GCS-1100I

Environment Test Report

Report NO: 10I020011

Issued by:	Rex Chang	/	*08/13/2010*
	Test Engineer		**Date**
Reviewed by:	Jansin Lee	/	*08/13/2010*
	Sr. Manager		**Date**

Test item list

Testing Result

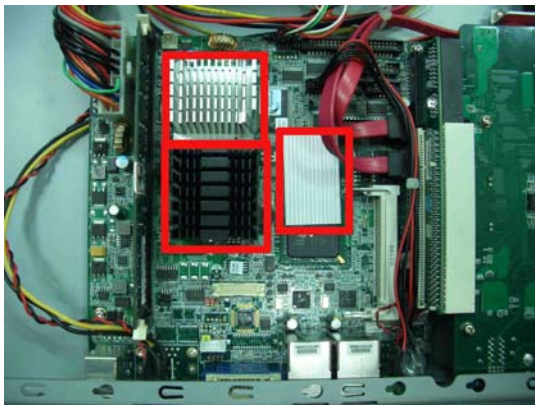
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Temperature variation operation test	Pass	
6	Cold start and hot start test	Pass	

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Configuration of EUT

Num	Item	Spec
1.	Rack Mount Chassis:	GCS-1100I
	1. Main Board	AAEON EMB-9459T Rev. B1.0 (BIOS Ver: 1100i 0.1)
	2. CPU	Intel Atom N270 / 1.6GHz
	3. Memory	DSL 1GB * 1 / DDR2 533 / ELPIDA E5108AGBG-6E-E
	4. 2.5” SATA SSD	Transcend TS32GSSD25S-S / 32GB
	5. Test Software	Windows XP / Run PassMark Burn In Test 4.0 Pro
	6. DC Power	CSC MPD-807H
2.	Power Adapter	FSP FSP084-DMAA1

Heat Sink



AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Test Date: 08-12-2010

Test Product: GCS-1100I

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:

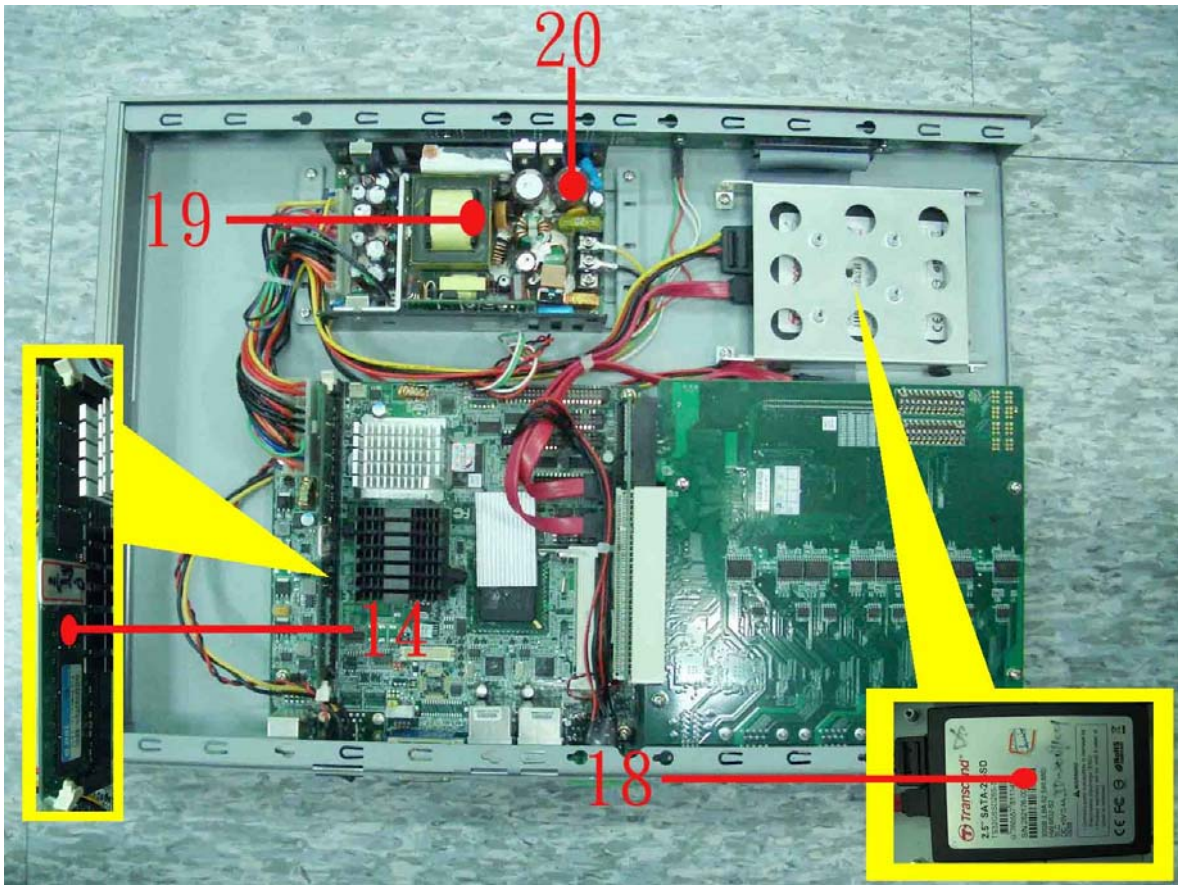
Ambient temperature: 45℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows XP / Run PassMark Burn In Test 4.0 Pro

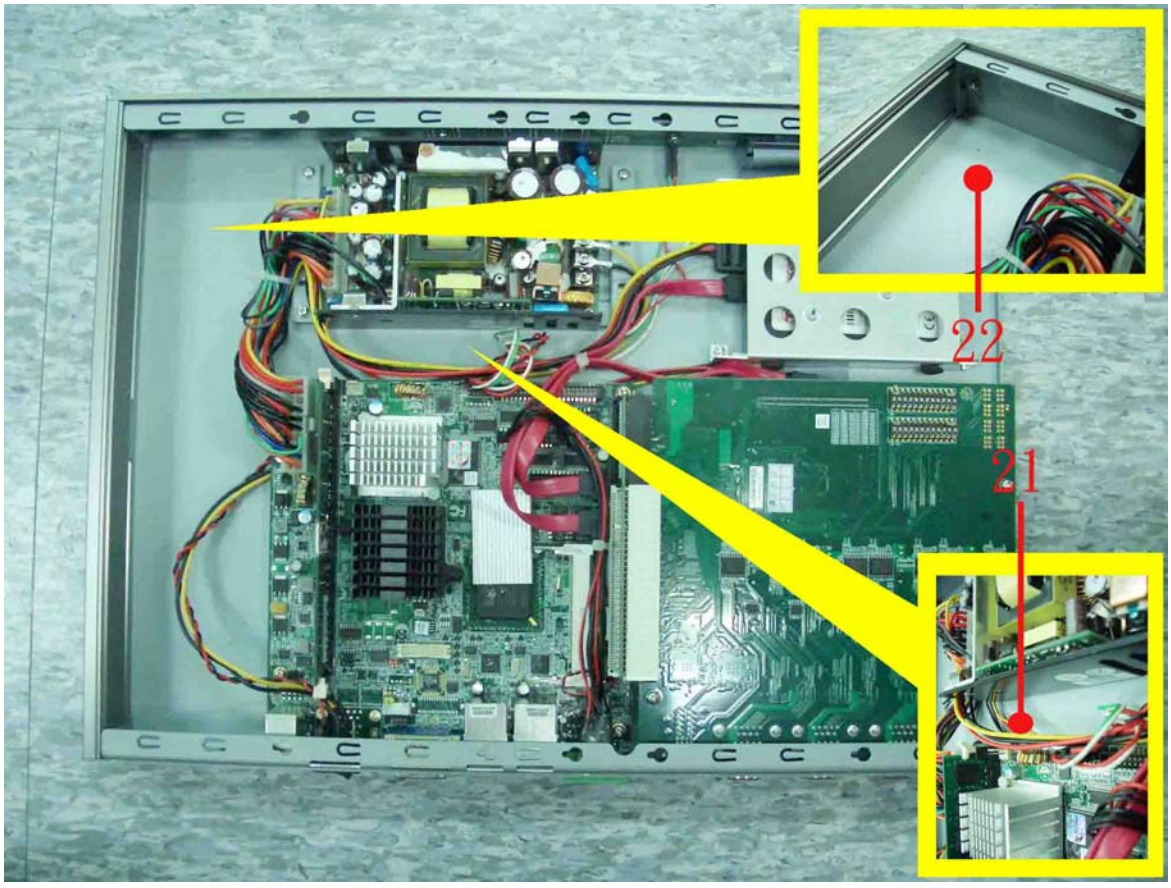
Terminal Recorder:

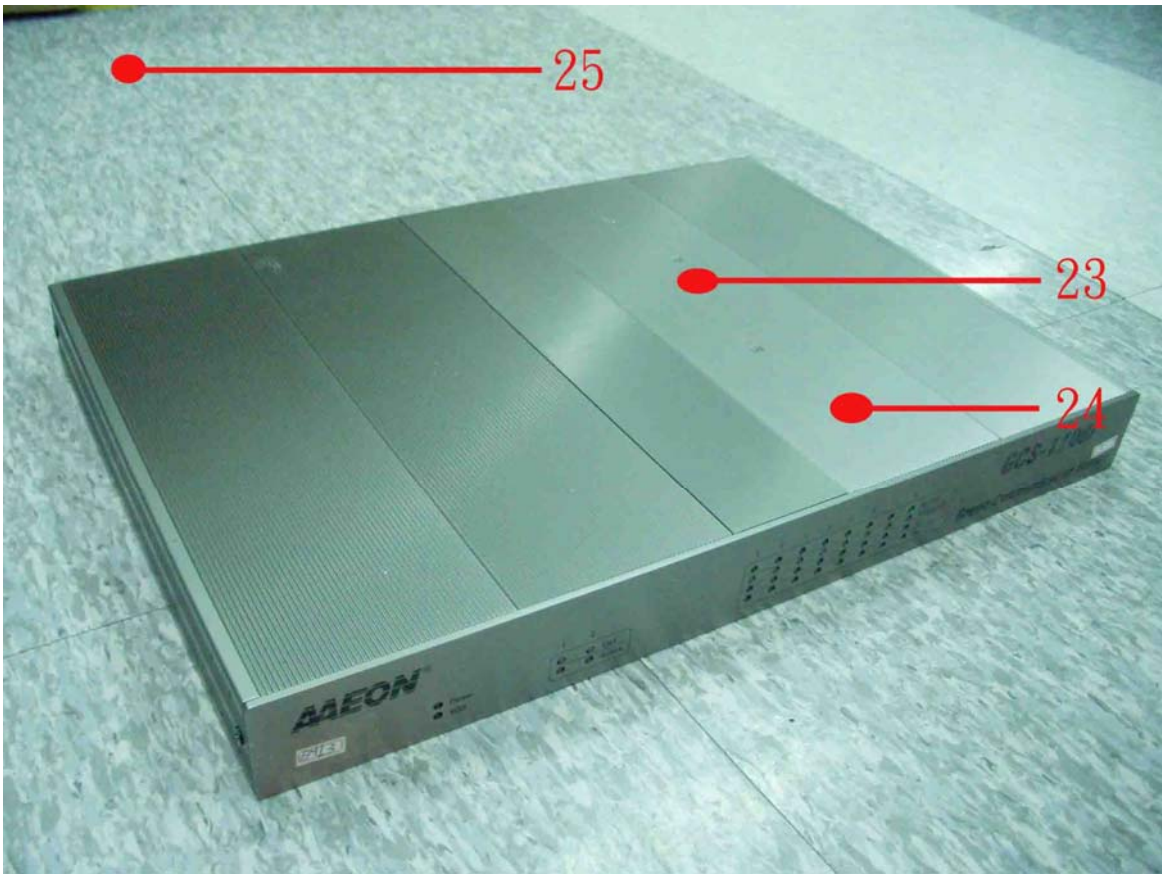
Measuring Thermal Couple Position：



AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test





AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Thermal profile data:

GCS-1100I

Point / Temp. Stage(℃)	Spec	45	25
EMB-9459T			
01. U38 - (TF) Intel CPU.Diamondville.N270.1.6GHz/FSB	90	88.9	68.9
02. U30 - (TF) Chipset.Intel.QG82945GSE SLB2R	105	85.2	65.2
03. U28 - (TF) Chipset ICH7M.Intel.NH82801GBM SL8YB	99	95.0	75.0
04. U33 - (TF) CLOCK GENERATOR.ICS.ICS954226AGLF	115	88.5	68.5
05. U35 - (TF) Super I/O.ITE.IT8712F/KX-L	95	79.5	59.5
06. U10 - (TF) DVI Transmitter.CHRONTEL.CH7307C-DEF	110	70.4	50.4
07. U18 - (TF) Ethernet Chip.REALTEK.RTL8111C-VB-GR	95	71.2	51.2
08. U17 - (TF) Ethernet Chip.REALTEK.RTL8111C-VB-GR	95	71.2	51.2
09. U52 - (TF) Synchronous Buck PWM.DC-DC Controller.Fiti.FP6321ASOPTR	125	70.9	50.9
10. L66 - (TF) Coil. GOTREND.C4452P-08A09YDPS	110	73.5	53.5
11. Q69 - (TF) PWR.DPAK. N-Channel MOSFET.ST.STD17NF03LT4	100	70.3	50.3
12. L58 - (TF) COIL.GOTREND.GSTC063P-1R5MN	125	73.6	53.6
13. U53 - (TF) DDR1/2/3 Memory Power Supply.Semtech.SC488MLTRT	125	74.2	54.2
14. Memory	95	75.1	55.1
PER-T167			
15. U100- (TF) Octal-UARTs.SystemBase.SB16C1058PCI	85	58.3	38.3
16. U3 - (TF) PCI-express.Gigabit Ethernet Chip.REALTEK.RTL8111C-VB-GR	85	62.4	42.4
17. U1 - (TF) PCI-express.Gigabit Ethernet Chip.REALTEK.RTL8111C-VB-GR	85	62.8	42.8
18. SATA SSD Surface	70	60.2	40.2
Power Supply			
19. T1	110	66.8	46.8
20. C3	105	60.7	40.7
21. Control Box Inside Air Temperature - 1 (Power Temp. Ambient)	N/A	61.3	41.3
22. Control Box Inside Air Temperature - 2	N/A	53.4	33.4
23. Control Box External Surface - 1	N/A	55.1	35.1
24. Control Box External Surface - 2	N/A	54.4	34.4
25. 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.			

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature rise test

Temperature Measurement Table:

Location / T_A=45.0℃	Temp. Rise (Thermal Couple)	SpeedFan 4.31 (Read from BIOS)
CPU	88.7℃	80.0℃
System Temp. 1 (South Bridge)	95.0℃	84.0℃
System Temp. 2	N/A	70.0℃

Sample Configuration & Quantity Under Test:

Quantity: 1 (GCS-1100I)

Test Result:

No problem was found during the temperature rise operation test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Temperature cycle test

Test Date: 07-30-2010 ~ 08-02-2010

Test Product: GCS-1100I

Test Site: AAEON QE Internal Lab.

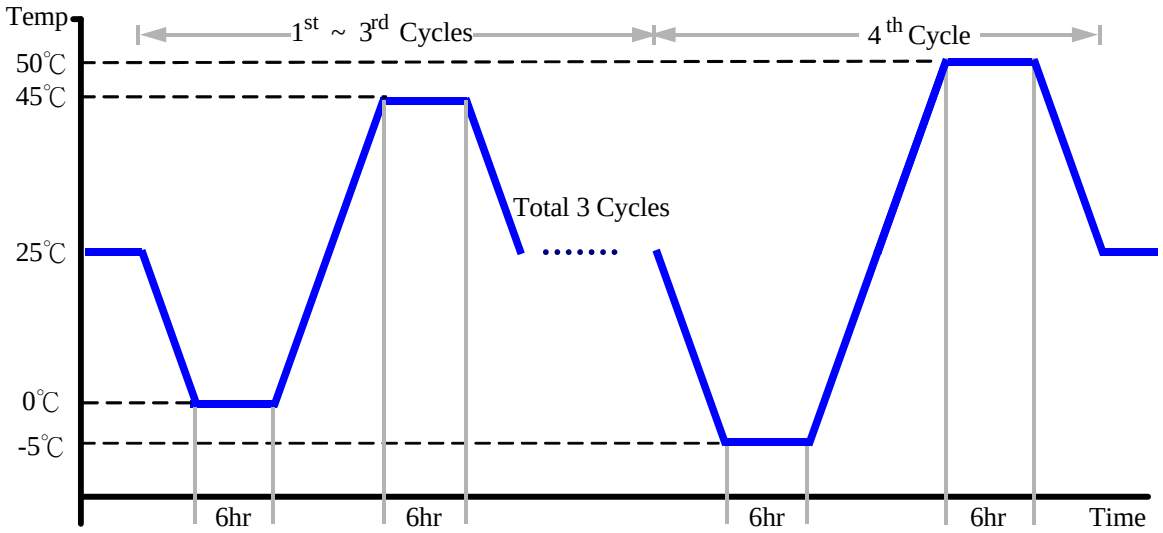
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

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: 0℃ (1~3 cycles)
   -5℃ (4^{th} cycle)
2. Test High Temperature: 45℃ (1~3 cycles)
   50℃ (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 (GCS-1100I)

Test Result:

No problem was found during the temperature operation cycle test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

High temperature storage test

Test Date: 08-09~11-2010

Test Product: GCS-1100I

Test Site: AAEON QE Internal Lab.

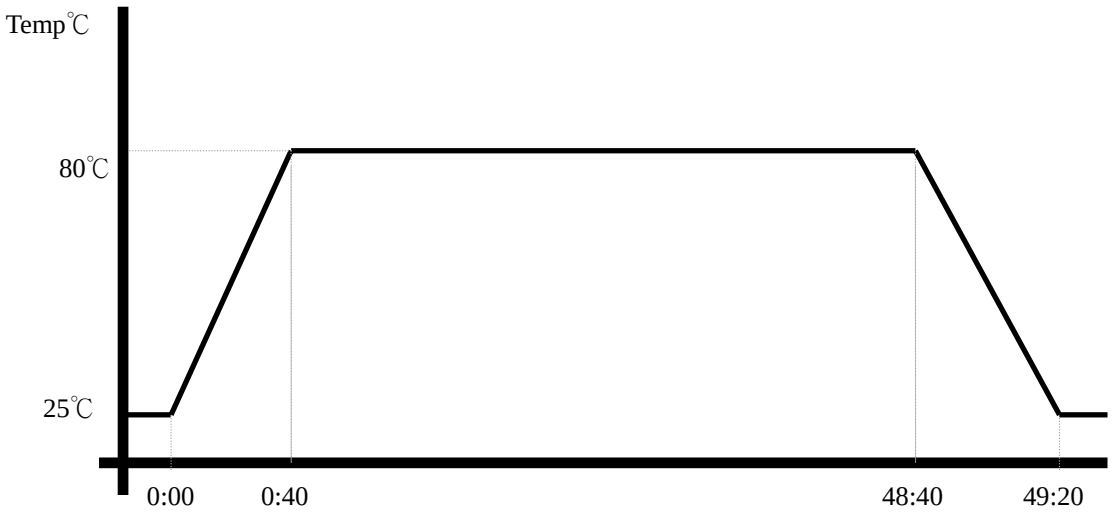
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

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: 80℃
2. Test Times: 48Hrs
3. Test Software: Windows XP / Run PassMark Burn In Test 4.0 Pro
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (GCS-1100I)

Test Result:

No problem was found after the high temperature storage test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Low temperature storage test

Test Date: 08-04~06-2010

Test Product: GCS-1100I

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 4.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (GCS-1100I)

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

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Humidity test

Test Date: 08-06~09-2010

Test Product: GCS-1100I

Test Site: AAEON QE Internal Lab.

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

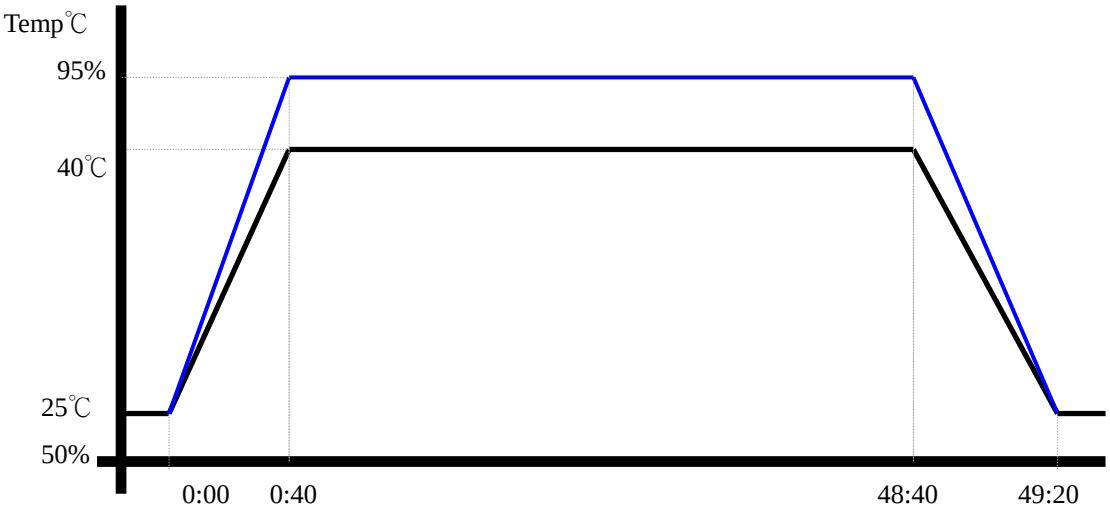
Test Equipment:

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 4.0 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (GCS-1100I)

Test Result:

No problem was found after the humidity storage test.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw

Cold start and hot start test

Test Date: 08-02~03-2010

Test Product: GCS-1100I

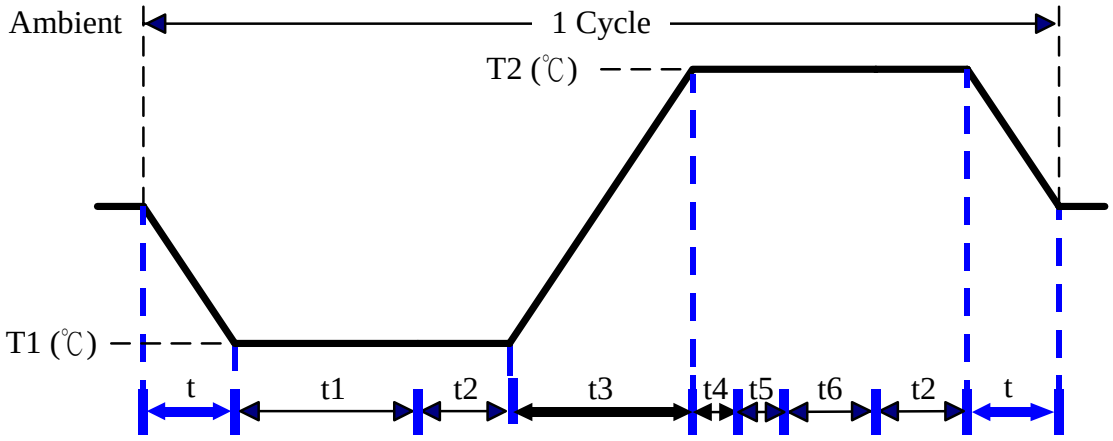
Test Site: AAEON QE Internal Lab.

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	-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.

AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1056
http://www.aaeon.com.tw