BOXER-6914

With 2.5” SATA HDD

Environment Test Report

Report NO:15P020006

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.Temperature points at 2 components were estimated to be in marginal temperature points in comparion with component datasheets.** 2.. **The Sound test option failed during the cycling test (Run PassMark Burn In Test 7.1 Pro). Error message shows “ to play back MIDI via sequencer”. Please refer to for PASSMARK SOFTWARE (DTS NO. P140902QED25)** http://www.passmark.com/forum/showthread.php?2116-Failed-to-play-back-MIDI-via-sequencer

Issue date	Approval	Issued by
2015-02-24	**KJ Wang**	**Juno / Rex**

Test item list

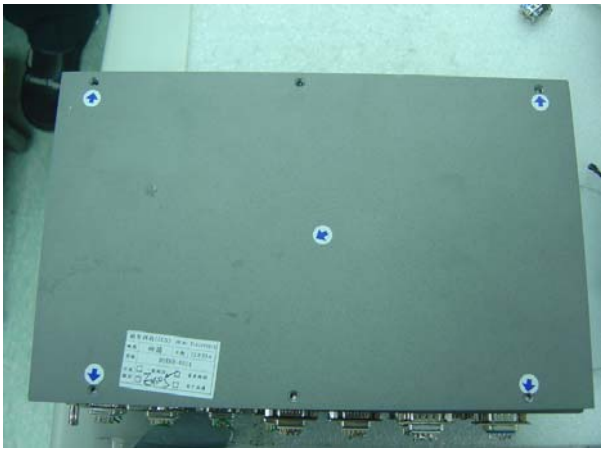
Testing Result

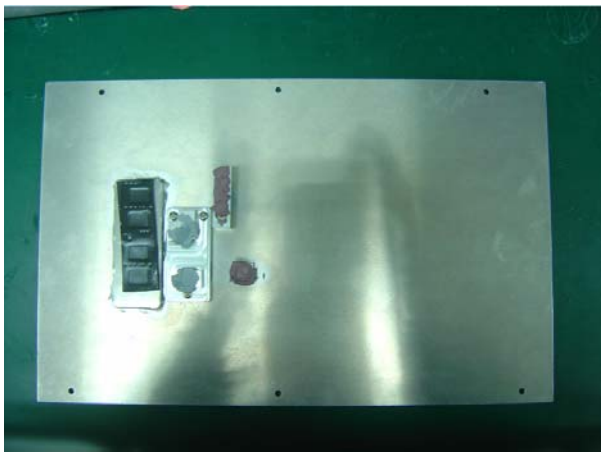
Num	Test item list	Result	Remark
1	High Temperature operation test	Pass	
2	Temperature cycle test	Pass	
3	High temperature storage test	Pass	
4	Low temperature storage test	Pass	
5	Humidity test	Pass	
6	Cold start and hot start test	Pass	

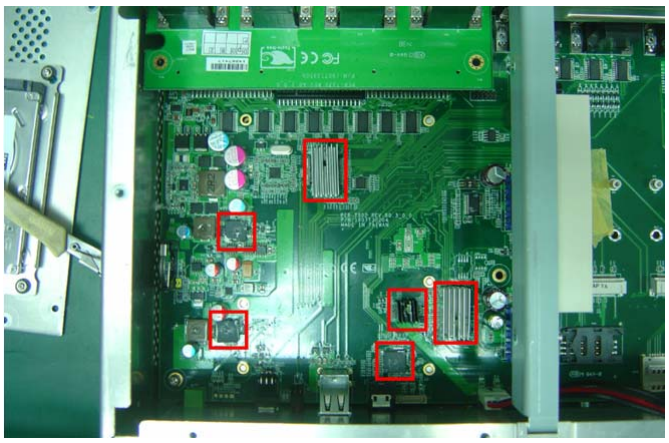
Configuration of EUT

Num	Item	Spec
1.	**System**:	BOXER-6914
	1.Main board	COM-CV05 Ver B 0.3
	2.BIOS Ver.	COM-CVB R0.2 (12/3/2014) (B914AM02)
	3.CPU Type	Intel Atom CPU D2550 @ 1.86GHz
	4. Memory	Transcend DDR3L-1600 8GB (SEC K4B4G0846B)
	5. SATA HDD	Toshiba 2.5” MK1060GSC 100GB
	6. Test Software	Windows 7 / Run PassMark BurnIn test 7.1 Pro
2.	**Adapter:**	FSP120-AAB

Heat Sink







High Temperature Operation test

Test Date: 02-23～24-2015

Test Product: BOXER-6914

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/'14
Serial Number: 3898

Temperature Measurement:

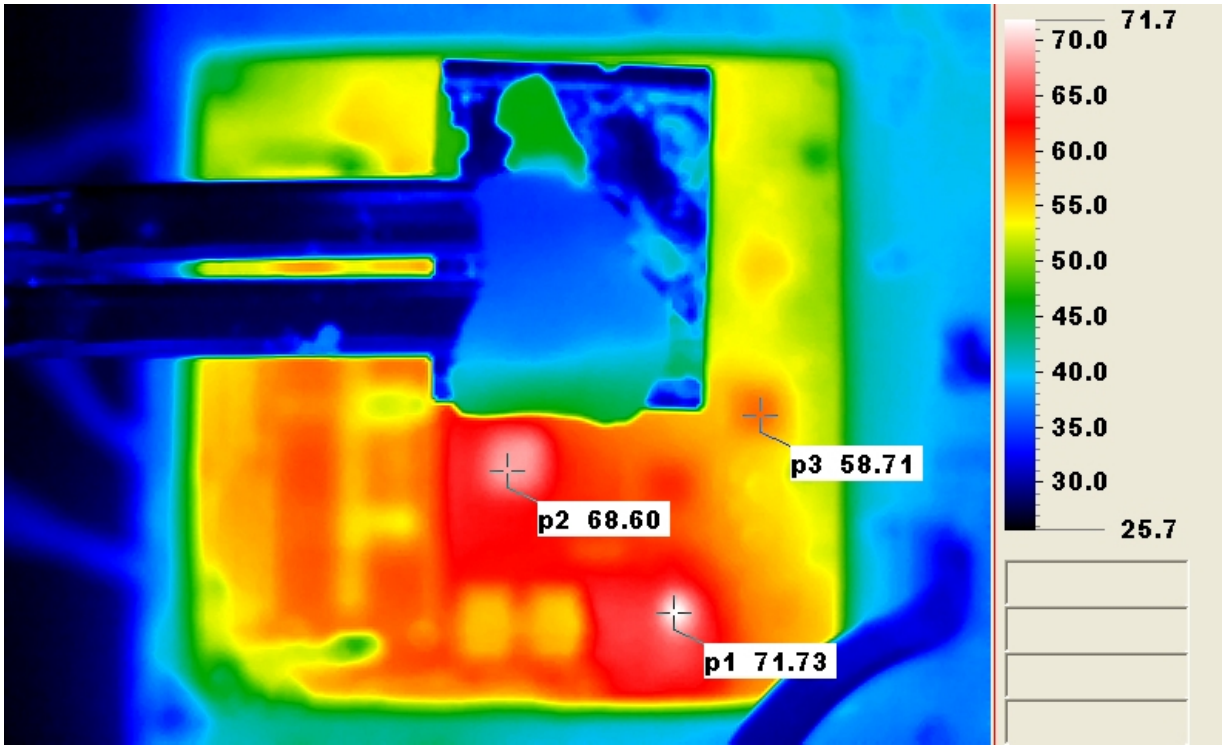
40 Channel Thermal Recorder:
YOKOGAWA Inc,
Model: DA100-13-1D
Date of Calibration: 11/09/2014
Serial Number: 12A32319

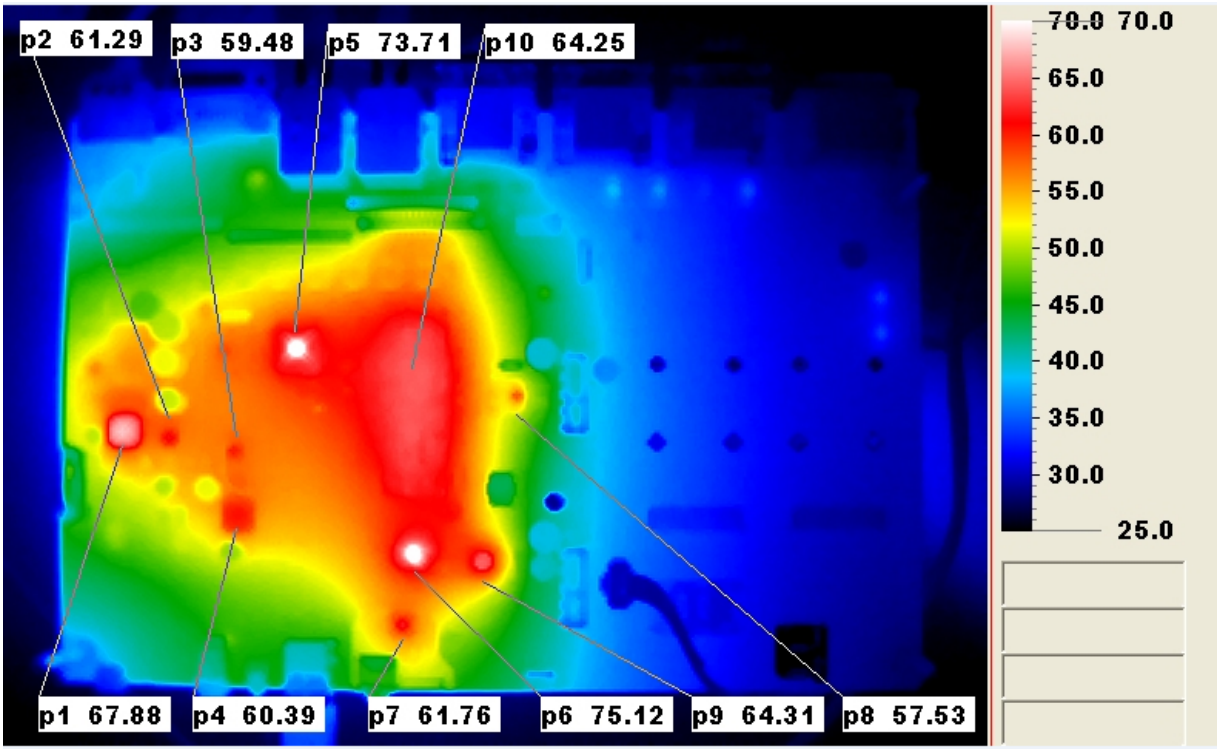
Testing Item:

1. Test Temperature: 55℃
2. Test Times: 8Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:

High Temperature Operation test

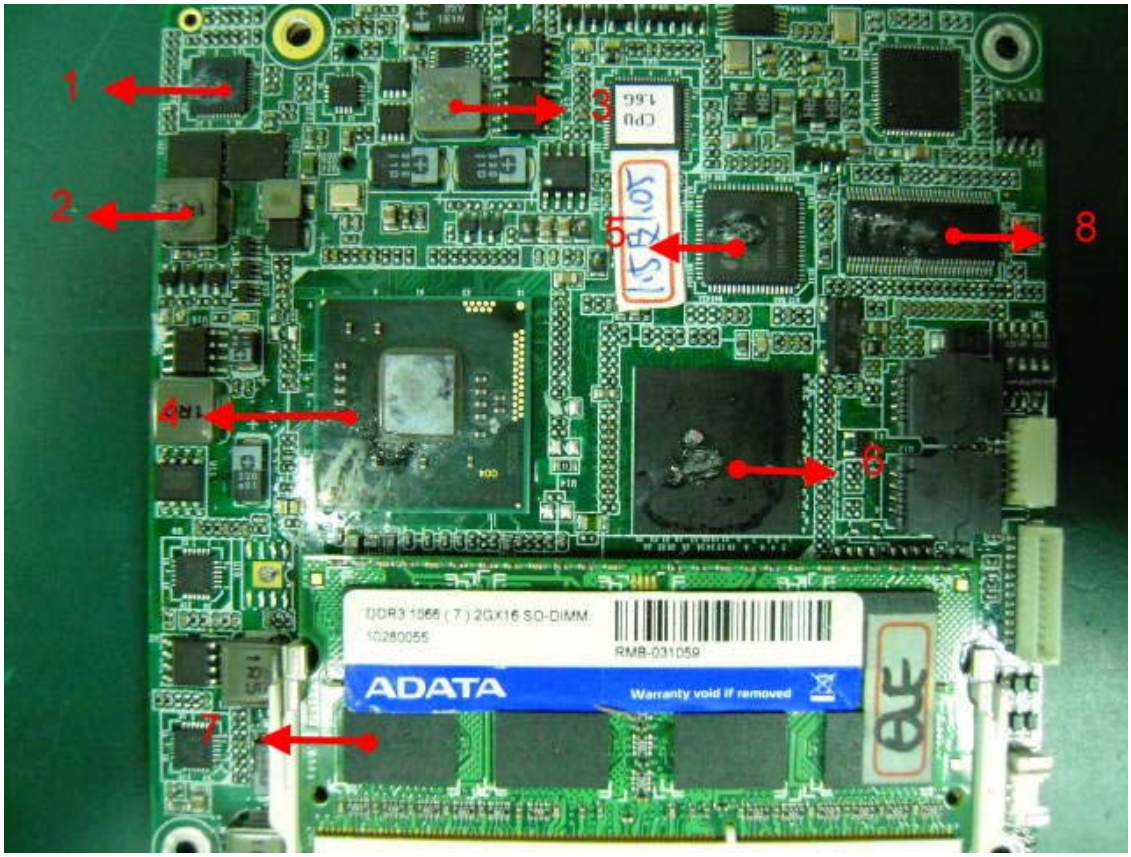
Terminal Recorder:

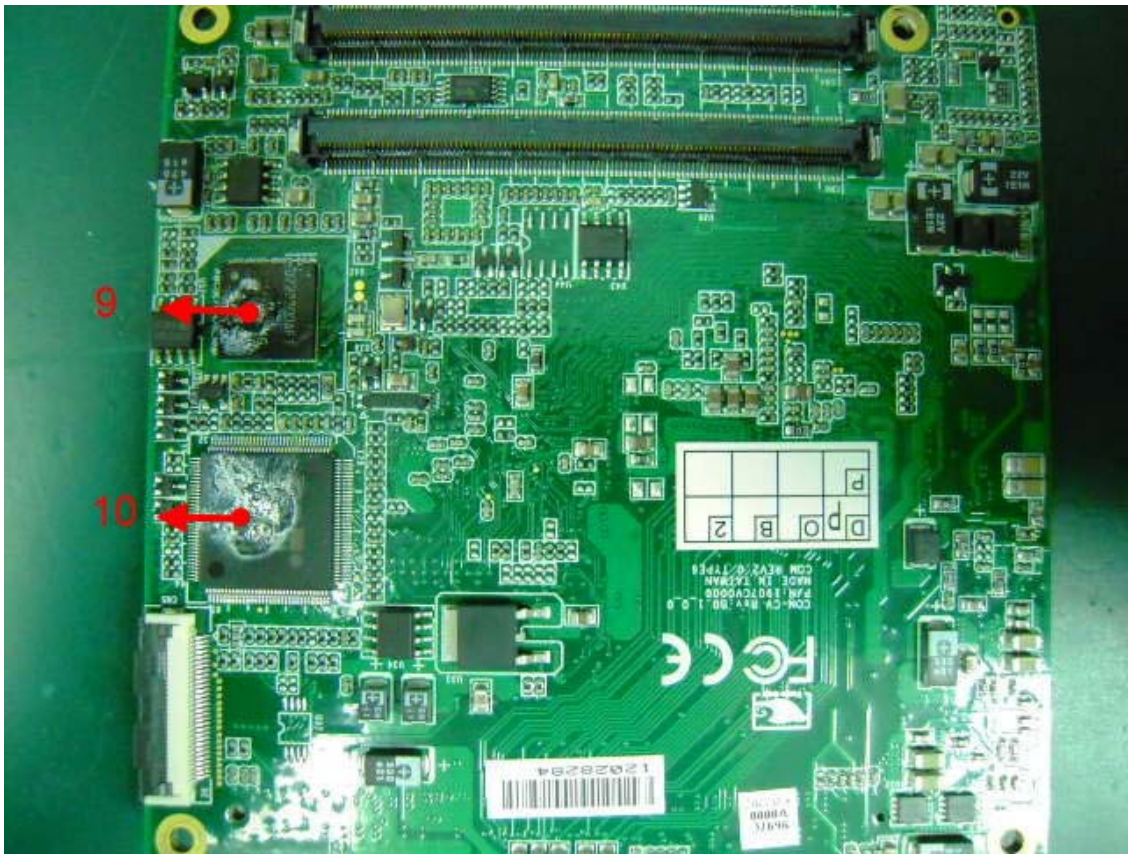




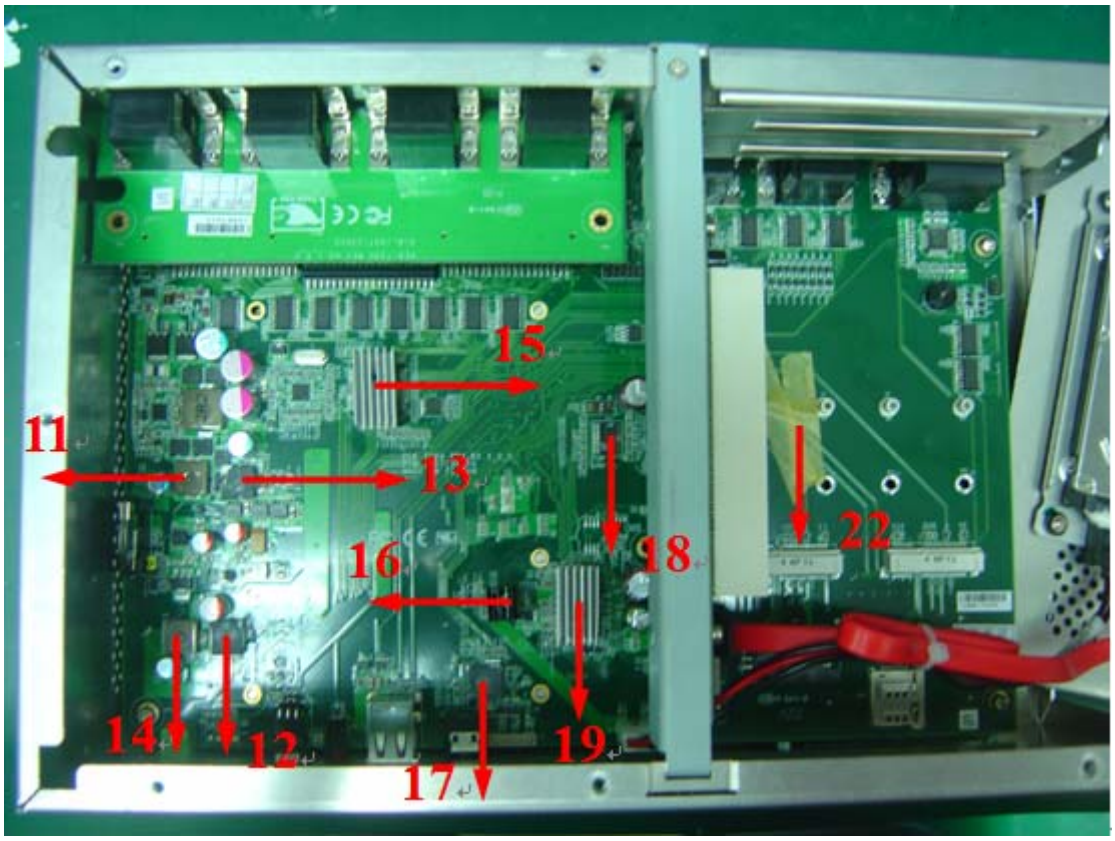
High Temperature Operation test

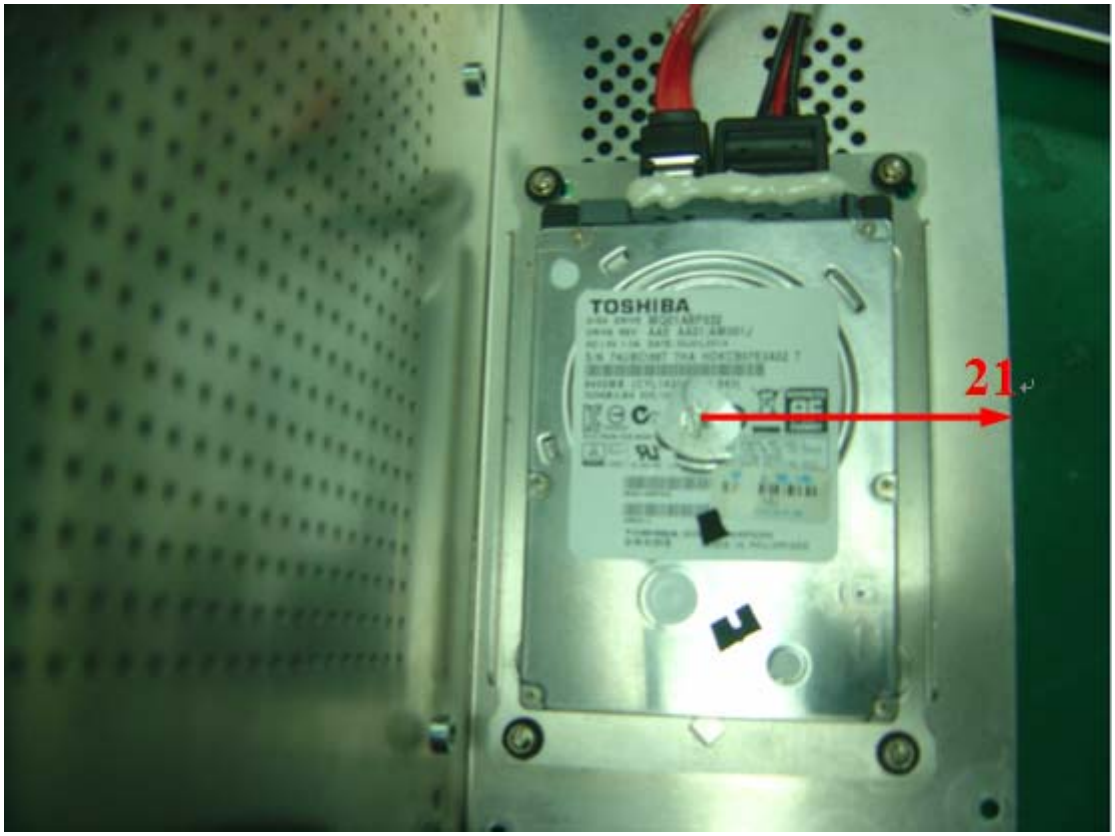
Measuring Thermal Couple Position：





High Temperature Operation test





High Temperature Operation test

High Temperature Operation test

Boxer-6914 (With 0.5m/sec airflow)

Thermal profile data:

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	55℃	
1.	U26	(TF)IC.SMD.WQFN-48L.Dual Single-Phase .Richtek.RT8167AGQW	100	64.5	94.5	**Margin pass**
2.	L1	(TF)COIL.1.5uH.20%.SMD.ZenithTek.ZPWM-6030M-1R5M	125	53.2	83.2	
3.	L12	(TF)COIL.3.3uH.SMD.GOTREND.GSTC063P-3R3MN	125	47.6	77.6	
4.	U14	(TF)INTEL.Cedarview CPU.1.6Ghz.N2600.	100	54.6	84.6	
5.	U45	(TF)IC.SMD.NQG132.132P.4-port.PCI Express Switch.IDT	100	42.2	72.2	
6.	U13	(TF)IC.SMD.NM10 Express Chipset.INTEL.CG82NM10.SLGXX	115	60.7	90.7	
7.	Memory	(TF)DDR3-1066 2GB.SO-DIMM .Samsung.256M x 8bit.K4B2G0846	95	59.5	89.5	
8.	U20	(TF)IC.SMD.TSSOP64P.CLOCKGENERATOR.IDT.9LPRS501PGLF	115	42.5	72.5	
9.	U42	(TF)IC.SMD.FBGA USB3.0 Host Controller.NEC	100	68.1	98.1	**Margin pass**
10.	U35	(TF)IC.SMD.LQFP.128P.Embedded Controller.ITE.IT8518E-L	140	62.4	92.4	
11	L15	(TF)COIL.1.5uH.20%.SMD..ZenithTek.ZPWM-1040MB-1R5M	125	63.6	93.6	
12	U70	(TF)IC.SMD.SOP 8P.Switching PWM Controller.Richtek.RT9214PS	85	54.1	84.1	
13	U71	(TF)IC.SMD.SOP 8P.Switching PWM Controller.Richtek.RT9214PS	85	48.2	78.2	
14	L16	(TF)COIL.2.2uH.20%.SMD.ZenithTek.ZPWM-1040M-2R2M	125	52.9	82.9	
15	U62	(TF)IC.PCI Express Bridge.to 12 Serial Ports.LQFP 128P.Fintek.	100.53	55.8	85.8	
16	U82	(TF)IC.LDO Linear Regulator.0.23V.2A.SOP-8(Exposed Pad).SMD.	100	61.2	91.2	
17	U88	(TF)IC.7.1+2 Channel High Definition.Audio Codec.LQFP 48P.SMD.	85	52.1	85.1	
18	U67	(TF)IC.SMD SSOP 28P.Clock Buffer.ICS.ICS9DB104FLFT	115	58.7	88.7	
19	U107	(TF)IC.PCIe-2.0 4port Switch.QFN-64P.SMD.ASMEDIA.ASM1184e	95	57.5	87.5	
20		(TF)BATTERY.3V.MAXELL.CR2032M1S8-LF	85	49.4	79.4	
21		(TF)2.5".320GB.SATA.5400 rpm.TOSHIBA.MQ01ABF032	85	35.5	65.5	
22		Control Box Inside Air Temperature	NA	37.2	67.2	
23		Control Box outside surface Air Temperature	NA	36.8	66.8	

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.

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 02-22~ 23-2015

Test Product: AEC-6638

Test Site: AAEON QE Dept.

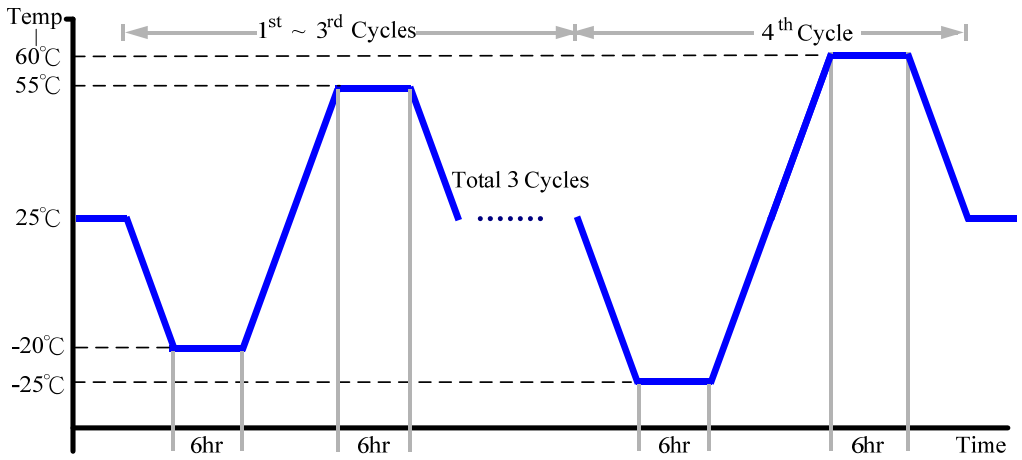
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7S-100+1 N2
Date of Calibration: 03/07/'14
Serial Number: 3898

Test Condition:

1. Test Low Temperature: -20℃ (1~3 cycles)
   -25℃ (4^{th} cycle)
2. Test High Temperature: 55℃ (1~3 cycles)
   60℃ (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-6914)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 02-20~22-2015

Test Product: BOXER-6914

Test Site: AAEON QE Dept.

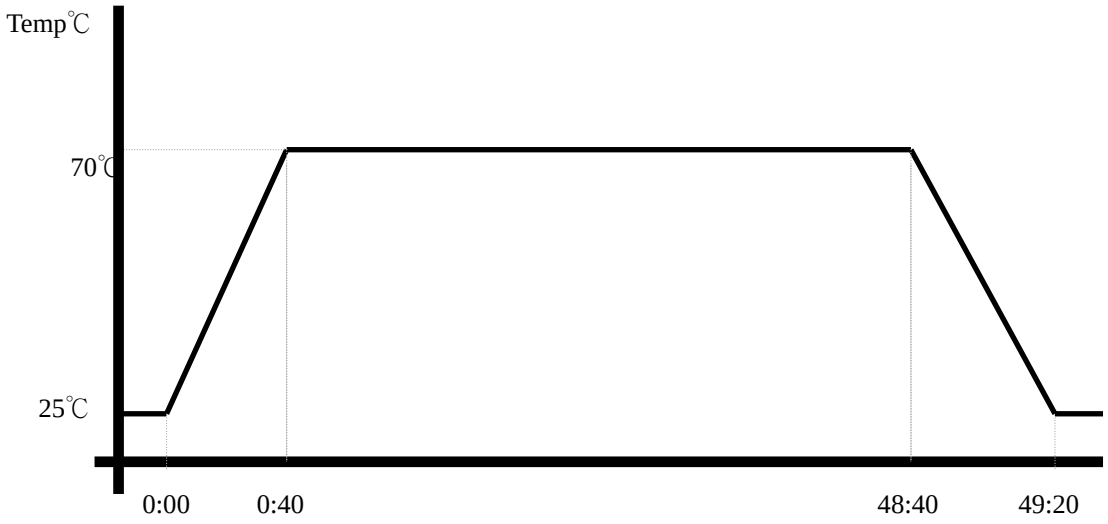
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 03/07/'14
Serial Number: 9095KT

Testing Item:

5. Test Temperature: 70℃
6. Test Times: 48Hrs
7. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
8. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6914)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 02-18~20-2015

Test Product: BOXER-6914

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: 03/07/14
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.1 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6914)

Test Result:

No issues were found after the low temperature storage test.

Humidity test

Test Date: 02-16~18-2015

Test Product: BOXER-6914

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.)

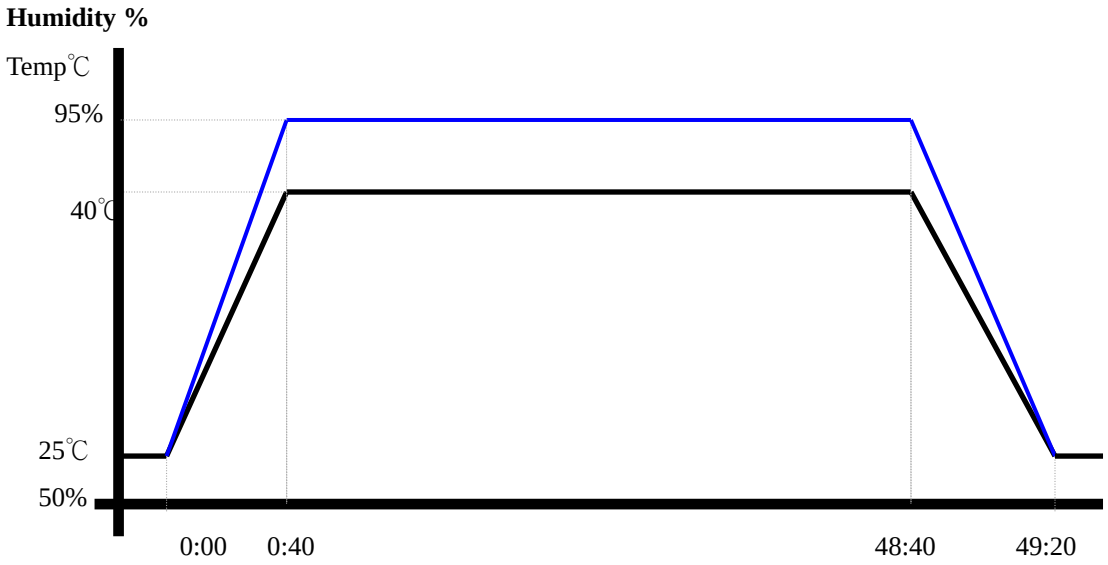
Model: THS-B6T-150+LN2

Date of Calibration: 03/07/14

Serial Number: 9095KT

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 7.1 Pro
5. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (BOXER-6914)

Test Result:

No issues were found after the humidity storage test.

Cold start and hot start test

Test Date: 02-14~ 16-2015

Test Product: BOXER-6914

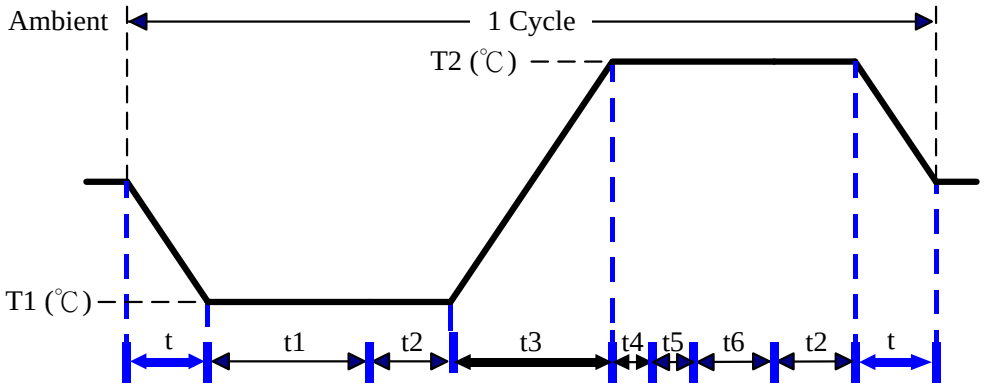
Test Site: AAEON QE Dept.

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-D7S-100+1 N2
Date of Calibration: 03/07/'14
Serial Number: 3898

Test Condition:



Parameters	Description
T1	-20℃
T2	55℃
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 7 Software restart test 2 times
Test Software: Windows 7

Test Result:

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