AHP-2176

(With 2.5” SATA HDD)

Environment Test Report

Report NO: 12P020011

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: 1. There are two temperature points marginal passed, the function is normal, hope to get improvement for the next generation.** **2. Under PassMark Burn In Test 7.0 Pro, COM port baud rate 115200 test fail COM3, COM4 fail (COM port detected a Receive Overrun Error), but change to 9600 test pass.**

Issue date	Approval	Test Engineer
2012-07-10	Tom Lin	Rex Chang

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	Humidity test	Pass	
6	Cold start and hot start test	Pass	

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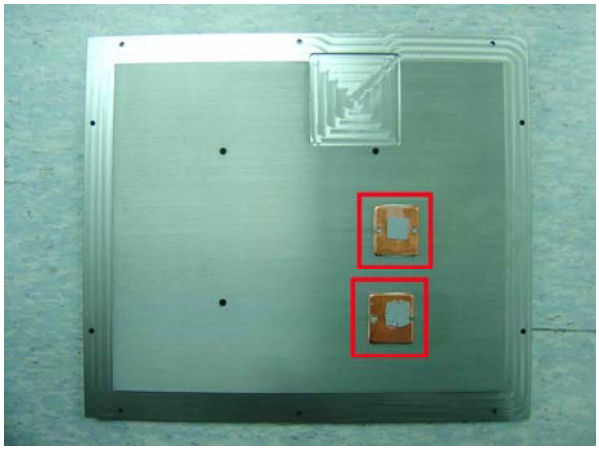
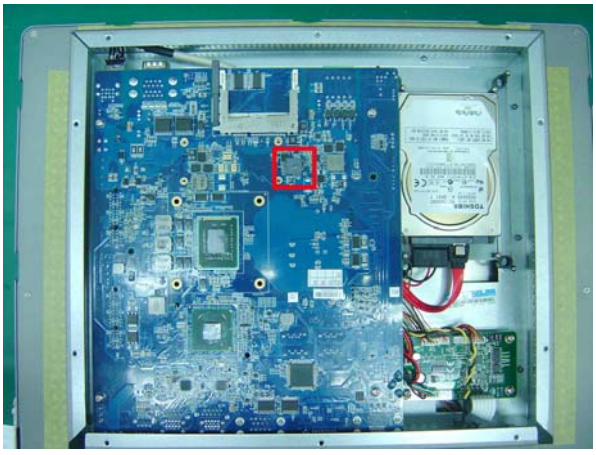
Configuration of EUT

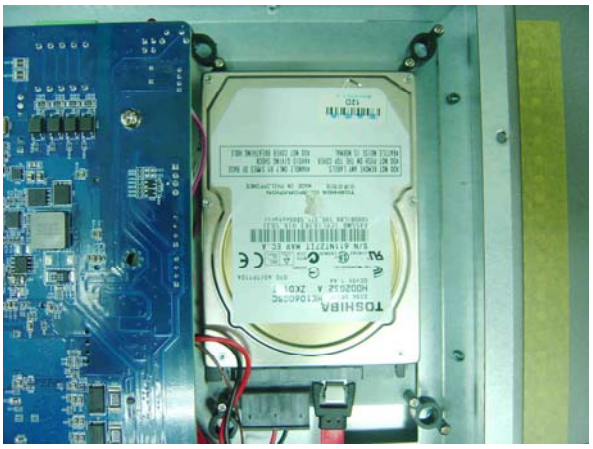
Num	Item	Spec
1.	**17” Panel PC**:	AHP-2176
	1. 17” LCD	TFT LCD. AUO.G170EG01 V1.1280x1024.350nits. LED backlight
	2. Main Board	PBA-QM67 A0.3
	3. BIOS Ver.	AHP-2176 R0.1(2176AM01) (04/12/2012)
	4. CPU	Intel® Celeron 827E / 1.4GHz
	5. Memory	DSL / Hynix H5TQ2G83CFR H9C / DDR3 1333 / 2GB
	6. Industrial HDD	TOSHIBA MK1060GSC / 100GB / 2.5” SATA HDD
	7. Test Software	Windows 7 / Run PassMark Burn In Test 7.0 Pro
2.	**AC Adapter**	FSP. FSP120-AAB

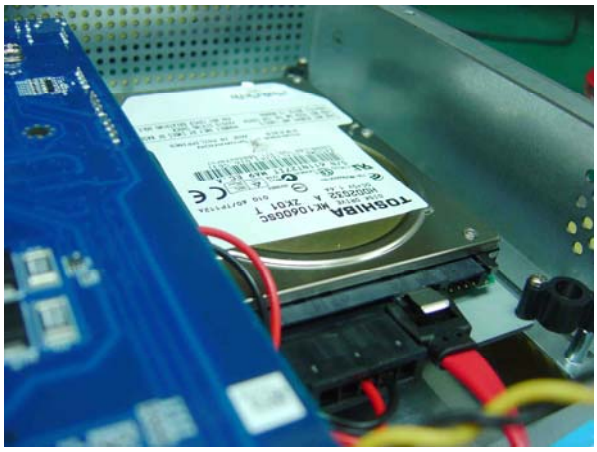
Heat Sink





HDD Kit





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Temperature rise test

Test Date: 07-09-2012

Test Product: AHP-2176

Test Site: AAEON QE Dept.

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

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 10/12/11
Serial Number: 12A323190

Test Condition:

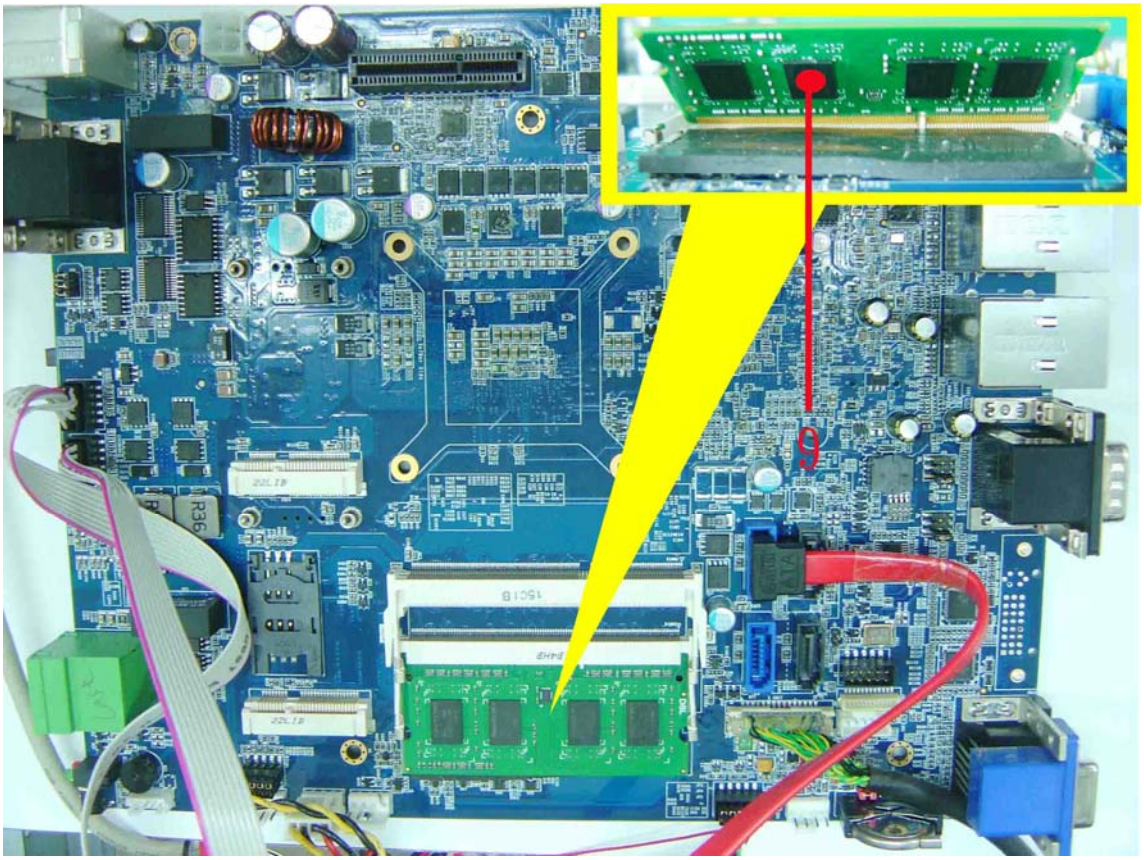
Ambient temperature: 60℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

Windows 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

Measuring Thermal Couple Position：



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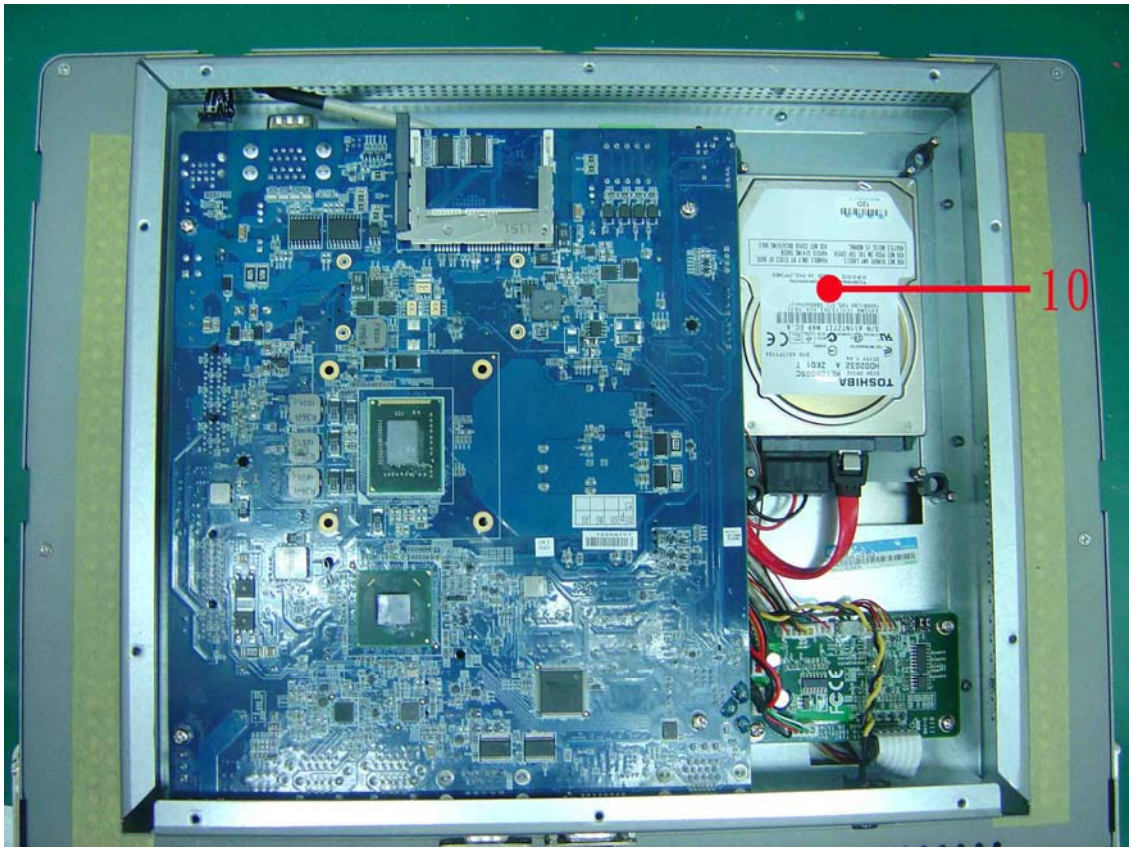
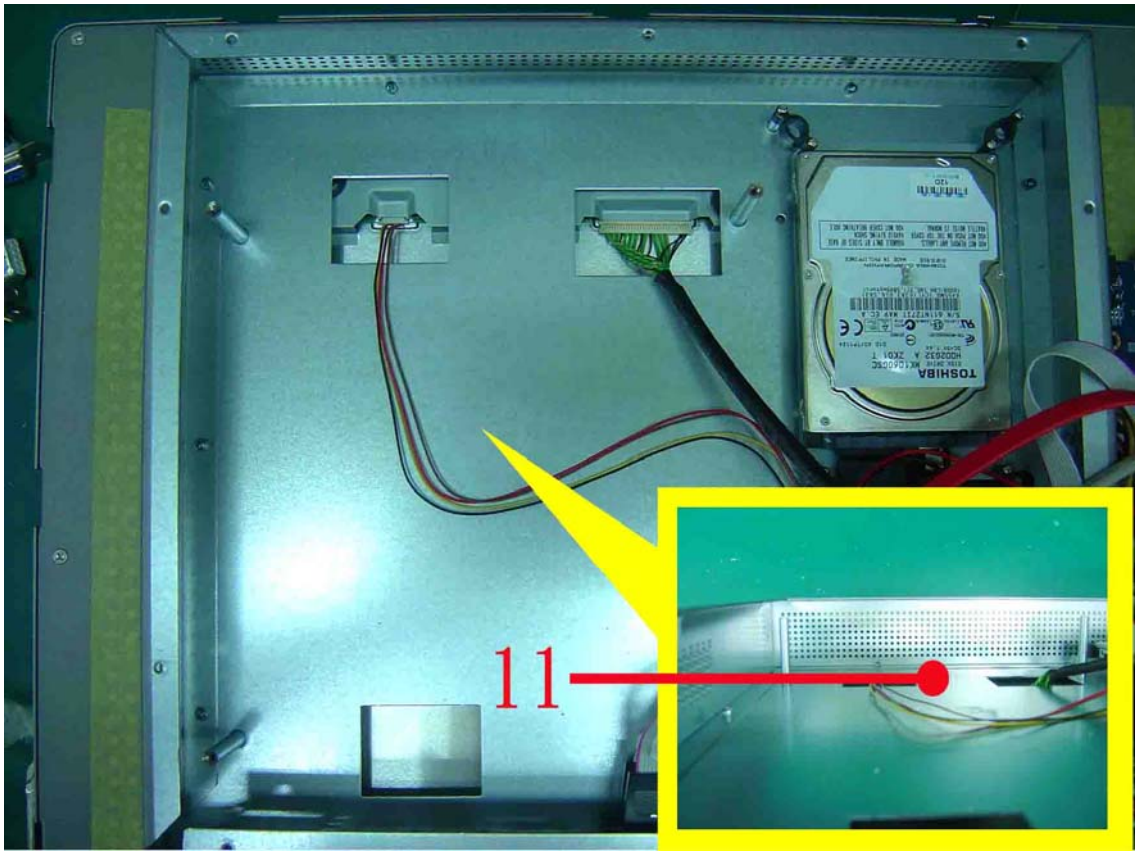
Temperature rise test





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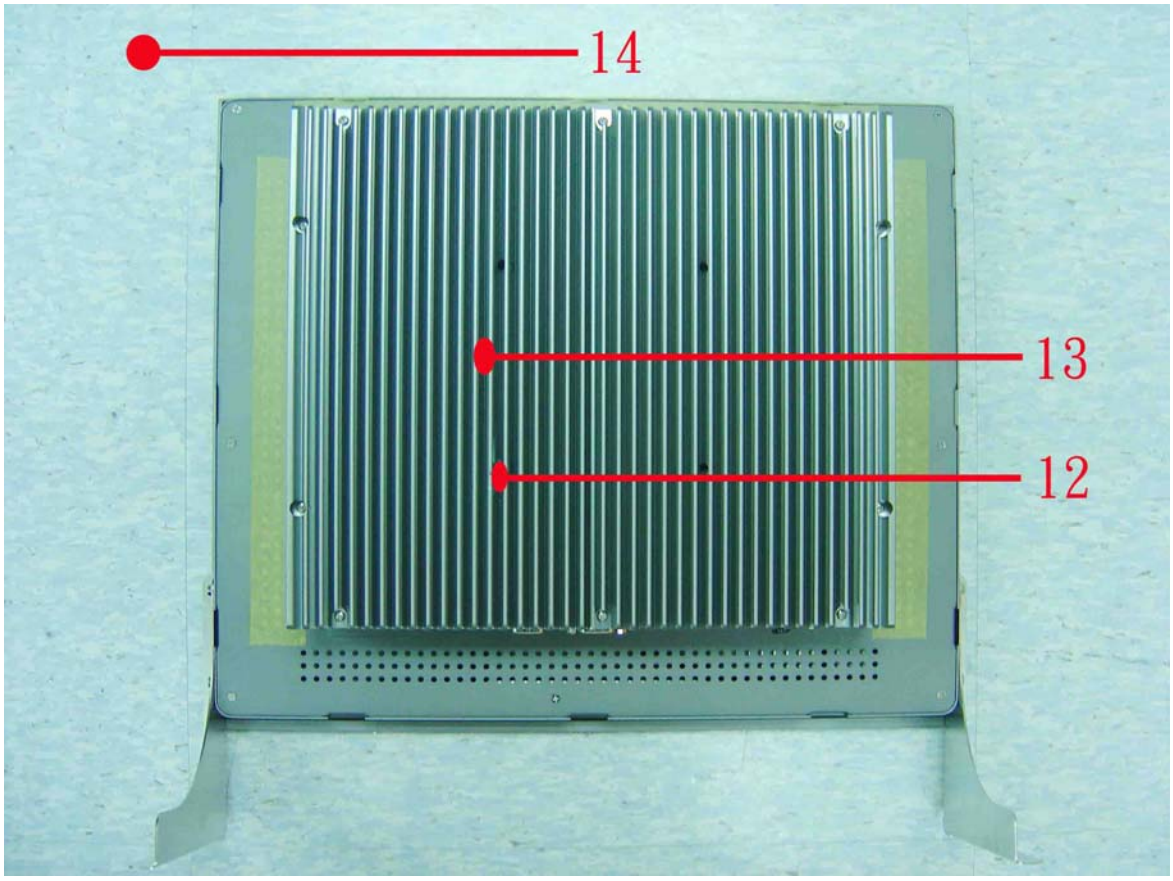

AHP-2176

Point / Temp. Stage(℃)	Spec	60	Note
PBA-QM67 A0.3			
01. U1 - (TF)Intel CPU.Sandy Bridge.1.4GHz. Celeron 827E	100	86.2	
02. U4 - (TF) Chipset PCH.INTEL.BD82QM67 SLJ4M	108	76.5	
03. L24 - (TF)COIL. Panasonic.ETQP4LR36AFC	130	86.8	
04. U90 - (TF)IC.SMD.8P.SO8.16V/500mA.LDO Regulator.MICREL.MIC5209YM	100	90.6	
05. U63 - (TF)REG.SO-8.5A Ultra Low Dropout.Linear Regulator.APEC.APE8955MP	100	96.2	**Note4**
06. L19 - (TF)COIL. ZenithTek.ZPWM-1040MA-R36M	125	104.3	
07. Q55 - (TF)PWR. PMPAK5X6 N-MOSFET. APEC.AP0503GMT-HF	125	86.2	
08. U8 - (TF) 7.1+2 Channel High Definition.Audio Codec.REALTEK.ALC892-GR	100.5	85.5	
09. Memory	95	82.4	
10. HDD	85	82.2	**Note4**
11. Control Box Inside Air Temperature	N/A	77.2	
12. Control Box External Surface - 1	N/A	73.8	
13. Control Box External Surface - 2	N/A	74.3	
14. Chamber Air Temperature	N/A	60.1	

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Temperature rise test

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.
- **Margin Pass** : Tc > Tm > Tc-5℃; The measured value is within specification with margin.
  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. P120304QED12

Temperature Measurement Table:

Location \ **T_A=60.1℃**	**Temp. Rise (Thermal Couple)**	**SpeedFan 4.46 (Read from BIOS)**	
CPU	86.3℃	Core 0	95℃

Sample Configuration & Quantity Under Test:
Quantity: 1 (AHP-2176)

Test Result:
No problem was found during the temperature rise test.

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Temperature cycle operation test

Test Date: 07-06~09-2012

Test Product: AHP-2176

Test Site: AAEON QE Dept.

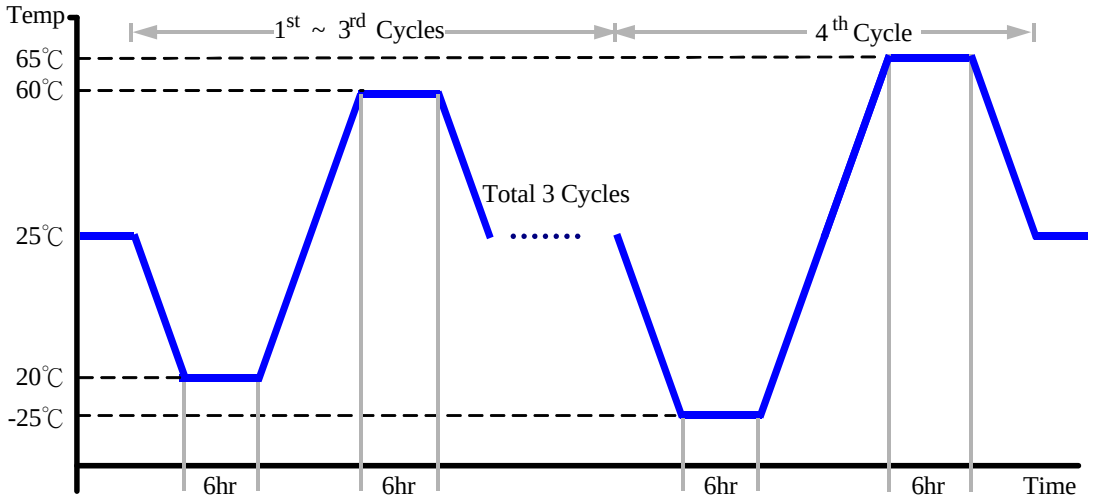
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4H+-100
Date of Calibration: 10/13/11
Serial Number: 2582

Test Condition:

1. Test Low Temperature: -20℃ (1~3 cycles)
   -25℃ (4^{th} cycle)
2. Test High Temperature: 60℃ (1~3 cycles)
   65℃ (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 (AHP-2176)

Test Result:

No problem was found during the temperature operation cycle test.

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High temperature storage test

Test Date: 07-03 ~ 05-2012

Test Product: AHP-2176

Test Site: AAEON QE Dept.

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-D4H+-100
Date of Calibration: 10/13/11
Serial Number: 2582

Testing Item:

1. Test Temperature: 70℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-2176)

Test Result:

No problem was found after the high temperature storage test.

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Low temperature storage test

Test Date: 07-01~03-2012

Test Product: AHP-2176

Test Site: AAEON QE Dept.

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-D4H+-100
Date of Calibration: 10/13/11
Serial Number: 2582

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-2176)

Test Result:

No problem was found after the low temperature storage test.

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Humidity test

Test Date: 06-28 ~ 30-2012

Test Product: AHP-2176

Test Site: AAEON QE Dept.

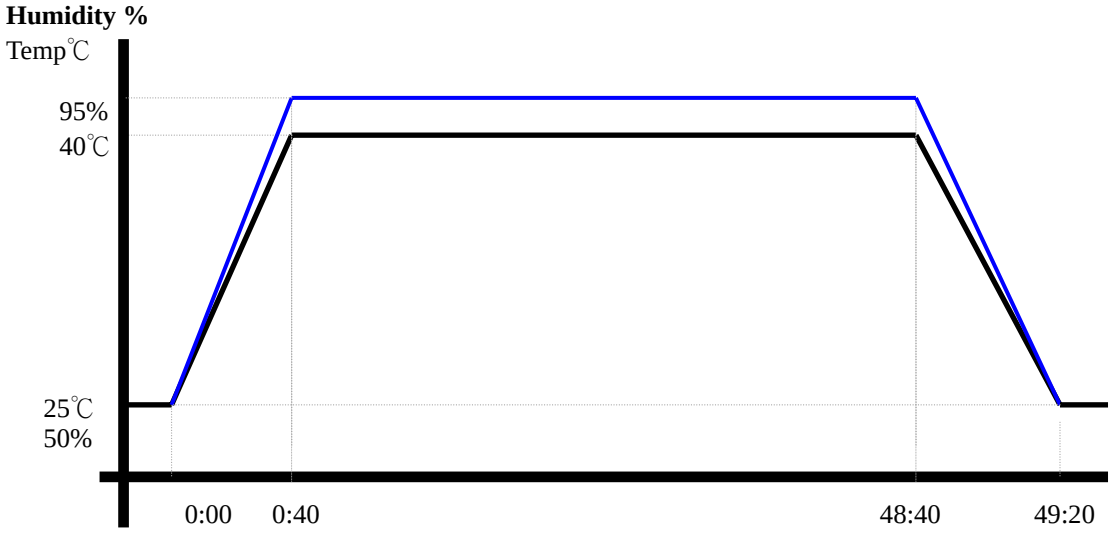
Test Standard: Reference IEC 68-2-3 Testing procedures
Test Ca: Damp heat, steady state (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D4H+-100
Date of Calibration: 10/13/11
Serial Number: 2582

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
5. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (AHP-2176)

Test Result:

No problem was found after the humidity storage test.

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Cold start and hot start test

Test Date: 07-05~06-2012

Test Product: AHP-2176

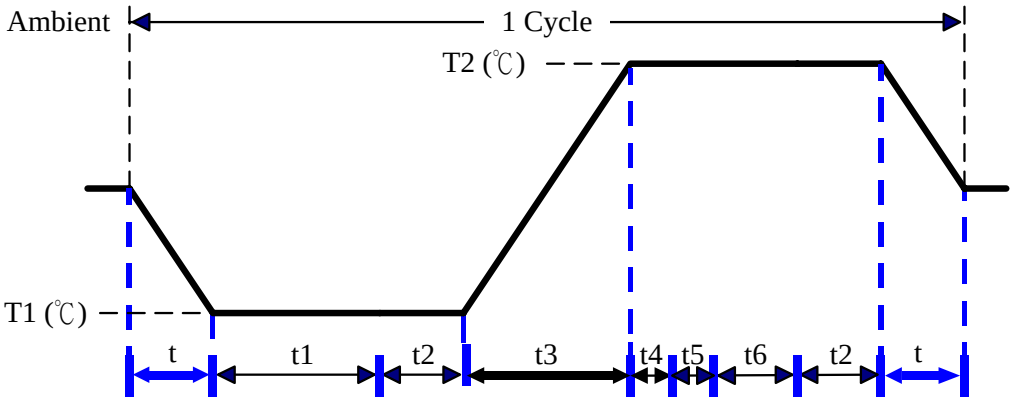
Test Site: AAEON QE Dept.

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-D4H+-100
Date of Calibration: 10/13/11
Serial Number: 2582

Test Condition:



Parameters	Description
T1	-25℃
T2	65℃
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 BurnIn Test 7.0 Pro
t5: Win 7 Software restart test 3 times
Test Software:Windows 7

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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