

EMB-APL1

Temperature/Humidity Test Report

Report NO: 17IP020014

Summary	<p><input checked="" type="checkbox"/> Pass</p> <p><input type="checkbox"/> Fail Note : There is/are ____ defect(s) not list in the report, please check it in the DTS Website.</p> <p><input type="checkbox"/> Pass with Deviation Comment:</p>
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Issue date

2017-09-26

QE Manager

KJ Wang

Test Engineer

Jerry Chen

Test item list

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Testing Result

Num	Test item list	Result	Remark
1	Temp./humidity power on/off test	Pass	
2	Temperature variation operation test	Pass	
3	Cold start and hot start test	Pass	

Configuration of EUT

Test Product: EMB-APL1

Sample Configuration & Quantity Under Test:

1. Model name: EMB-APL1
2. M/B Name: EMB-APL1 / Rev. 1.02
3. CPU: Intel Pentium N4200 / 1.10 GHz
4. BIOS Ver.: T0.901 (EAPLAT0901) (08/01/2017)
5. Chipset: Intel Apollo Lake-I
6. Memory: Transcend / 4GB DDR3L 1600 SO / SEC K4B4G0846D * 2 pcs
7. M.2 SSD: Transcend 64GB / TS64GMTS400TPR
8. Test Software: Windows 10 / Run PassMark Burn In Test 8.1 Pro /
PassMark Rebooter V1.3 (For Windows Mode Power On/Off Test)
09. Adapter: FSP /FSP060-DBAE1 / 12V, 5A
10. Heat Sink:



Temp./humidity power on/off test

Test Date: 09-20 ~ 22-2017

Test Site: AAEON QE Dept.

Test Standard: Refer to IEC 68-2-30 Testing procedures
 Test Db: Damp Heat Test
 Refer to IEC 68-2-1 Testing procedures
 Test Ad: Cold Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
 Model: THS-D7TS-100+LN2
 Date of Calibration: 04/21/2017
 Due date of Calibration: 04/20/2018
 Serial Number: A0639

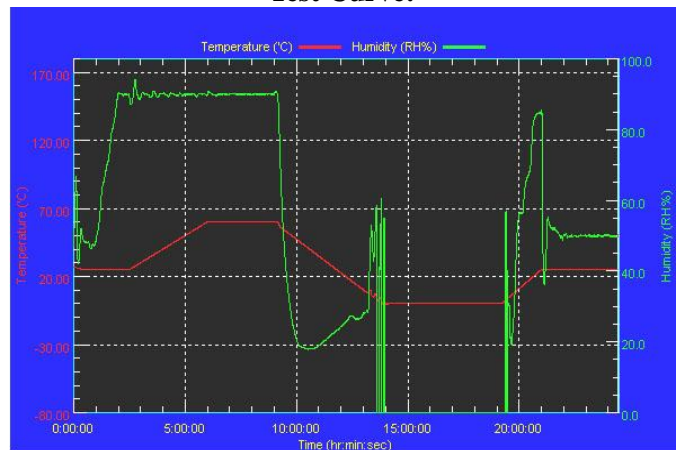
Temperature & Humidity Power On/Off Test:

1. Test High Temp./Humidity: 60°C @90%RH
2. Test Low Temperature: 0°C
3. Test Time: 24Hours / Cycle
4. Test Cycle: 2 Cycles
5. Test Software: Windows Mode / Run PassMark Rebooter V1.3

Testing Specification:

Step	Temperature (°C)	Humidity (%RH)	Duration (HH:MM)
1	25	50	00:30
2	25	50	00:30
3	25	90	01:00
4	25	90	00:30
5	60	90	03:30
6	60	90	03:00
7	0	0	04:50
8	0	0	05:23
9	25	50	01:47
10	25	50	03:00

Test Curve:



Test Result:

	Actual	Successful	Failure rate	Test Result
Power On/Off	1046/times	1046/times	0 %	Pass

Note: 1. Failure rate need to under 0%.
 2. Power on/off fixture setting: on - 2.5 minutes / off - 5 seconds
 PassMark Rebooter setting: shutdown countdown - 30 seconds.

Temperature variation operation test

Test Date: 09-22 ~ 25-2017

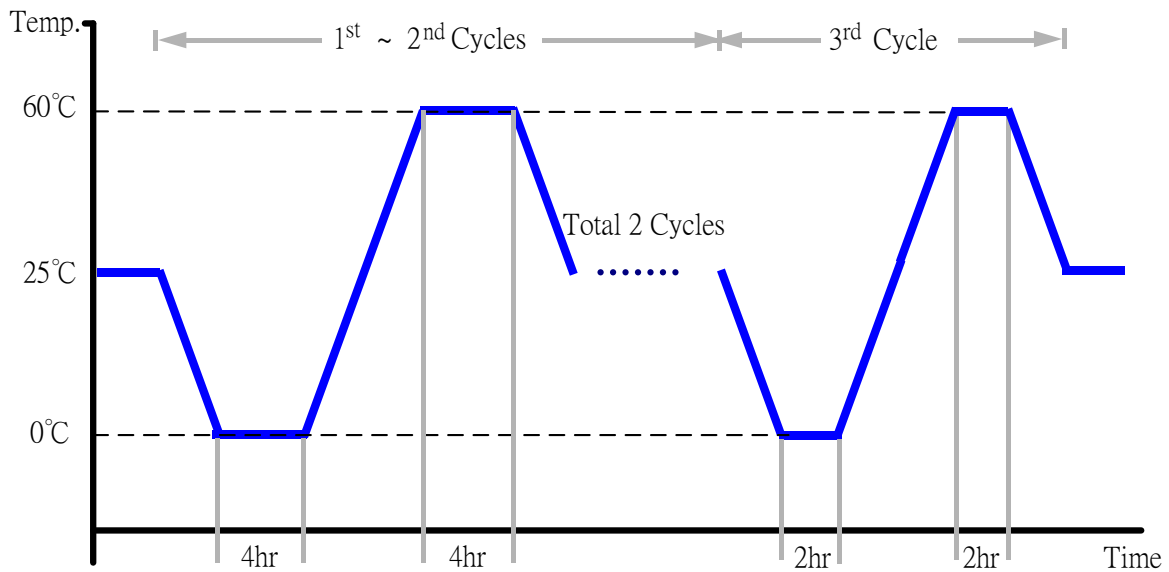
Test Site: AAEON QE Dept.

Test Standard: Refer to 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-D7TS-100+LN2
Date of Calibration: 04/21/2017
Due date of Calibration: 04/20/2018
Serial Number: A0639

Temperature & Humidity Cycle Test:

1. Test Low Temperature: 0°C (1~3 cycles)
2. Test High Temperature: 60°C (1~3 cycles)
3. Test dwell time: 4Hrs (1~2 cycles)
2Hrs (3rd cycle)
4. Temperature slope: 2°C/min
5. Test cycle: 3 cycles
6. Test Environment Curve:



Test Result:

No issues were found during the temperature variation operation test.

Cold start and hot start test

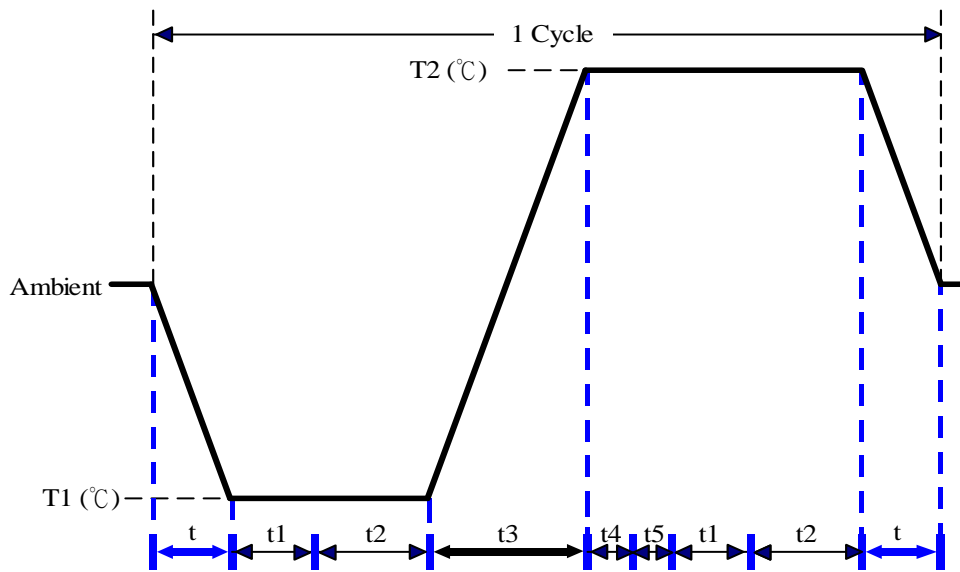
Test Date: 09-25 ~ 26-2017

Test Site: AAEON QE Dept.

Test Standard: Refer to 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-D7TS-100+LN2
Date of Calibration: 04/21/2017
Due date of Calibration: 04/20/2018
Serial Number: A0639

Test Condition:



Parameters	Description
T1	0°C
T2	60°C
t1	1 hrs
t2	2 hrs
t4, t5	30 min
t, t3	2°C/min
n (Cycle)	1

- t, t3 = temperature slope
- t, t1: Power Off
- t2: Power on/off test 10 times (on 2 min / off 5min)
- t3, t4: Run PassMark Burn In Test
- T5: Win. 10 Software restart test 2 times
- Test Software: Windows 10

Test Result:

- a. No issues were found during the cold start test.
- b. No issues were found during the hot start test.