BOXER-6615

With 2.5” SATA HDD

Environment Test Report

Report NO: 16P020011

Summary	☑ **Pass** ☐ **Fail** ☐ **Pass with Deviation** **Comment:** _____

Issue date	QE Manager	Test Engineer
2016-06-29	KJ Wang	Ben Sun

Test item list

Testing Result

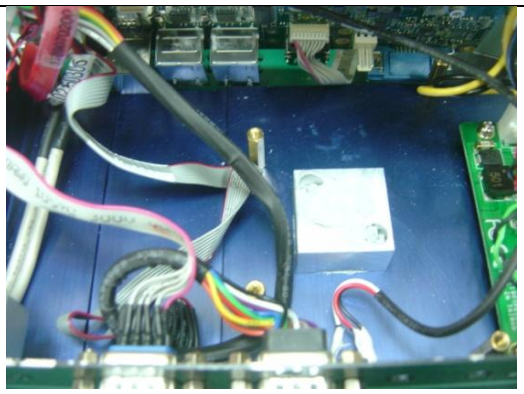
Num	Test item list	Result	Remark
1	High temperature operation test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
1.	**Fanless System**	BOXER-6615
	1. Main Board	GENE-BSW5 A1.1
	2. BIOS Ver.	R1.0
	3. CPU Type	Intel Braswell N3710 / 2.56GHz
	4. Chipset	Intel Braswell
	5. Wide Temp. Memory	MAMPHIS 8GB * 1 / DDR3L 1600 / IM4G08D3FABG
	6. Wide Temp. HDD	TOSHIBA 100G / MK1060GSC
	7. Test Software	Windows 8 / Run PassMark BurnIn test 8.1 Pro
2.	**Adapter:**	FSP / FSP084-DIBAN2 / Output: 12V;7A MAX

Photos

Heat Sink



HDD Kit

High Temperature Operation test

Test Date: 06-27~29-2016

Test Product: BOXER-6615

Test Site: AAEON QE Dept.

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

Test Equipment:

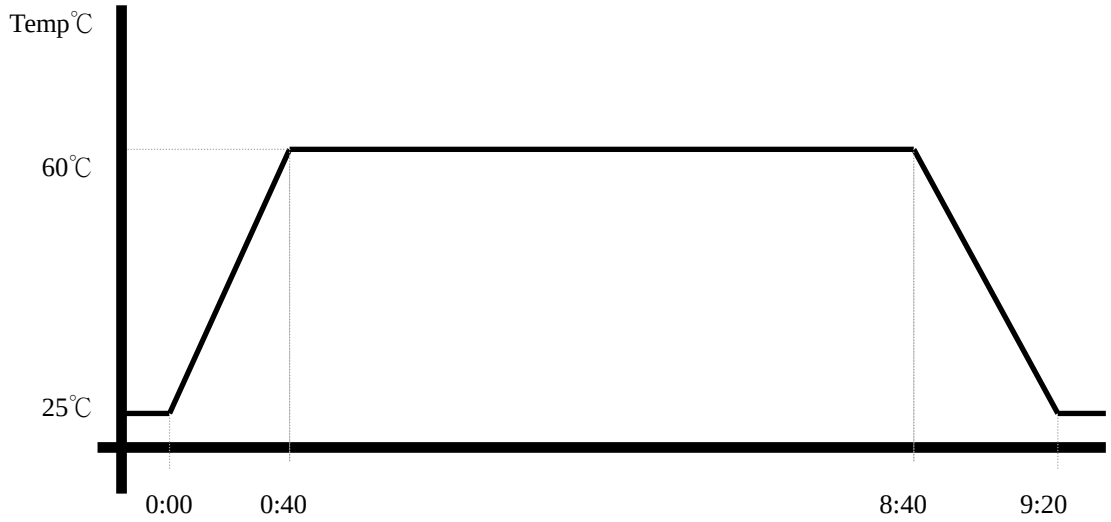
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 04/27/15
Serial Number: 6488KT

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 09/10/15
Serial Number: 12A323190

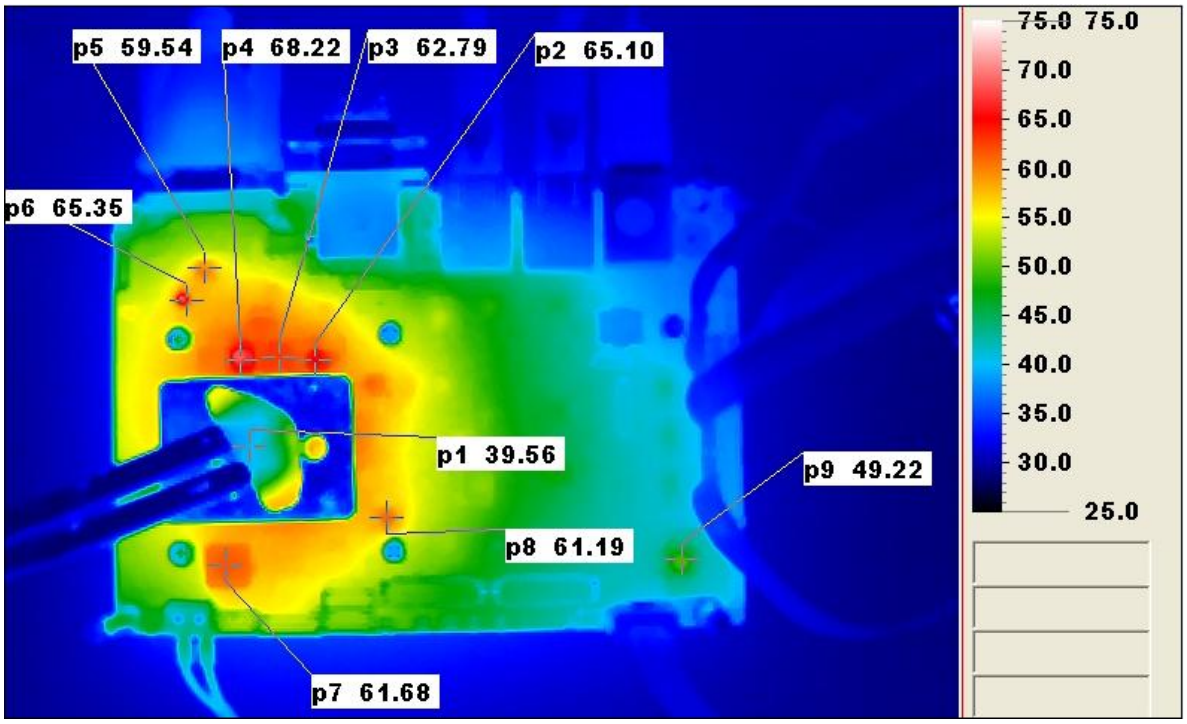
Testing Item:

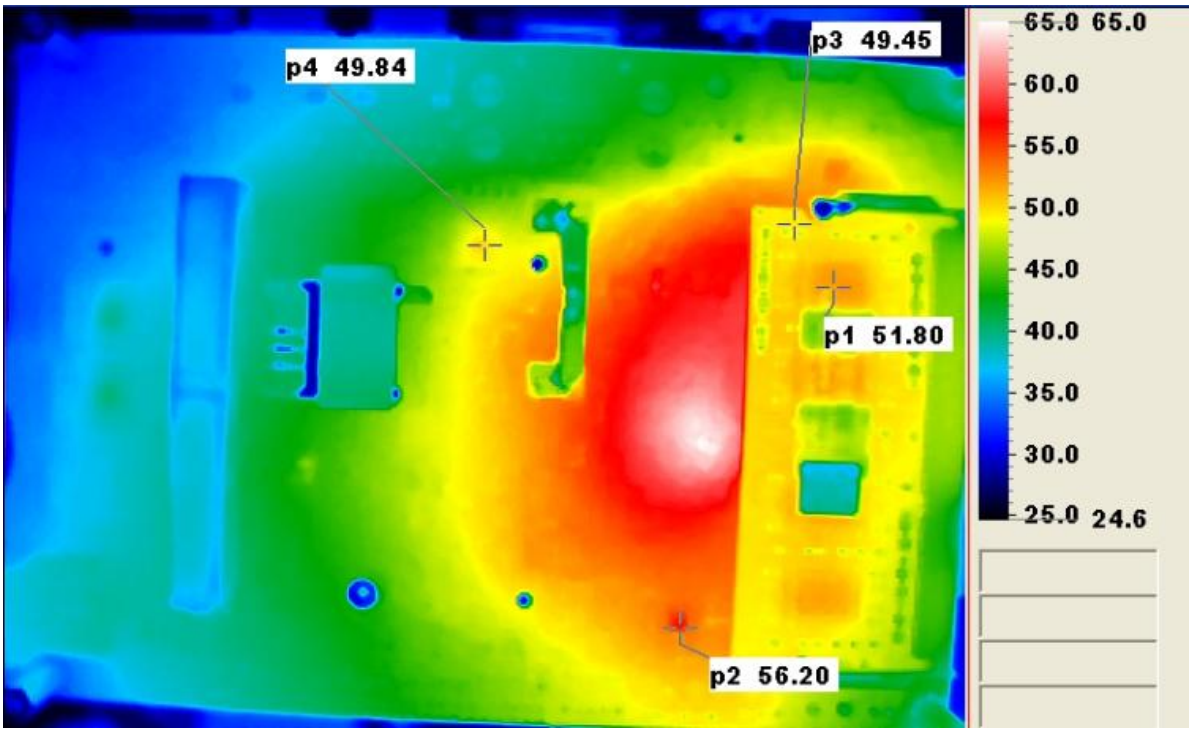
1. Test Temperature: 60℃
2. Test Times: 8Hrs
3. Test Software: Windows 8 / Run PassMark Burn In Test 8.1 Pro
4. Test Environment Curve:



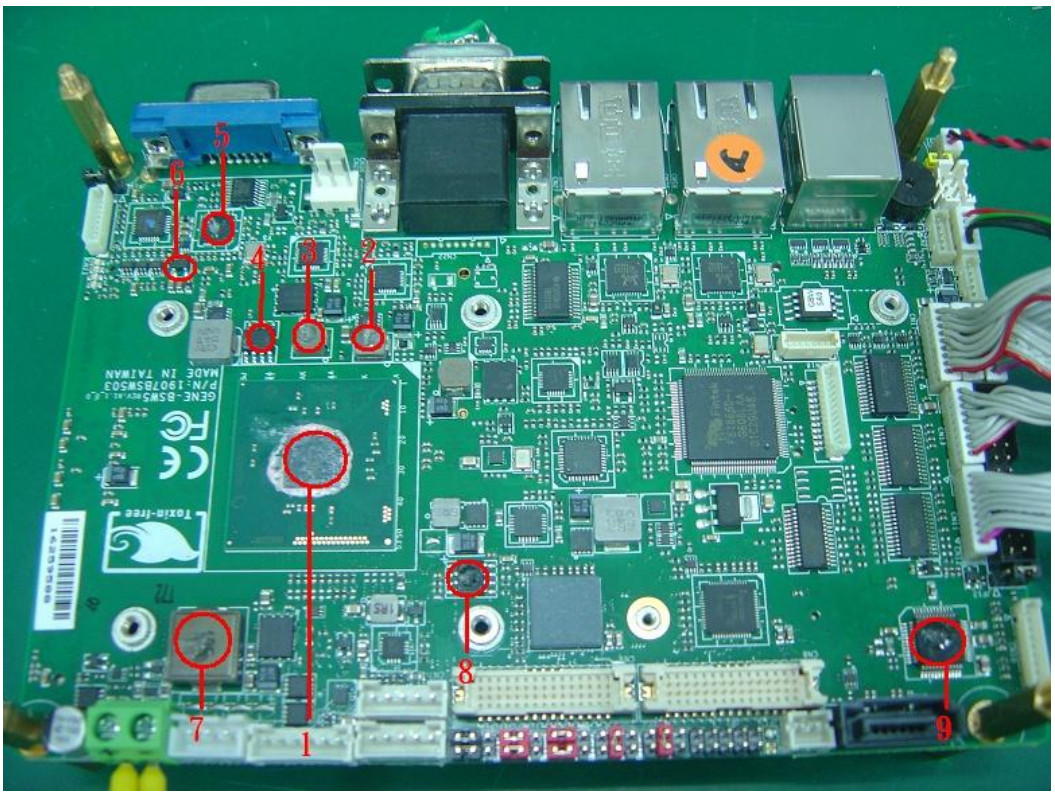
High Temperature Operation test

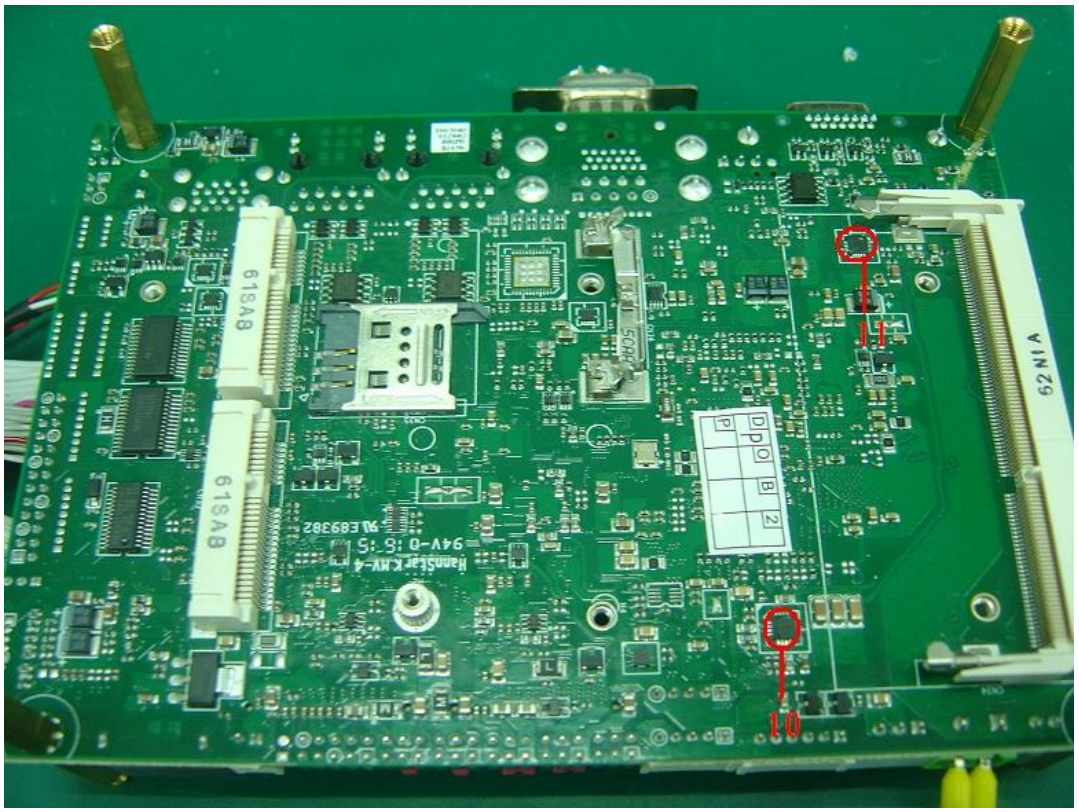
Terminal Recorder:





High Temperature Operation test





High Temperature Operation test

Thermal profile data:

BOXER-6615 (With 0.5m/sec airflow)

Point	Position	Describe	Tc (*1) (℃)	TAT(*2)	TPT(*3)	Note
				60	25	
1	U14	(TF)INTEL CPU.Braswell.N3710. 2.56GHz	90	82.6	47.6	
2	L6	COIL.SMD.NEC/TOKIN.MPLCG0530LR33	120	92.3	57.3	
3	L8	COIL..Panasonic.ETQP4LR36AFM	130	92.9	57.9	
4	U27	(TF)IC.LDO Linear Regulator SMD.RICHTEK.RT9025-25PSP	100	88.4	53.4	
5	U44	(TF)IC.DisplayPort to VGA Converter.SMD.Chrontel.CH7517A-BF	125	88.7	53.7	
6	U38	(TF)IC.LDO Regulator.SMD.UPI.UP0107BMA5-00	100	97.5	62.5	
7	L1	COIL.ZenithTek.ZPWM-1040MB-1R5M	100	94.5	59.5	
8	U6	TF)IC.LDO Linear Regulator.0SMD.RICHTEK.RT9025-25PSP	100	87.5	52.5	
9	U2	(TF)IC.SMD.REALTEK.ALC892-CG	100.5	80.3	45.3	
10	U49	(TF)IC.Wide Input Voltage.SMD.TI.TPS53219ARGTR	125	92.0	57.0	
11	U68	(TF)IC.SMD. BUCK CONTROLLER.3A.TI.TPS51216RUK	100	90.3	55.3	
12		Memory chipset	95	90.8	55.8	NOTE4
13		HDD Surface Tc	85	81.1	46.1	NOTE4

Note(*):

1. "**Tc**" indicates the component's case maximum temperature value specified in its datasheet.

2. "**TAT**" indicates the actual measured temperature under product specification.

3. "**TPT**" indicates the predicted temperature under 25℃ working environmental.

4. 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.

Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6615)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 06-20 ~ 21-2016

Test Product: BOXER-6615

Test Site: AAEON QE Dept.

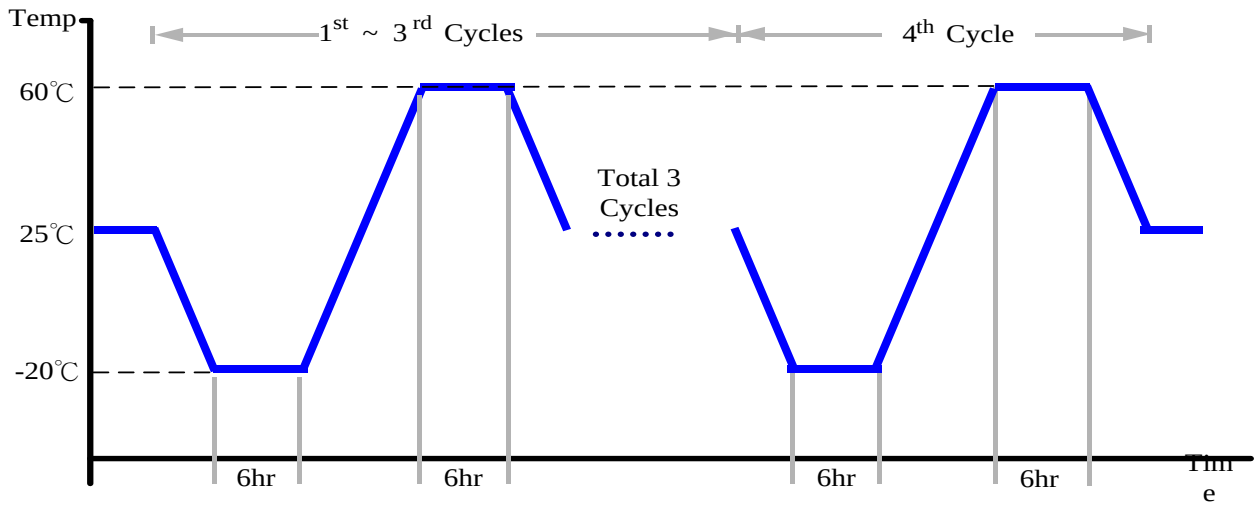
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/04/15
Due date of Calibration: 06/03/16
Serial Number: 9095KT

Test Condition:

1. Test Low Temperature: -20℃
2. Test High Temperature: 60℃
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 4 cycles
6. Test Software: Windows 8 / Run PassMark Burn In Test 8.1 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (BOXER-6615)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 06-22 ~ 23-2016

Test Product: BOXER-6615

Test Site: AAEON QE Dept.

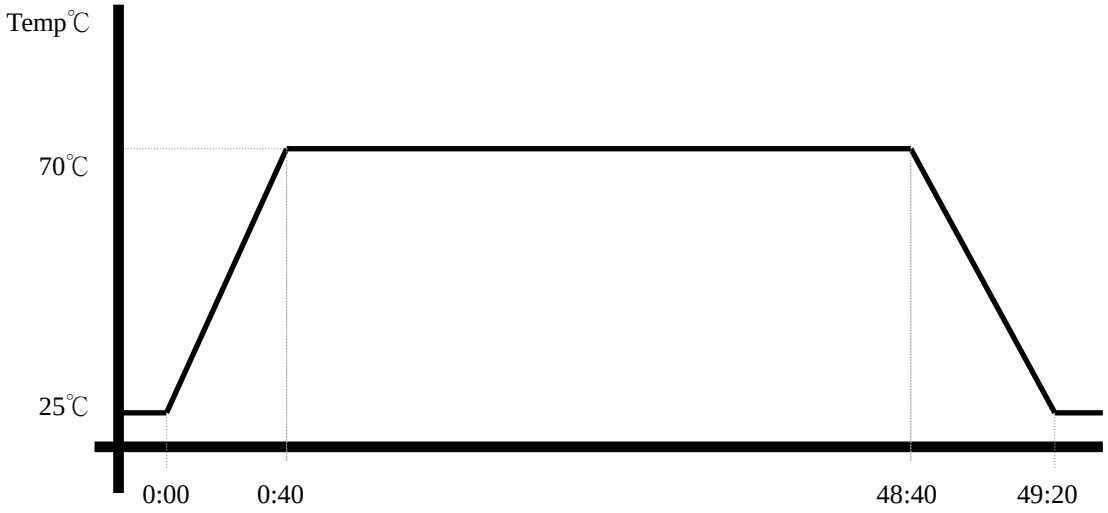
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/04/15
Due date of Calibration: 06/03/16
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 70℃
2. Test Times: 48Hrs
3. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (BOXER-6615)

Test Result:

No issue was found after the high temperature storage test.

Low temperature storage test

Test Date: 06-24 ~ 25-2016

Test Product: BOXER-6615

Test Site: AAEON QE Dept.

Test Standard: Refer to 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-B6T-150+LN2
Date of Calibration: 06/04/15
Due date of Calibration: 06/03/16
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -40℃
2. Test Times: 48Hrs
3. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6615)

Test Result:

No issue was found after the low temperature storage test.

Humidity test

Test Date: 06-17 ~ 18-2016

Test Product: BOXER-6615

Test Site: AAEON QE Dept.

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

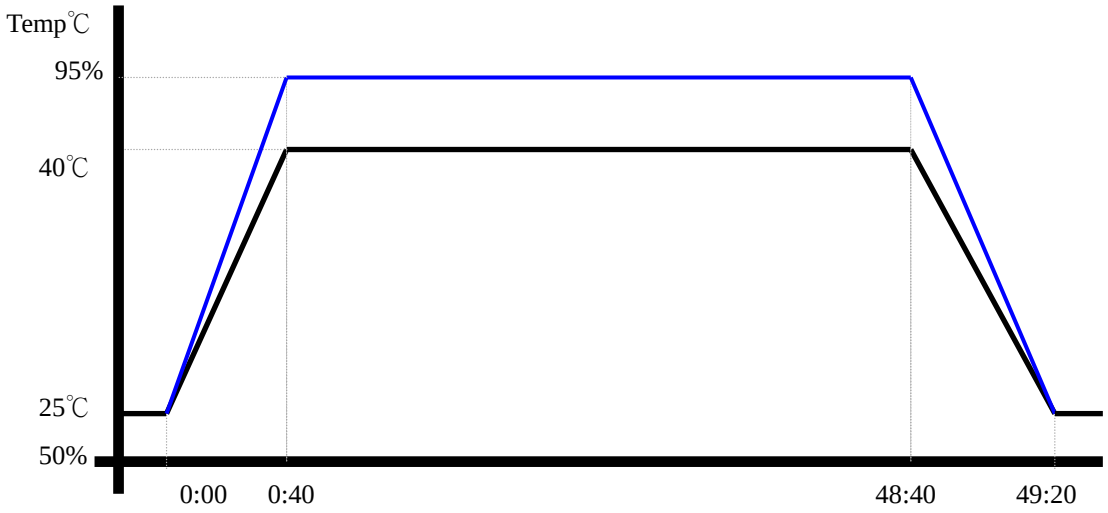
Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/04/15
Due date of Calibration: 06/03/16
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6615)

Test Result:

No issue was found after the humidity storage test.

Cold start and hot start test

Test Date: 06-16 ~ 17-2016

Test Product: BOXER-6615

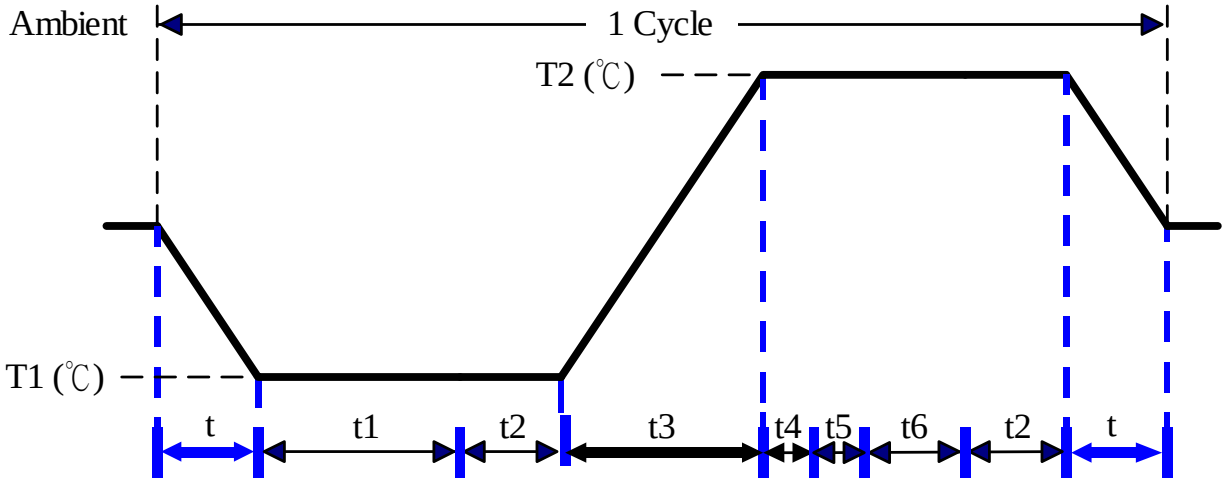
Test Site: AAEON QE Dept.

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-B6T-150+LN2
Date of Calibration: 06/04/15
Due date of Calibration: 06/03/16
Serial Number: 9095KT

Test Condition:



Parameters	Description
T1	-20℃
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 8 Software restart test 2 times
Test Software:Windows 8

Test Result:

a. No issues were found during the cold start test.

b. No issues were found during the hot start test.