OMNI-2155-SKU

With 2.5'' SATA HDD

Environment Test Report

Report NO: 16P020012

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:** _____

Issue date	QE Manager	Test Engineer
2016-07-13	**KJ Wang**	**Rex Chang**

Test item list

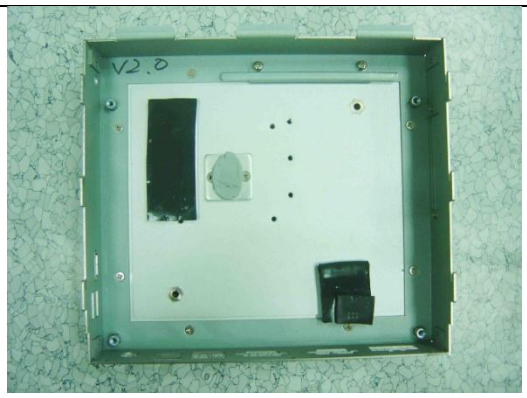
Testing Result

Num	Test item list	Result	Remark
1.	Temp./Humidity Power On/Off Test	Pass	
2.	High Temperature operation test	Pass	
3.	Temperature cycle operation test	Pass	
4.	High temperature storage test	Pass	
5.	Low temperature storage test	Pass	
6.	Humidity test	Pass	
7.	Cold start and hot start test	Pass	

Configuration of EUT

Num	Item	Spec
OMNI-2155-SKU		
1	15.6’’ TFT LCD	AUO.G156XW01V1.1366x768, LED backlight
2	CPU Board	PBA-SKU6 Ver. A0.2
3	CPU	Intel Skylake-U i5-6300U / 3.0GHz
4	BIOS	OMNI-2215SKU R0.4 (OMSKAM04)(06/16/2016)
5	Wide Temp. Memory	Transcend 8GB / DDR4 2133 / SEC K4A4G08 5WE BCPB
6	Wide Temp. 2.5’’ SATA HDD	TOSHIBA MQ01AAD010C / 100GB
7	Test Software	Windows 10 / Run PassMark Burn In Test 8.1 Pro From HDD
8	Adapter	FSP FSP120-ABAN2 / 19V; 6.32A

Photos

Heat Sink	HDD Kit
	

Temp./humidity power on/off test

Test Date: 07-06 ~ 07-2016

Test Product: PBA-SKU6 A0.2

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

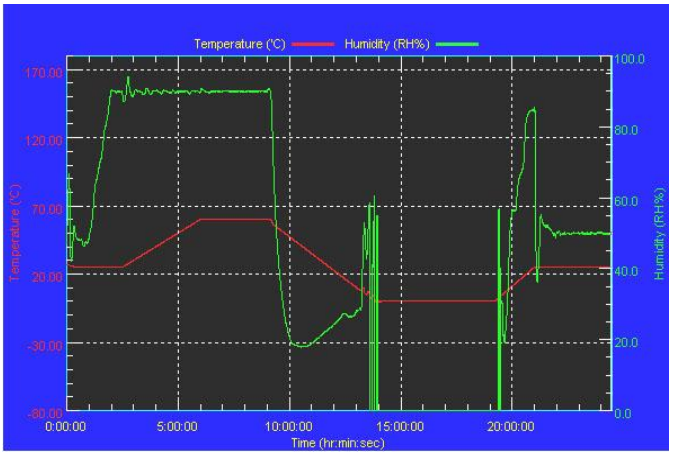
Test Equipment:
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Temperature & Humidity Power On/Off Test:
1. Test High Temp./Humidity: 60℃@90%RH
2. Test Low Temperature: 0℃
3. Test Time: 24Hours / Cycle
4. Test Cycle: 1 Cycles
5. Test Software: DOS Mode / Run Boot Up Record Program ver 1.41

Testing Specification:

Step	Temperature (℃)	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	1182/times	1182/times	0 %	Pass

Note: 1. Failure rate need to under 0%.
2. Power on/off fixture setting: on - 37 sec / off - 37 sec

High Temperature Operation test

Test Date: 07-13-2016

Test Product: OMNI-2155-SKU

Test Site: AAEON QE Dept.

Test Standard: Refer to IEC 68-2-2 Testing procedures

Test Bd: Dry Heat Test (Operation)

Test Equipment:

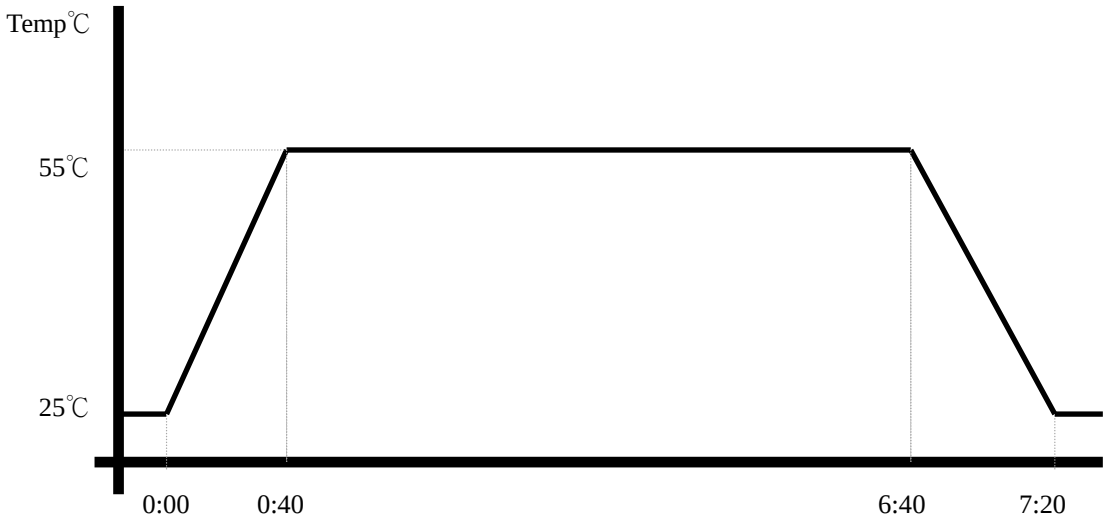
Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Temperature Measurement:

20 Channel Thermal Recorder: (OMRON Inc,)
Model: ZR-RX45
Date of Calibration: 12/18/2015
Due date of Calibration: 12/17/2016
Serial Number: H30481978

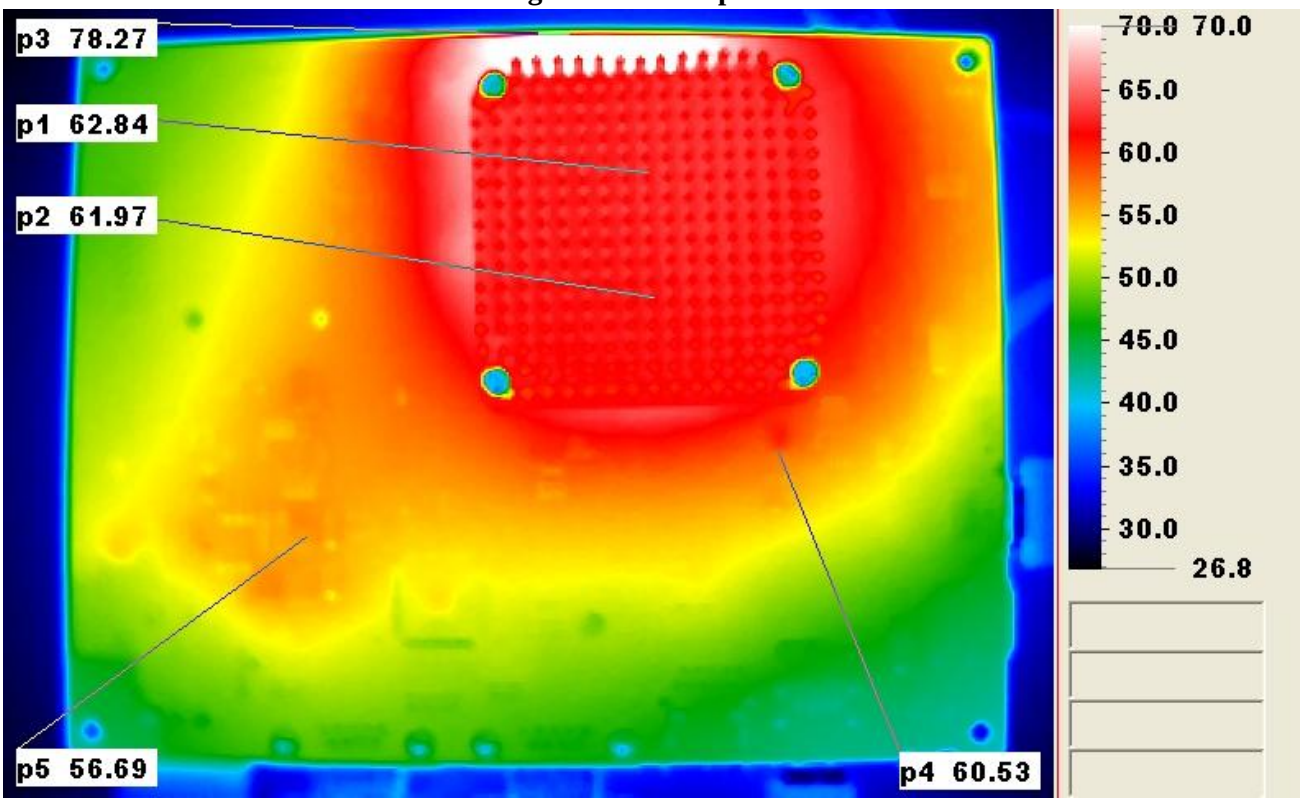
Testing Item:

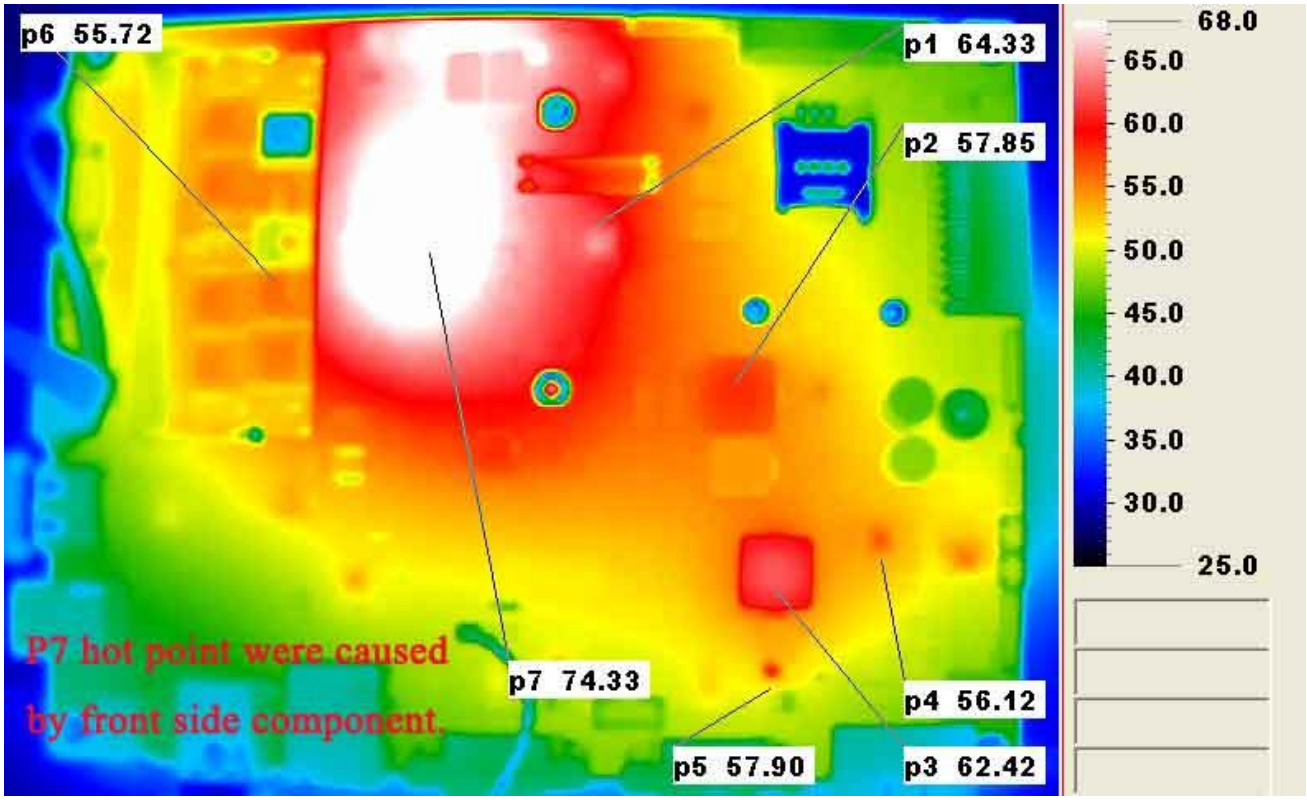
1. Test Temperature: 55℃
2. Test Times: 6Hrs
3. Test Software: Windows 10 Run PassMark Burn In Test 8.1 Pro
4. Test Environment Curve:



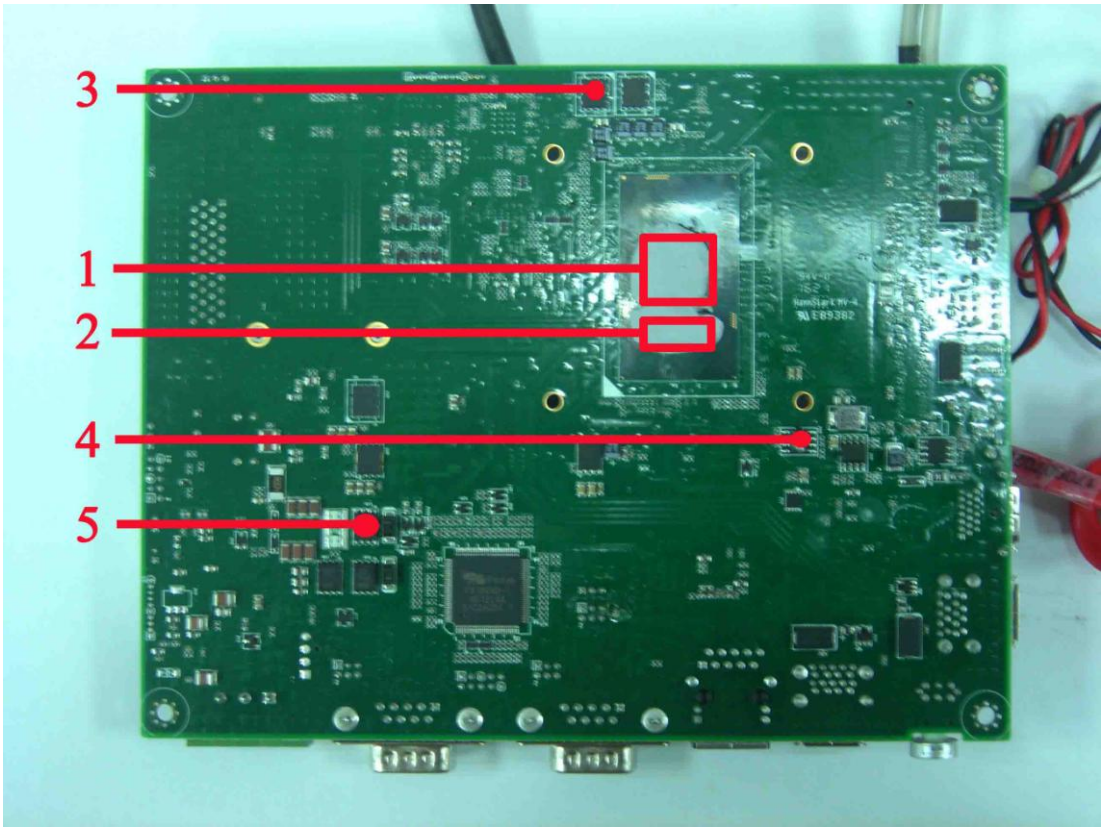
High Temperature Operation test

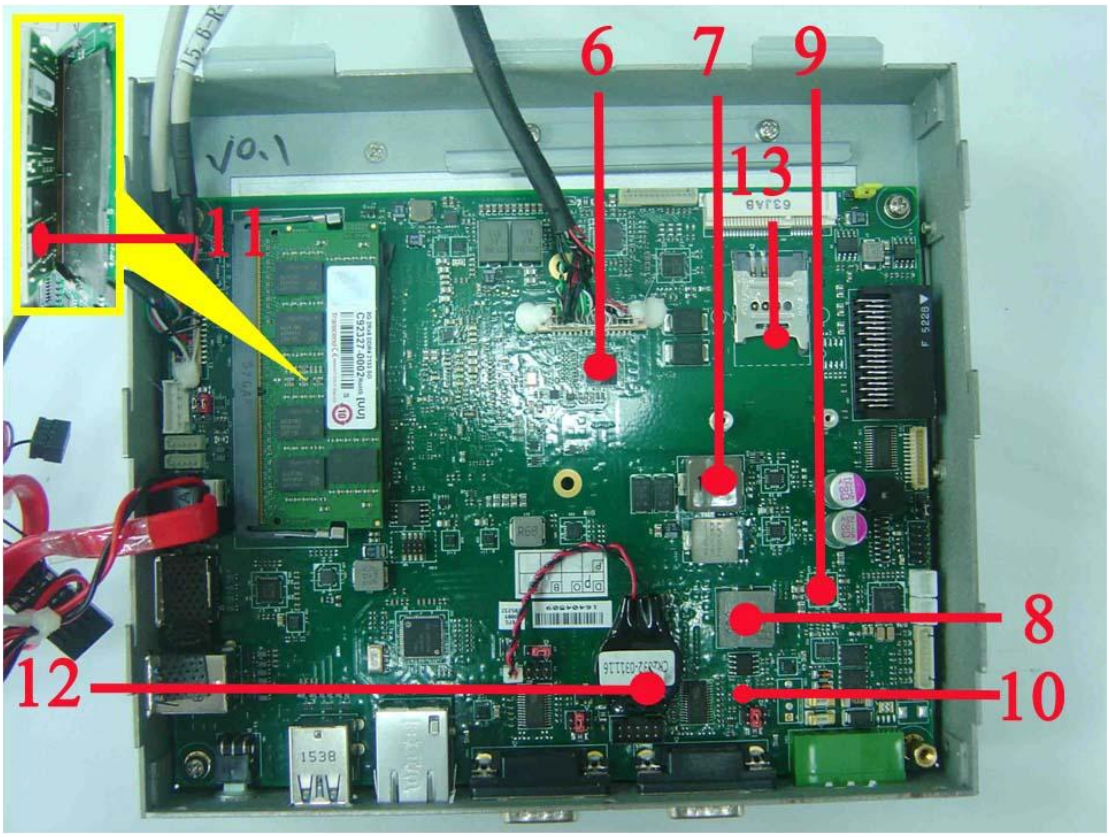
Measuring Thermal Couple Position：



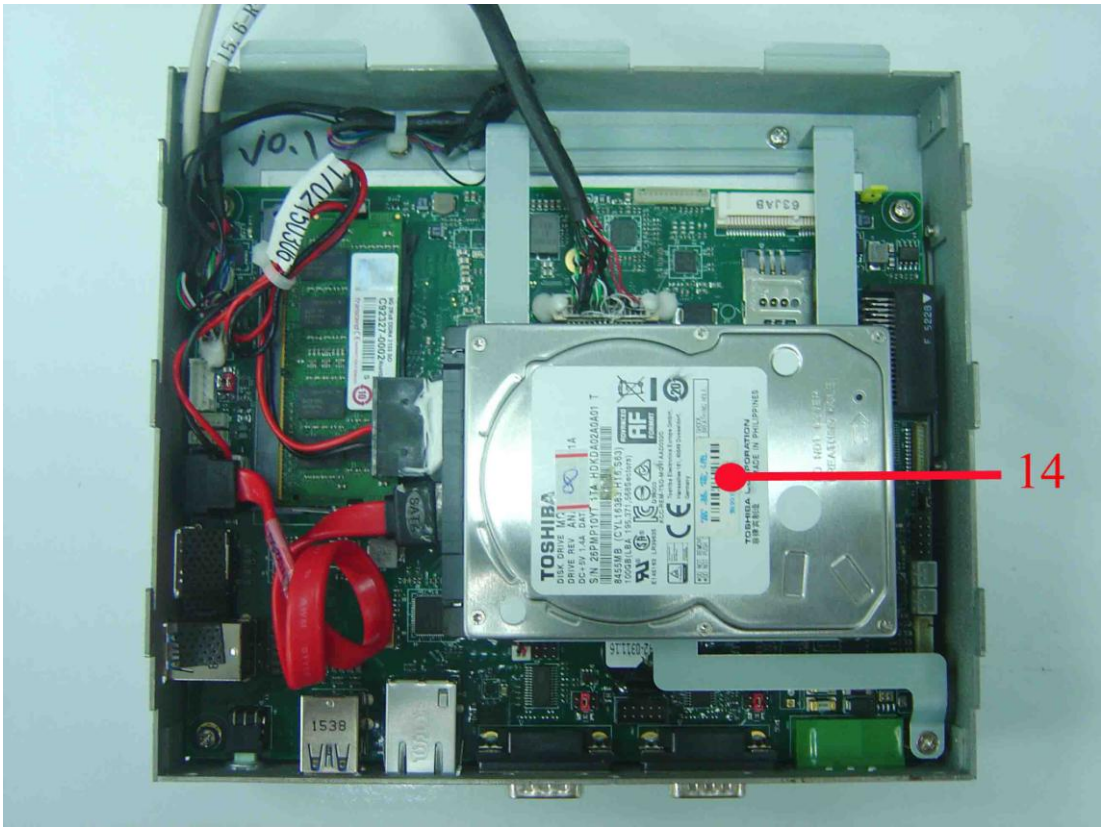


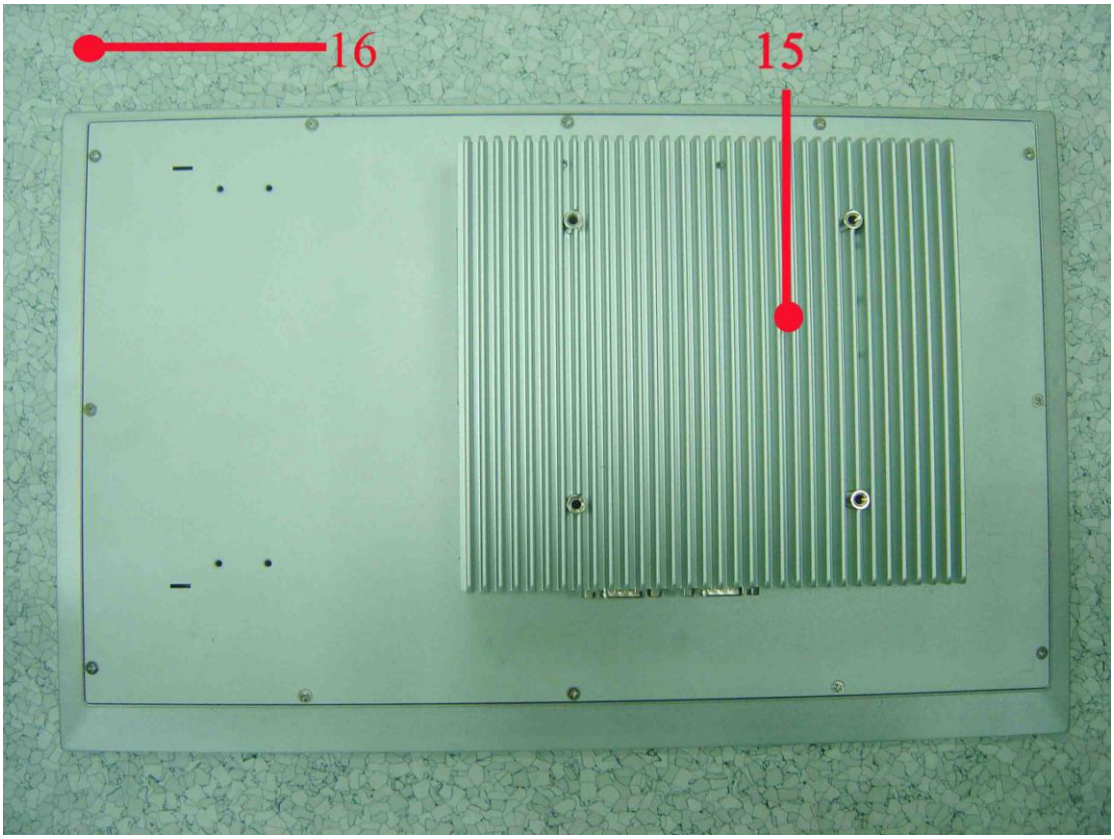
High Temperature Operation test





High Temperature Operation test





High Temperature Operation test

Thermal profile data:

OMNI-2155-SKU (With 0.5m/sec airflow)

Point / Position / Describe — Temp. Stage(℃)	Spec Tc(*1)	TAT(*2) 55	TPT(*3) 25	Note
PBA-SKU6 Ver. A0.2				
01.U43- (TF)INTEL CPU.Skylake-U.3.0GHz.i5-6300U -1	100	86.7	56.7	
02.U43- (TF)INTEL CPU.Skylake-U.3.0GHz.i5-6300U -2	100	82.4	52.4	
03.Q13 - (TF)Dual N-Channel. ON Semi.NTMFD4C85NT1G	125	101.7	71.7	
04.U44 - (TF)Clock Buffer.SOP 8P.SMD.IDT.2305-1HDCGI	85	75.7	45.7	
05.Q33 - (TF)PWR.DUAL. N-MOSFET. FAIRCHILD.FDMS3664S	125	84.8	54.8	
06.U11 - (TF) Display Port to LVDS Converter.NXP.PTN3460IBS/F2MP	98.6	90.1	60.1	
07. L9 - (TF)COIL.1.0uH.GOTREND.GSTD1250PE-1R0M	125	92.7	62.7	
08.L13 - (TF)COIL.2.2uH.GOTREND.GSTC135P-2R2MF	125	92.1	62.1	
09.U29 - (TF)Regulator.Linear.LTC3789EUFD#TRPBF	100	86.5	56.5	
10. U37 - (TF) LOGIC.SINGLE INVERTER GATE.TI.SN74AUC1G04DBVR	85	79.5	49.5	
11. Memory	85	77.4	47.4	
12. Battery - (TF)BATTERY.3V.MAXELL.CR2032M1S8-LF	85	76.6	46.6	
13. Control Box Inside Air Temperature	N/A	84.6	54.6	
14. HDD - Toshiba MQ01AAD010C 100GB	N/A	82.6	52.6	
16. Control Box External Surface Temperature	N/A	66.2	36.2	

Note(*):

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

2. "TAT" indicates the actual measured temperature in chamber.

3. "TPT" indicates the predicted temperature by offset from TAT.

4. Judgment Criteria:

- **Fail** : Tm > Tc; The measured value is over specification plus margin.
- **Margin** : 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.

5. Defect NO.: N/A

Sample Configuration & Quantity Under Test:

Quantity: 1 (OMNI-2155-SKU)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 07-08 ~11-2016

Test Product: OMNI-2155-SKU

Test Site: AAEON QE Dept.

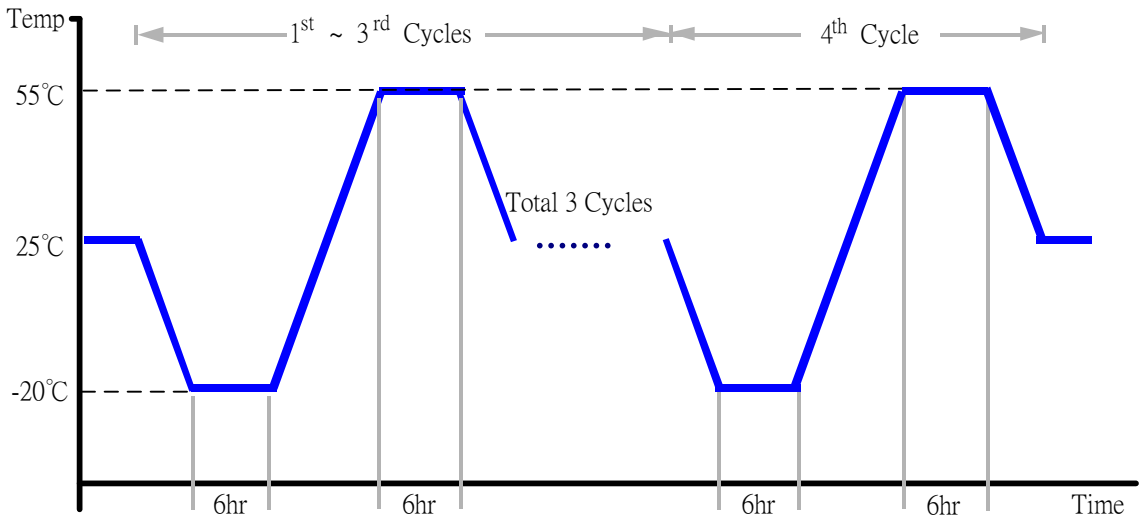
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Test Condition:

1. Test Low Temperature: -20℃
2. Test High Temperature: 55℃
3. Test dwell time: 6Hrs
4. Temperature slope: 2℃/min
5. Test cycle: 4 cycles
6. Test Software: Windows 10 / Run PassMark Burn In Test 8.1 Pro
7. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (OMNI-2155-SKU)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 07-04~ 06-01-2016

Test Product: OMNI-2155-SKU

Test Site: AAEON QE Dept.

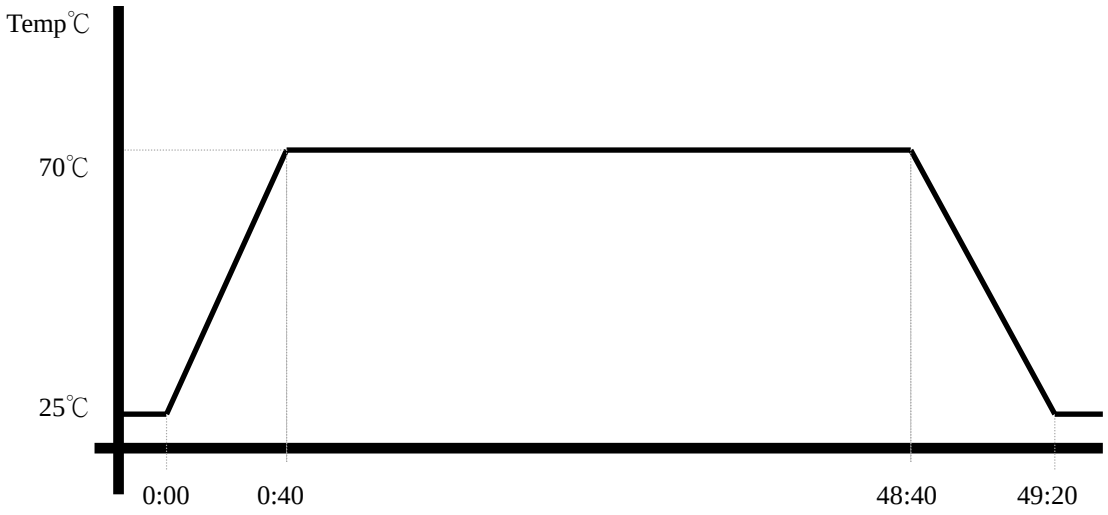
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Testing Item:

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



Sample Configuration & Quantity Under Test:
Quantity: 1 (OMNI-2155-SKU)

Test Result:

No issue was found after the high temperature storage test.

Low temperature storage test

Test Date: 06-28 ~30-2016

Test Product: OMNI-2155-SKU

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-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Environment Curve:

Sample Configuration & Quantity Under Test:

Quantity: 1 (OMNI-2155-SKU)

Test Result:

No issue was found after the low temperature storage test.

Humidity test

Test Date: 07-01 ~ 04-2016

Test Product: OMNI-2155-SKU

Test Site: AAEON QE Dept.

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

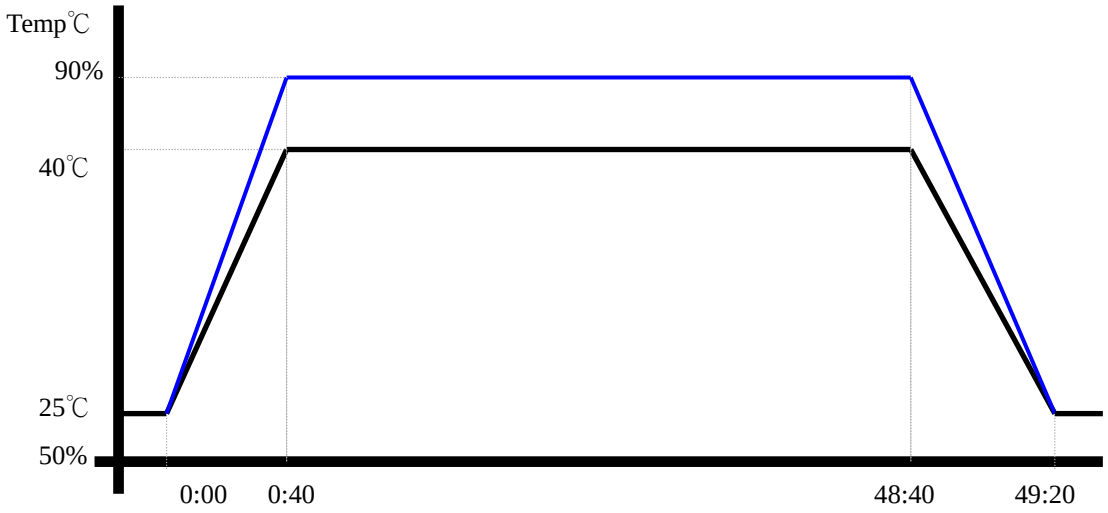
Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-D7TS-100+LN2
Date of Calibration: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 90%RH
3. Test Times: 48Hrs
4. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (OMNI-2155-SKU)

Test Result:
No issue was found after the humidity storage test.

Cold start and hot start test

Test Date: 07-11~ 12-2016

Test Product: OMNI-2155-SKU

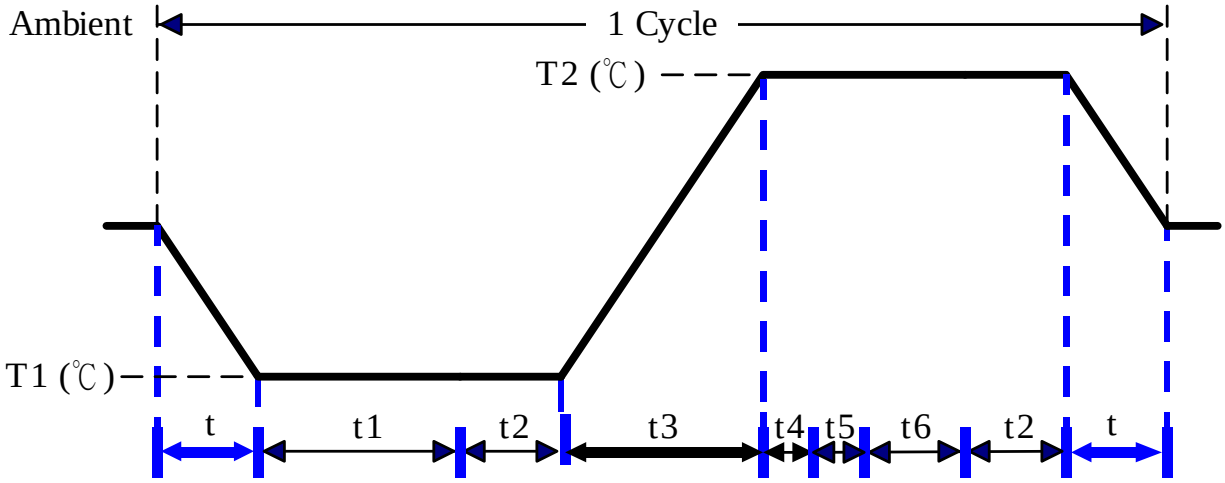
Test Site: AAEON QE Dept.

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: 04/15/16
Due date of Calibration: 04/14/17
Serial Number: A0639

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 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.