BOXER-6313

With HDD

Environment Test Report

Report NO: 15E020009

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment :** 1. **There are 2 component in the absence of Tc and Tj specification, So we are unable to determine.** 2.**We found LAN error for run Burn In Test with PAA LAN module, When Burn In Test with LAN performance is set on 100%. Therefore, We changed the original LAN performance 100% to 99% and then run Burn In Test can be to get LAN pass**

Issue date	Approval	Test Engineer
2015-10-30	**KJ Wang**	**Ben Sun**

Test item list

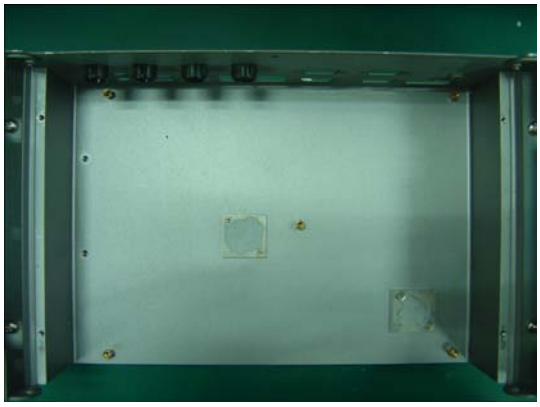
Testing Result

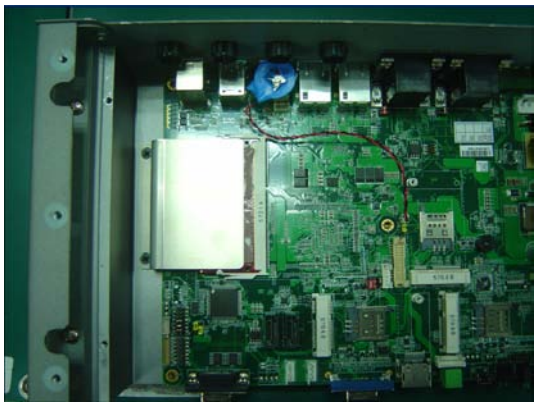
Num	Test item list	Result	Remark
1	HighTemperature operation test	Pass	
2	Temperature cycle operation test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
1.	System:	BOXER-6313
	1. Main board	PBA-BT08 A0.2
	2. BIOS	RBT8AM03
	3. CPU Type	Intel Bay Trail E3845 @1.91GHz
	4. Memory	Innodisk DDR3L-1600 LV/V73CBG04808RAJJ11I/8GB *1
	5. HDD	Toshiba MK1060GSC / 100 GB * 2
	6. Test Software	Windows 8 / Run BurnIn test 8.0 Pro
2.	Power Supply	FSP060-DBAB1

CPU Heatsink





High Temperature Operation test

Test Date: 10-29～30-2015

Test Product: BOXER-6313

Test Site: AAEON QE Dept.

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

Test Equipment:

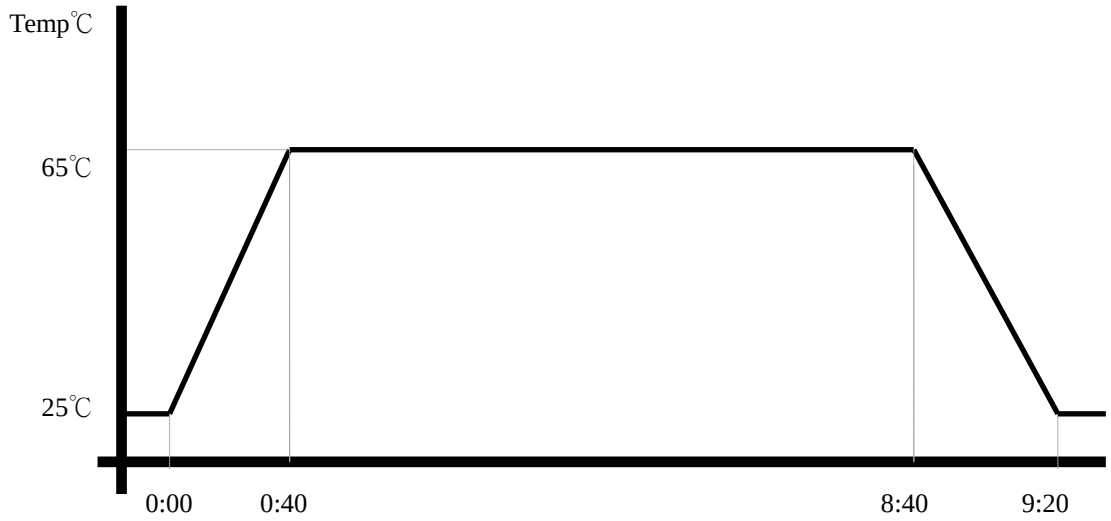
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 10/09/'15
Serial Number: 3898

Temperature Measurement:

40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 11/09/2014
Serial Number: 12A32319

Testing Item:

1. Test Temperature: 65℃
2. Test Times: 8Hrs
3. Test Software: Windows 8 / Run PassMark Burn In Test 8.0 Pro
4. Test Environment Curve:



High Temperature Operation test

Test Date: 10-29~30-2015

Test Product: BOXER-6313

Test Site: AAEON QE Dept.

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

Temperature Measurement:

40 Channel Thermal Recorder: (YOKOGAWA Inc,)

Model: DA100-13-1D

Date of Calibration: 10/01/15
Serial Number: 12A323190

IR Scanner: Infrared Camera

NEC Avio Infrared Technologies Co., Ltd.

Model: Thermo GEAR G100W2-D

Date of Calibration: 12/19/14
Serial Number: 1051444

Test Condition:

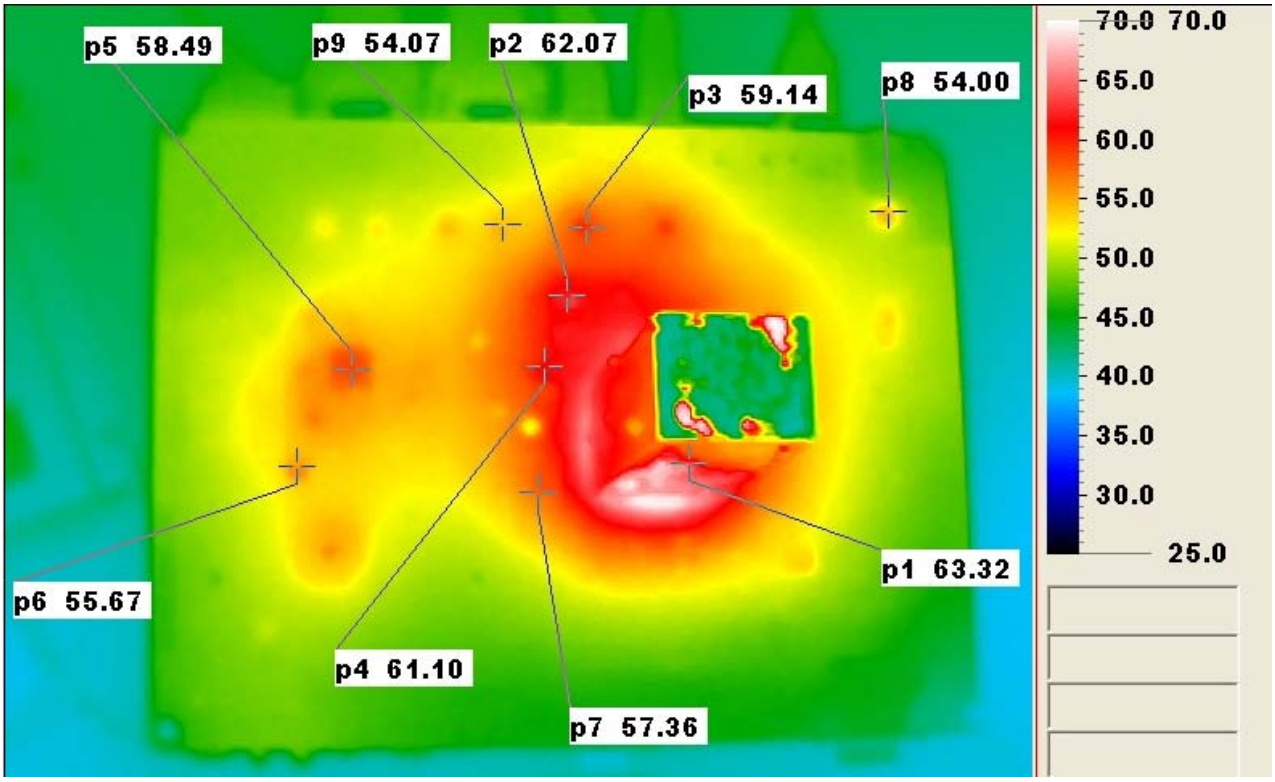
Ambient temperature: 65℃
Continuous running till thermal stability (within less than 1℃)

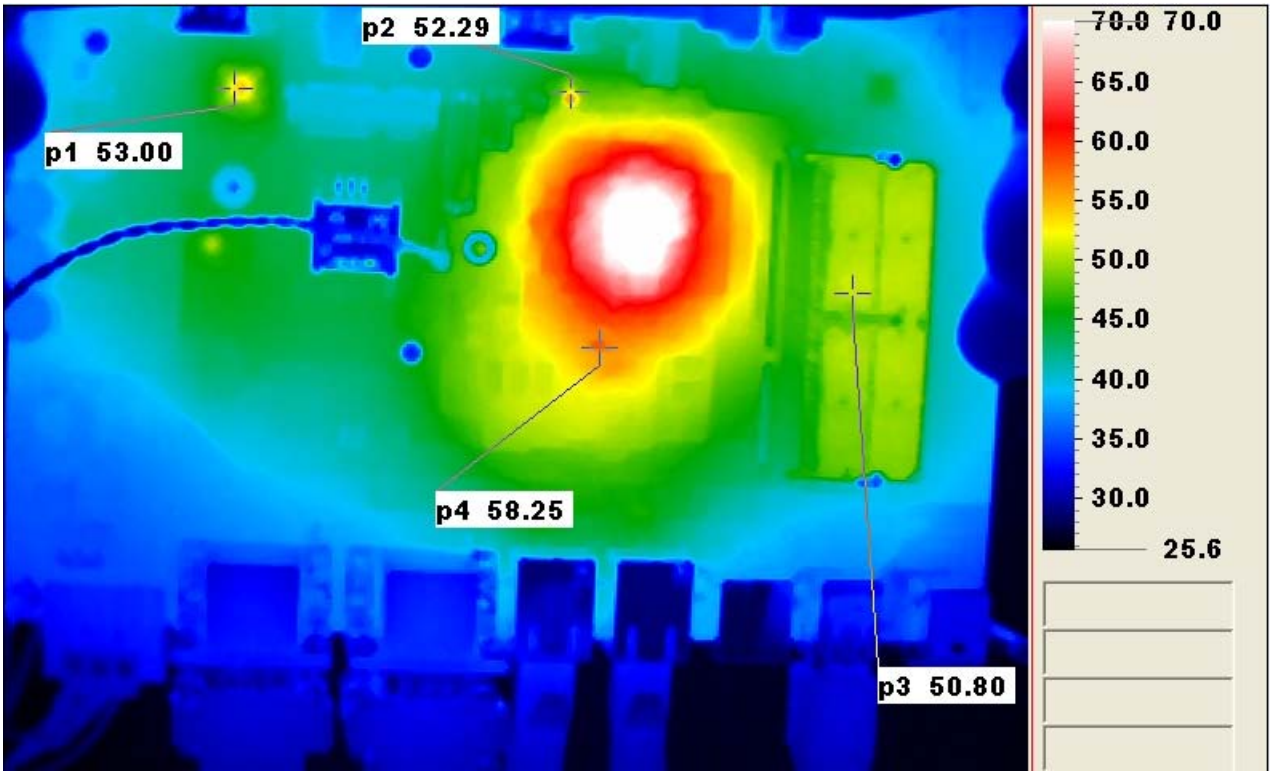
Test Software:

Windows 8 / Run PassMark Burn In Test 8.0 Pro

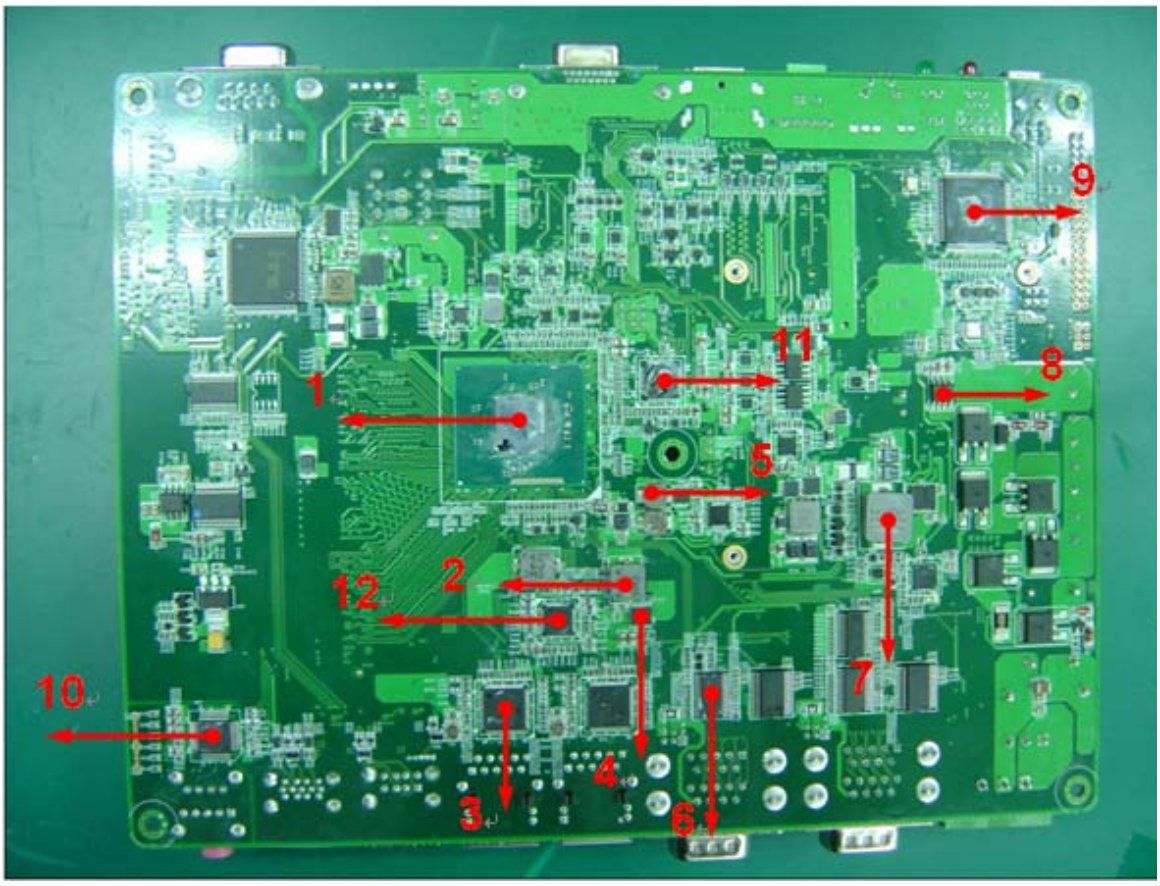
High Temperature Operation test

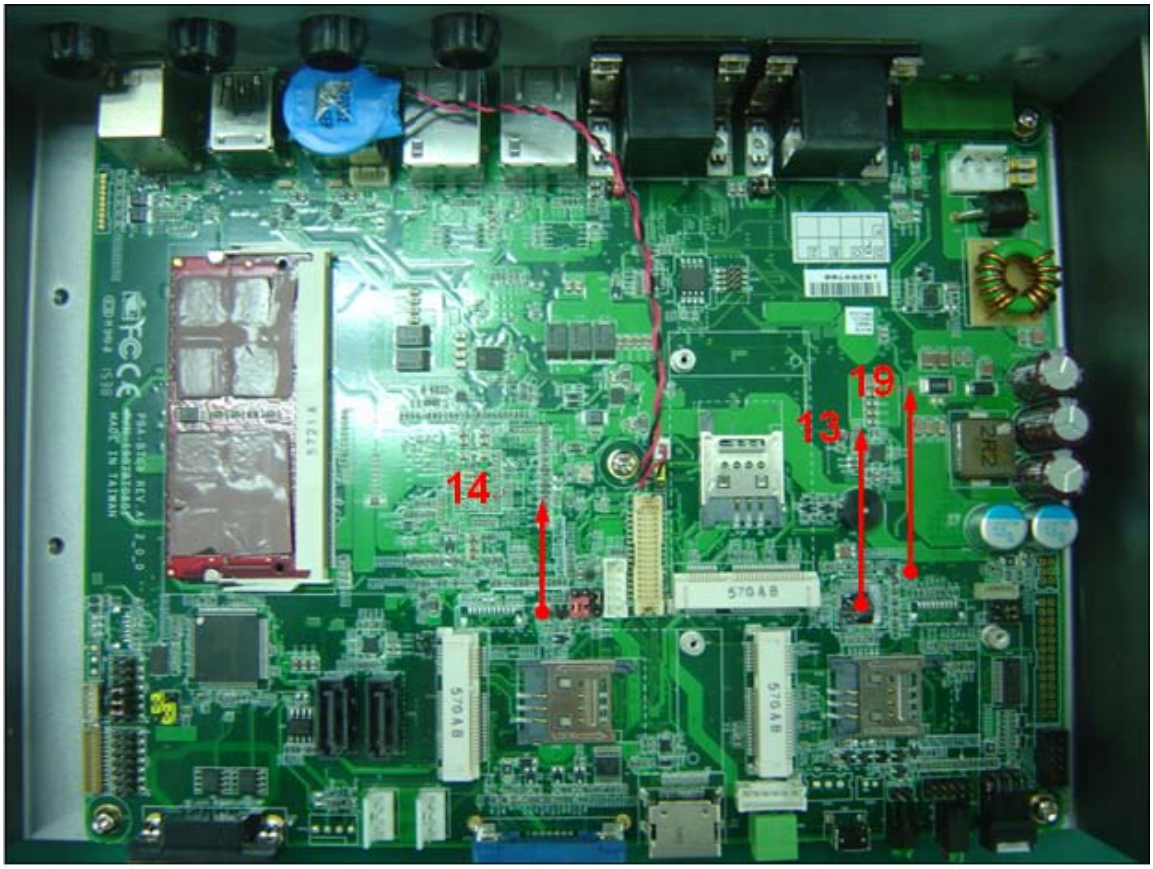
Terminal Recorder:



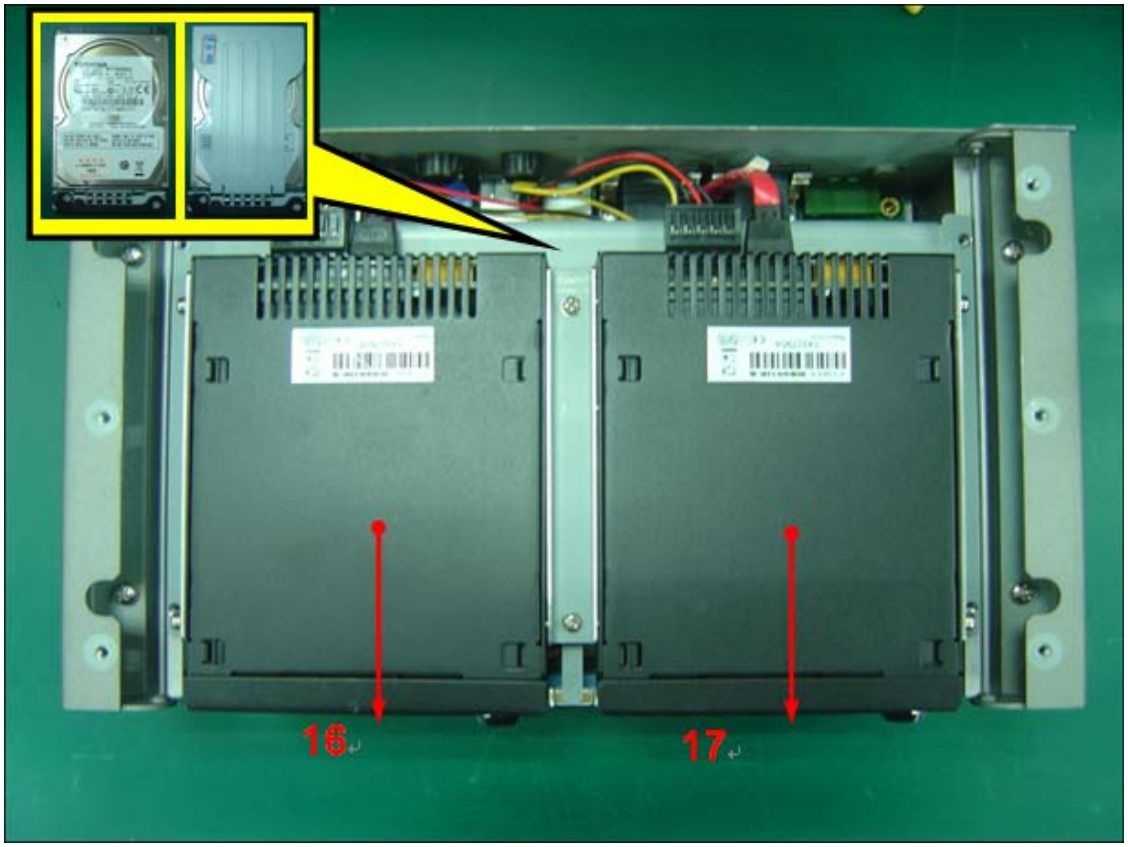


High Temperature Operation test





High Temperature Operation test



High Temperature Operation test

Thermal profile data:

BOXER-6313 (With 0.5m/sec airflow)

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under 65℃	Note
1	U1	(TF)INTEL Bay Trail-I.E3845.FH8065301487717 SR1X6	110	76.7	
2	L5	(TF)COIL.0.42uH.SMD.Panasonic.ETQP4LR42AFM	130	82.0	
3	U21	(TF)IC.PCI-E GigaBit Ethernet Chipset.SMD.Intel.WGI211AT	85	82.0	
4	U56	(TF)IC.Synchronous Buck NexFETT. SMD.TI.CSD97374Q4M	125	83.3	
5	L2	(TF)COIL.SMD.5.5*5*3mm.NEC/TOKIN.MPLCG0530L3R3	120	79.9	
6	U52	(TF)IC.SMD. transceiv.Fintek.F81438G	NA	79.2	
7	L6	(TF)COIL.SMD.CYNTEC.PCMB104T-1R5MS	100	86.4	
8	U85	(TF)IC.SMD. Regulator.MICREL.MIC5209YM	100	81.8	
9	U37	(TF)IC.Super I/O.LQFP128P.SMD.Fintek.F81866D-I	87.44	70.0	
10	U47	(TF)IC.SMD.REALTEK.ALC892-CG	N/A	81.6	
11	U16	(TF)IC.Display Port to LVDS Converter.NXP.PTN3460BS	80	77.5	
12	U55	(TF)IC.Dual-Channel.SVID.D.SMD.TI.TPS59641RSLTR	100	82.5	
13	U23	(TF)IC.USB.SMD.SMSC.USB2517i-JZX	100	75.9	
14	U7	(TF)IC.LDO Regulator.UPI.UP0107BMA5-00	100	86.3	
15		DIMM	85	77.8	
16		HDD-1	85	75.8	
17		HDD-2	85	79.2	
18		Battery	85	73.8	
19		Control Box Inside Air Temperature	NA	72.8	
20		Chassis Surface Temperature	NA	70.5	

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. :P150302QED02

Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6313)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 10-28 ~ 29-2015

Test Product: BOXER-6313

Test Site: AAEON QE Dept.

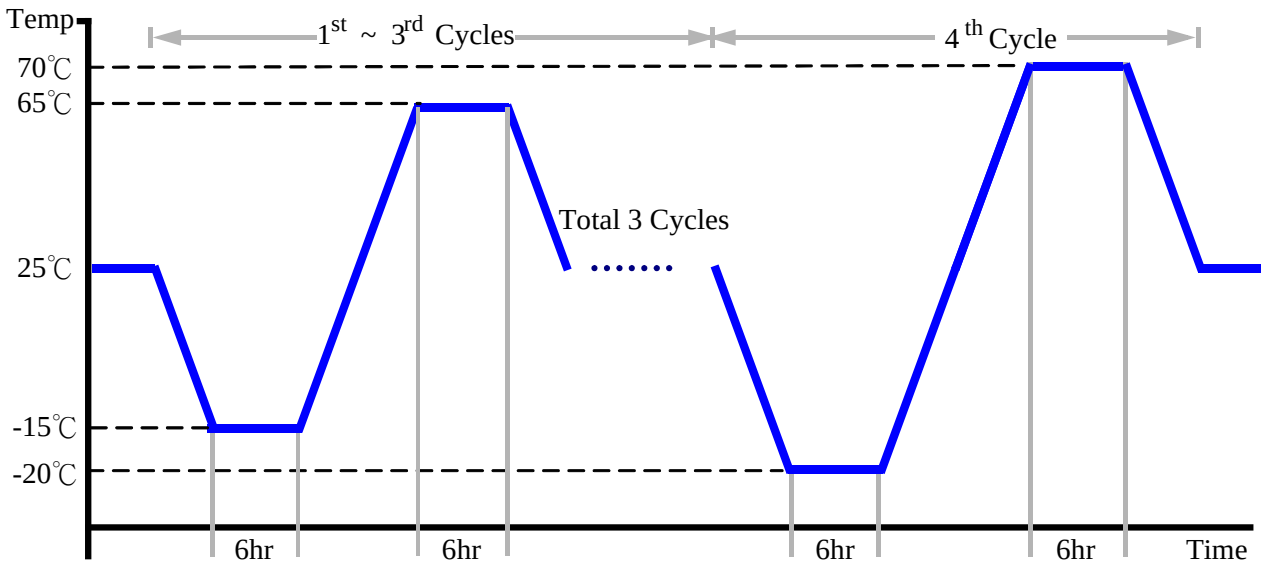
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

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

Test Condition:

1. Test Low Temperature: -15℃ (1~3 cycles)
   -20℃ (4^{th} cycle)
2. Test High Temperature: 65℃ (1~3 cycles)
   70℃ (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 (BOXER-6313)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 10-26 ~ 28-2015

Test Product: BOXER-6313

Test Site: AAEON QE Dept.

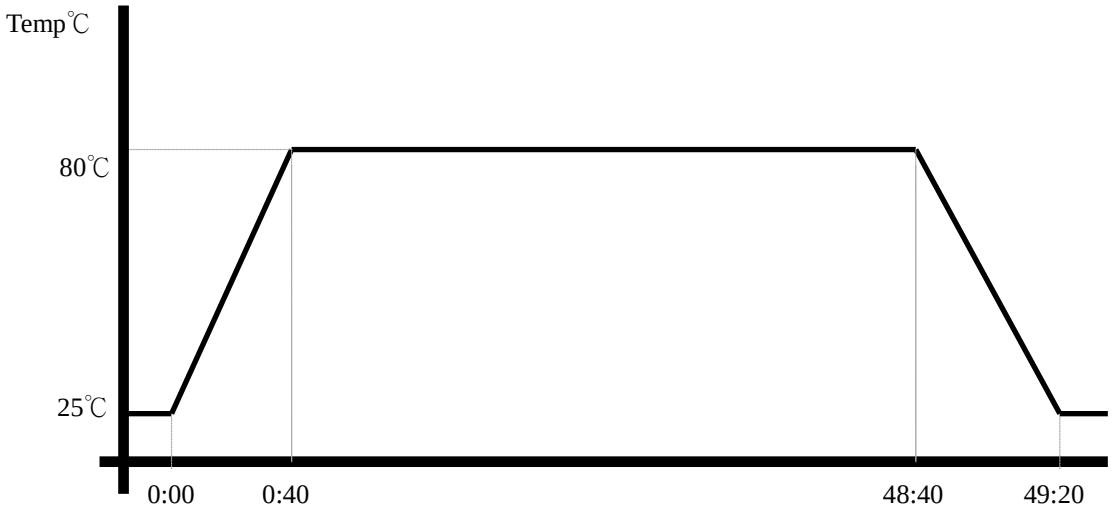
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

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

Testing Item:

5. Test Temperature: 80℃
6. Test Times: 48Hrs
7. Test Software: Windows 8 / Run PassMark Burn In Test 8.0 Pro
8. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (BOXER-6313)

Test Result:
No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 10-24~26-2015

Test Product: BOXER-6313

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: 04/27/15
Serial Number: 6488KT

Testing Item:

1. Test Temperature: -40℃
2. Test Times: 48Hrs
3. Test Software: Windows 8 / Run PassMark Burn In Test 8.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (BOXER-6313)

Test Result:
No issues were found after the low temperature storage test.

Humidity test

Test Date: 10-23~24-2015

Test Product: BOXER-6313

Test Site: AAEON QE Dept.

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

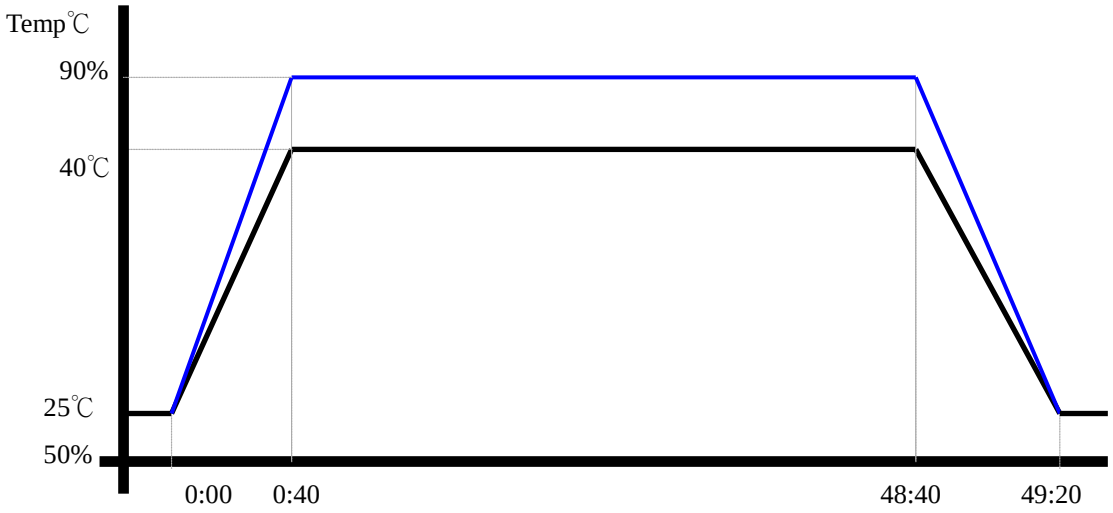
Test Equipment:

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

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 90%RH
3. Test Times: 48Hrs
4. Test Software: Windows 8 / Run PassMark Burn In Test 8.0 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6313)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test

Test Date: 10-22~23-2015

Test Product: BOXER-6313

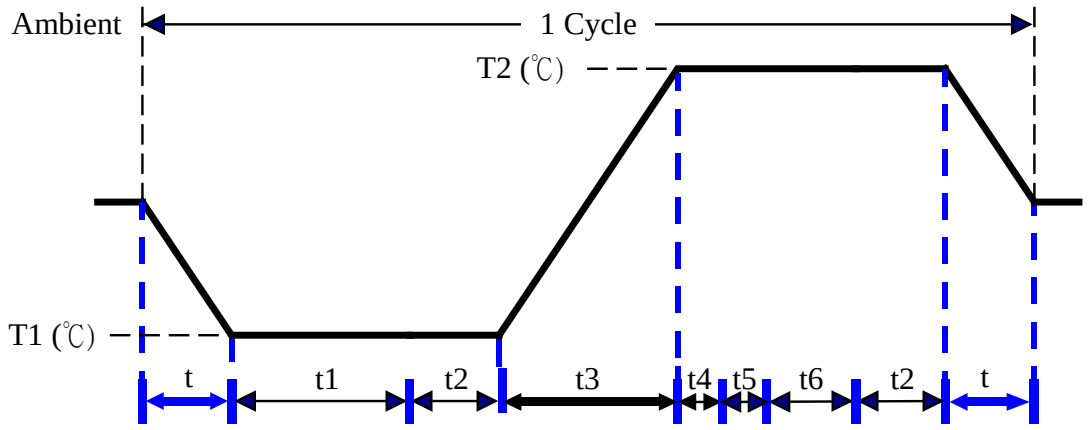
Test Site: AAEON QE Dept.

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: 04/27/15
Serial Number: 6488KT

Test Condition:



Parameters	Description
T1	-20℃
T2	70℃
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 burn in test 8.0
t5: Win 8 Software restart test 3 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.