	90.6	60.6
20. Control Box Inside Air Temperature	N/A	71.2	41.2
21. Control Box External Surface	N/A	68.8	38.8
22. Chamber Air Temperature	N/A	54.8	24.8
Any Tm value showed in red words which meaning the value over the Tc degree C of this device specification.			

Temperature Measurement Table:

T_A=55.0℃ / Location	**Temp. Rise (Thermal Couple)**	**SpeedFan 4.31 (Read from BIOS)**
CPU	84.9℃	87.0℃
System Temp. 1 (North Bridge)	81.3℃	85.0℃
System Temp. 2	N/A	82.0℃

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Temperature rise test

Sample Configuration & Quantity Under Test:

Quantity: 1 (FOX-121STT)

Test Result:

No problem was found during the temperature rise operation test.

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Temperature cycle test

Test Date: 08-20~23-2010

Test Product: FOX-121STT, FOX-121HTT

Test Site: AAEON QE Internal Lab.

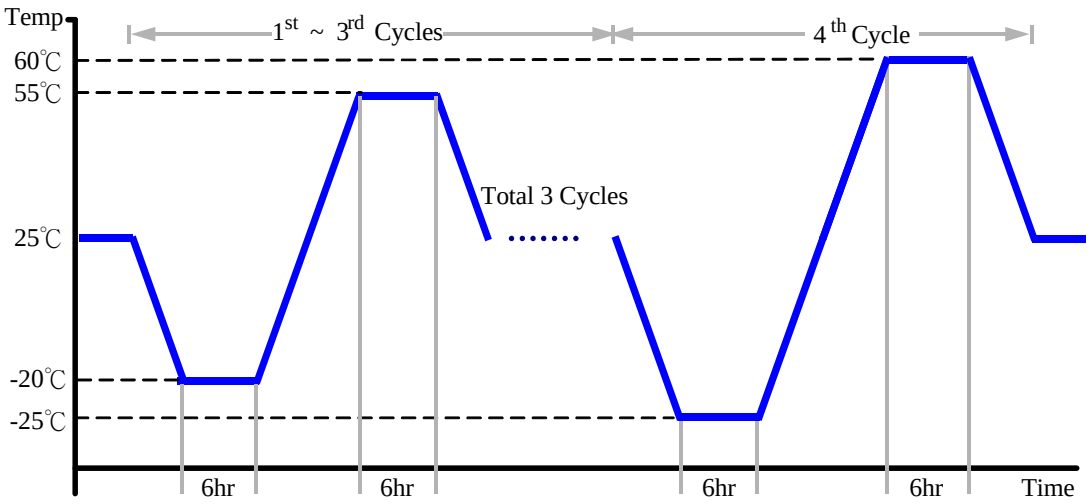
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/06/10
Serial Number: 1241

Test Condition:

1. Test Low Temperature: -20℃ (1~3 cycles)
   -25℃ (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: 2 (FOX-121STT, FOX-121HTT)

Test Result:

FOX-121STT:

No problem was found during the temperature operation cycle test.

FOX-121STT:

No problem was found during the temperature operation cycle test.

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High temperature storage test

Test Date: 08-11~13-2010

Test Product: FOX-121STT, FOX-121HTT

Test Site: AAEON QE Internal Lab.

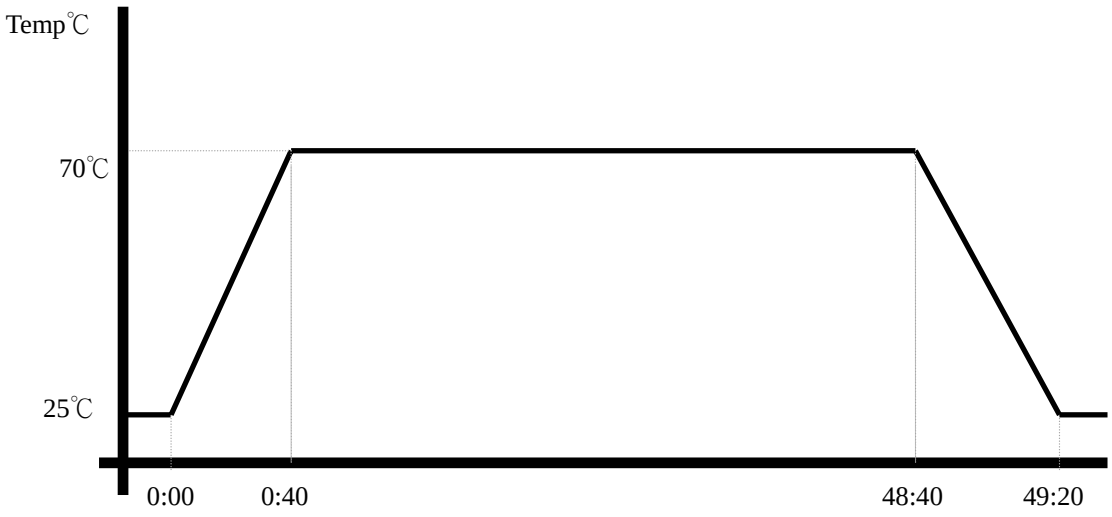
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/06/10
Serial Number: 1241

Testing Item:

1. Test Temperature: 70℃
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: 2 (FOX-121STT, FOX-121HTT)

Test Result:

FOX-121STT:

No problem was found after the high temperature storage test.

FOX-121HTT:

No problem was found after the high temperature storage test.

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Low temperature storage test

Test Date: 08-16~18-2010

Test Product: FOX-121STT, FOX-121HTT

Test Site: AAEON QE 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: 05/06/10
Serial Number: 1241

Testing Item:

1. Test Temperature: -20℃
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: 2 (FOX-121STT, FOX-121HTT)

Test Result:

FOX-121STT:

No problem was found after the low temperature storage test.

FOX-121HTT:

No problem was found after the low temperature storage test.

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Humidity test

Test Date: 08-13~16-2010

Test Product: FOX-121STT, FOX-121HTT

Test Site: AAEON QE Internal Lab.

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

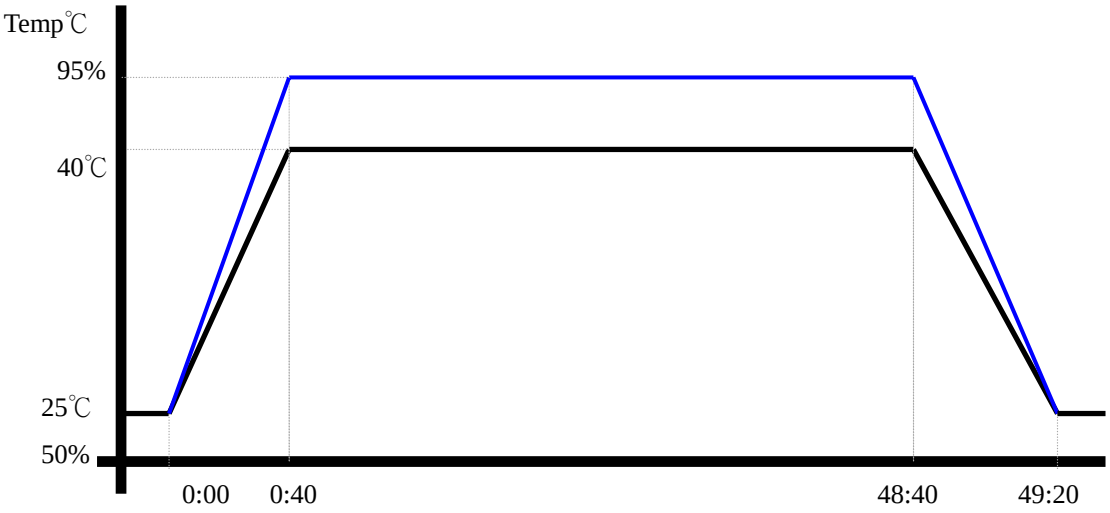
Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4L+-100
Date of Calibration: 05/06/10
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: 2 (FOX-121STT, FOX-121HTT)

Test Result:

FOX-121STT:
No problem was found after the humidity storage test.

FOX-121HTT:
No problem was found after the humidity storage test.

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Cold start and hot start test

Test Date: 08-19~20-2010

Test Product: FOX-121STT, FOX-121HTT

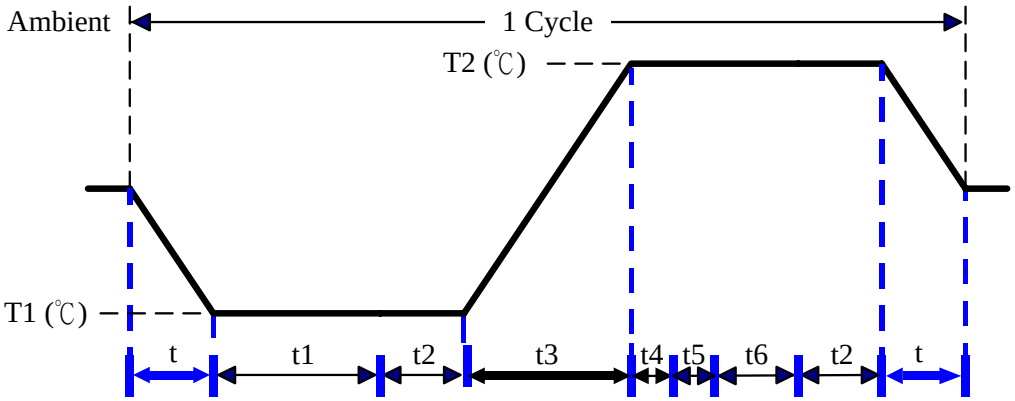
Test Site: AAEON QE Internal Lab.

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: 05/06/10
Serial Number: 1241

Test Condition:



Parameters	Description
T1	-25℃
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 PassMark Burn In Test
t5: Win XP Software restart test 3 times
Test Software:Windows XP

Test Result:

FOX-121STT:

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

FOX-121HTT:

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

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