AIOT-IVM01

Environment Test Report

Report NO : 17D020001

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
2017-01-20	**KJ Wang**	**Rex Chang/Juno**

Test item list

1. *Test item list* ---------- *2*
2. *Configuration of EUT* ---------- *3*
3. *Temperature rise test* ---------- *4*
4. *Temperature cycle operation test* ---------- *11*
5. *Cold start and hot start test* ---------- *12*

Testing Result

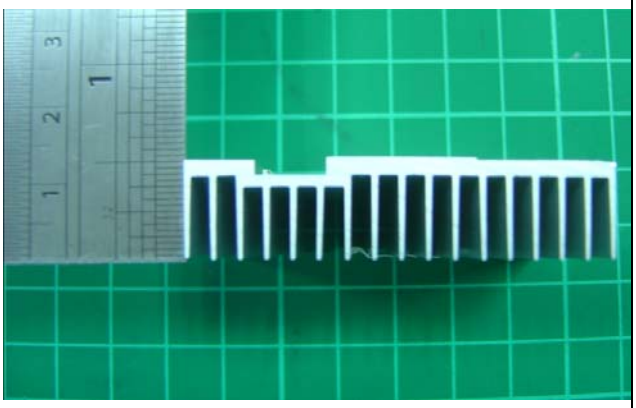
Num	Test item list	Result	Remark
1	Temperature rise test	Pass	
2	Temperature cycleoperation test	Pass	
3	Cold start and hot start test	Pass	

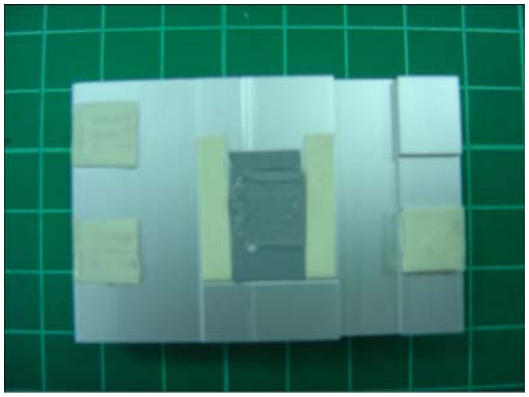
Configuration of EUT

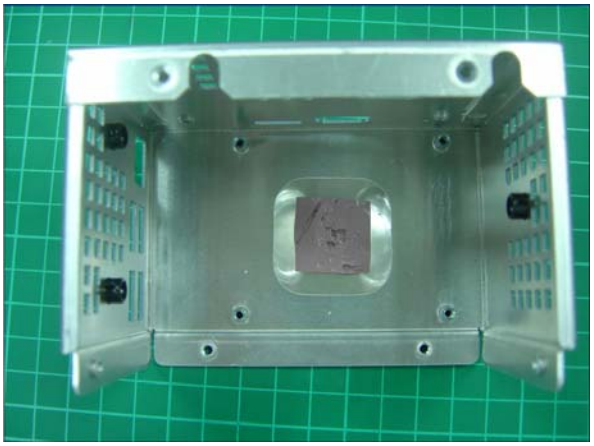
Num	Item	Spec
1.	**Fanless System**	AIOT-IVM01 A1.0
	1. Main Board	UP-CHT01 A0.3 + UP-3GHAT01 A0.2 + VEND-HAT01 A0.3
	2. BIOS Ver.	AIOT-IVM01 R0.2(ACH1AM02)
	3. CPU Type	Intel Atom x5-Z8350/1.44GHz
	4. OnboardMemory	Nanya NT5CC256M16DP-DI 2GB*2
	5. Onboard eMMC	eMMC. Kingston.EMMC32G-M525-A51. 32GB
	6. Test Software	Windows 10 / Run PassMark Burn In Test 8.1 Pro
2.	**Adapter:**	FSP060-DBAE1/ 12V, 5.0A (60W)

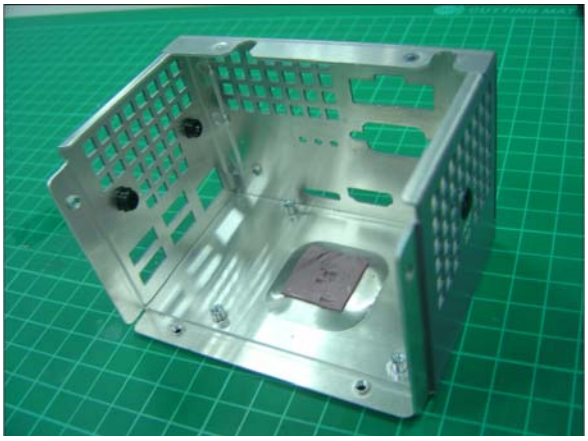
Photos

Heat Sink









Temperature rise test

Test Date : 01- 20-2017

Test Product : AIOT-IVM01

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: 10/06/16
Due date of Calibration: 10/05/17
Serial Number: 12A323190

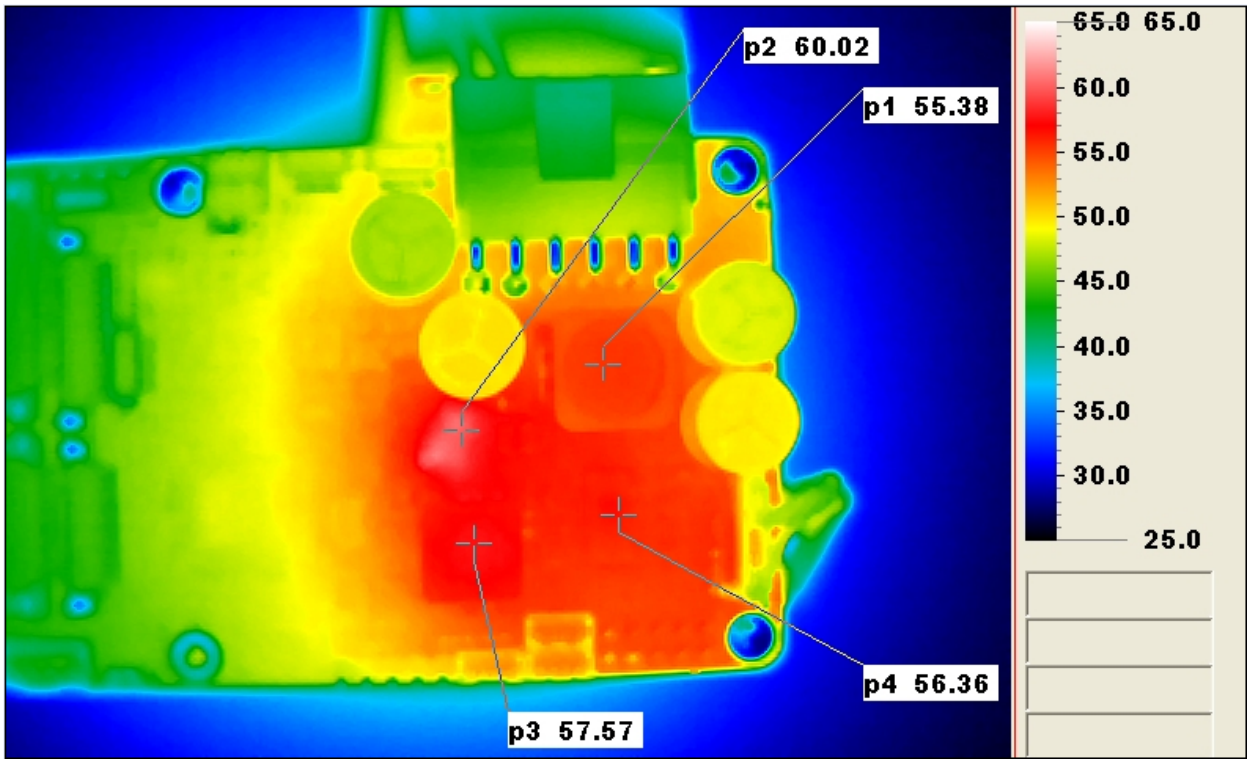
Test Condition:

Ambient temperature: 40℃
Continuous running till thermal stability (within less than 1℃)

Test Software:

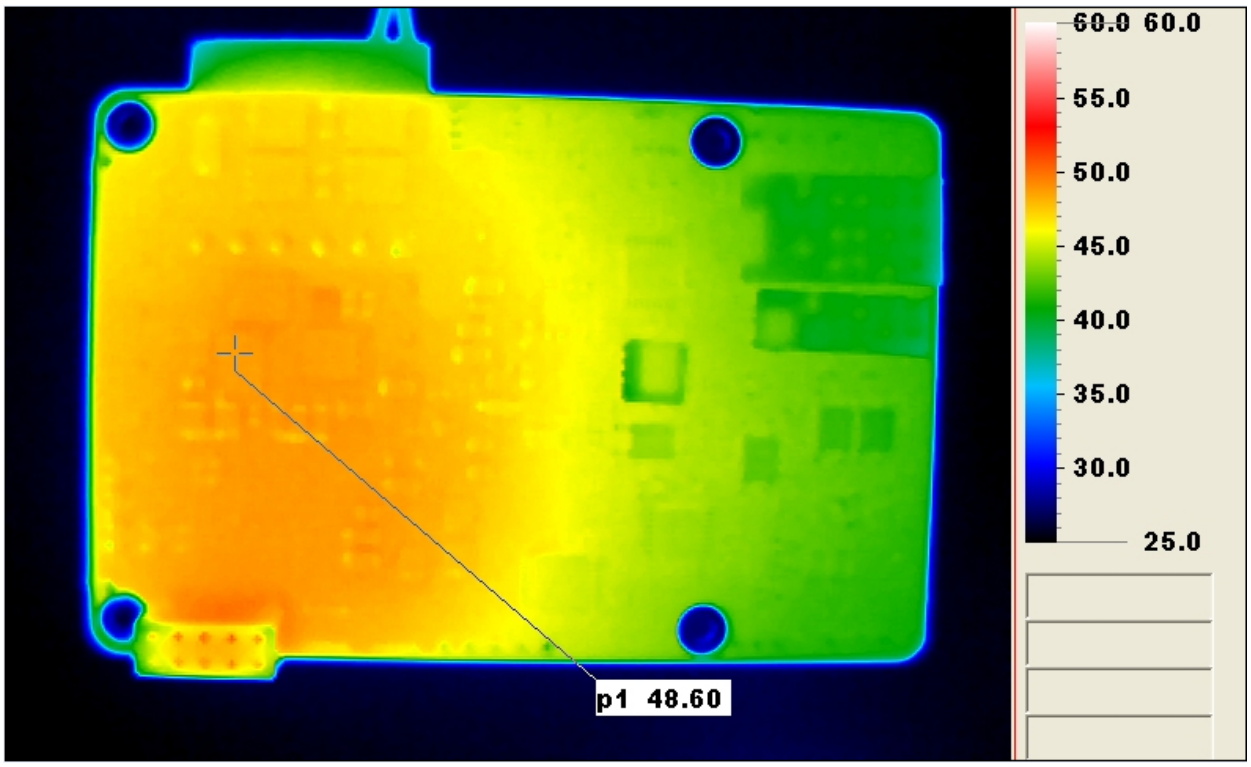
Windows 10 / Run PassMark Burn In Test 8.1 Pro

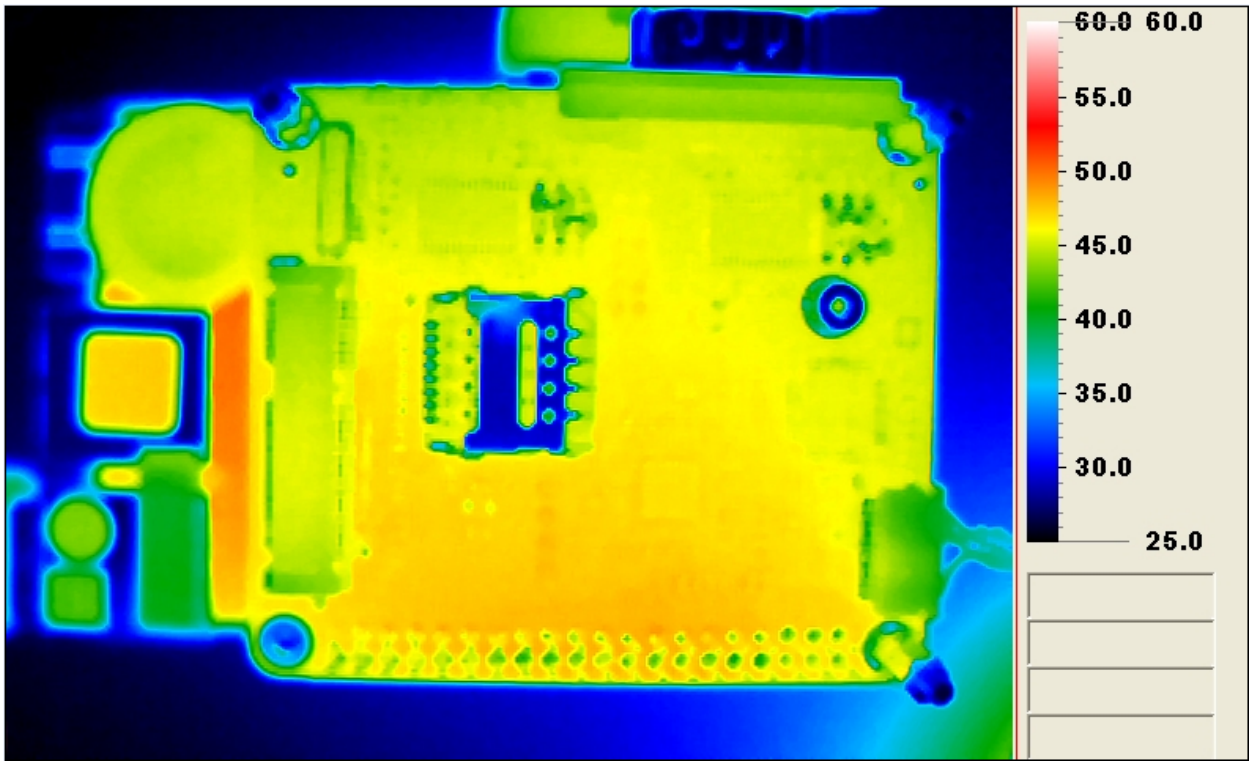
Terminal Recorder:



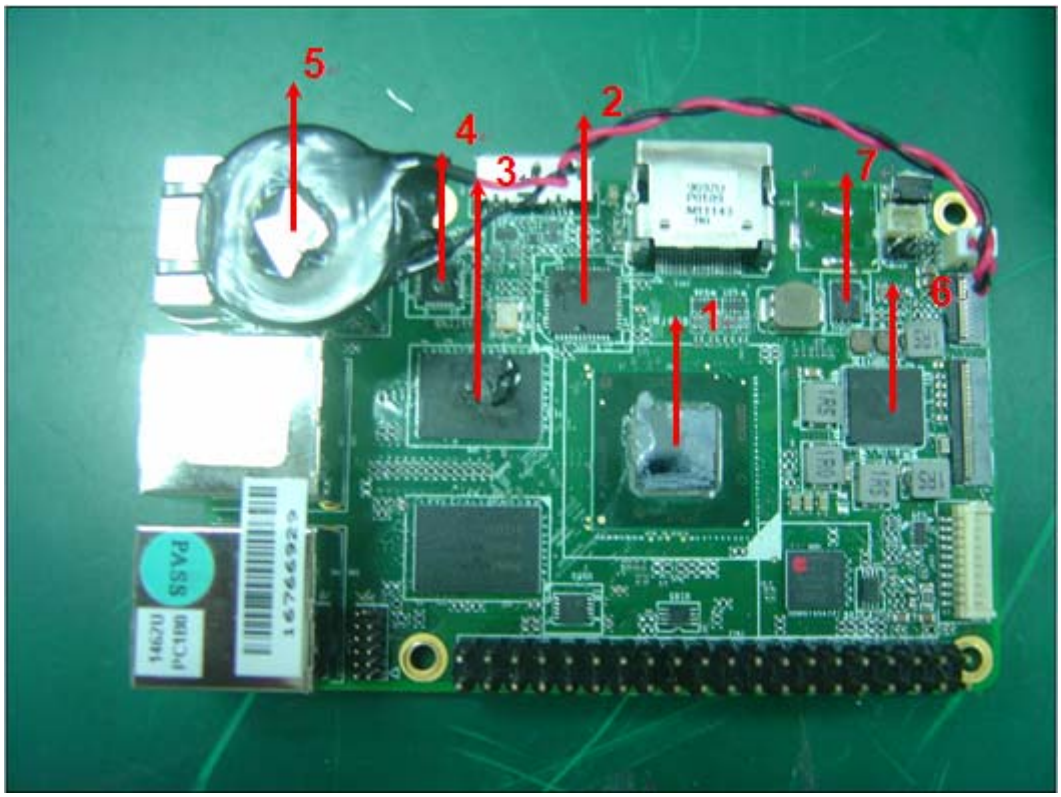
Temperature rise test

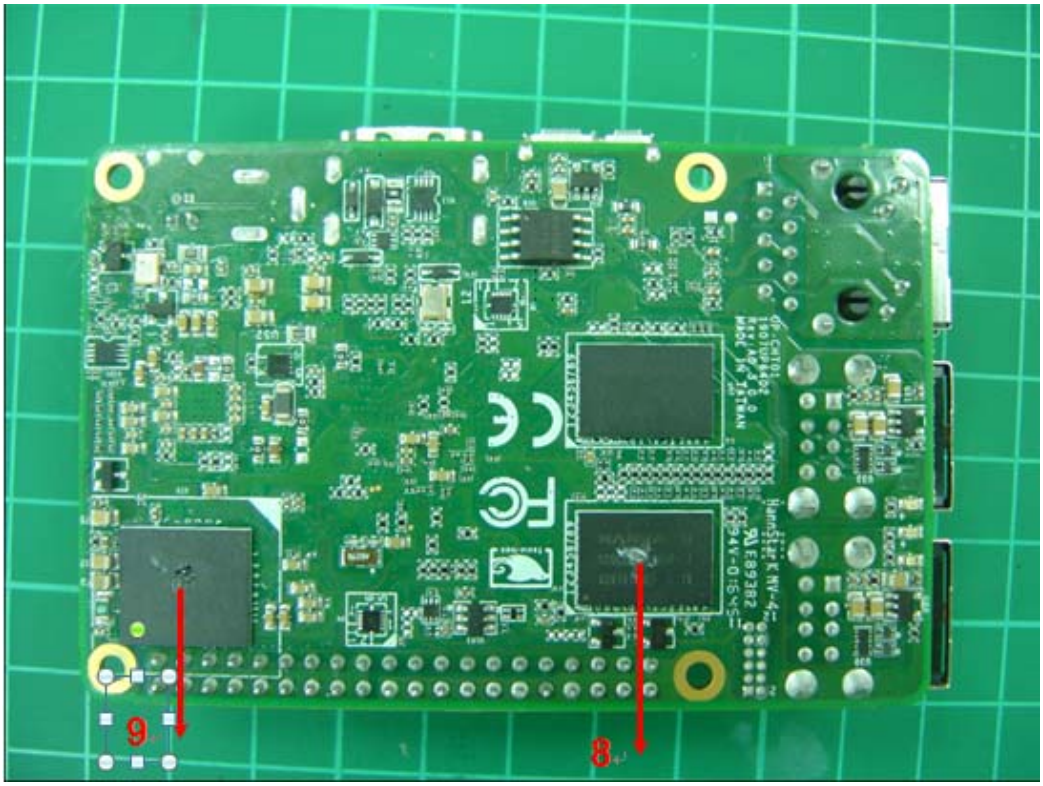
Terminal Recorder:



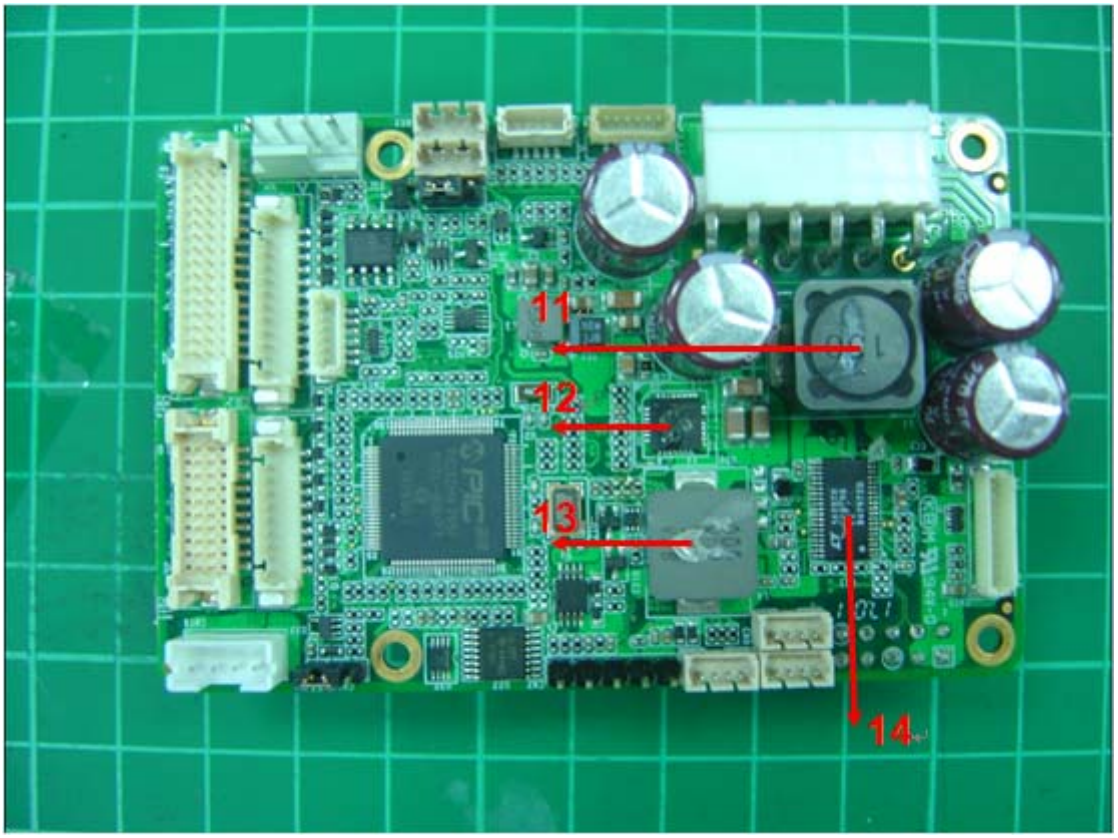


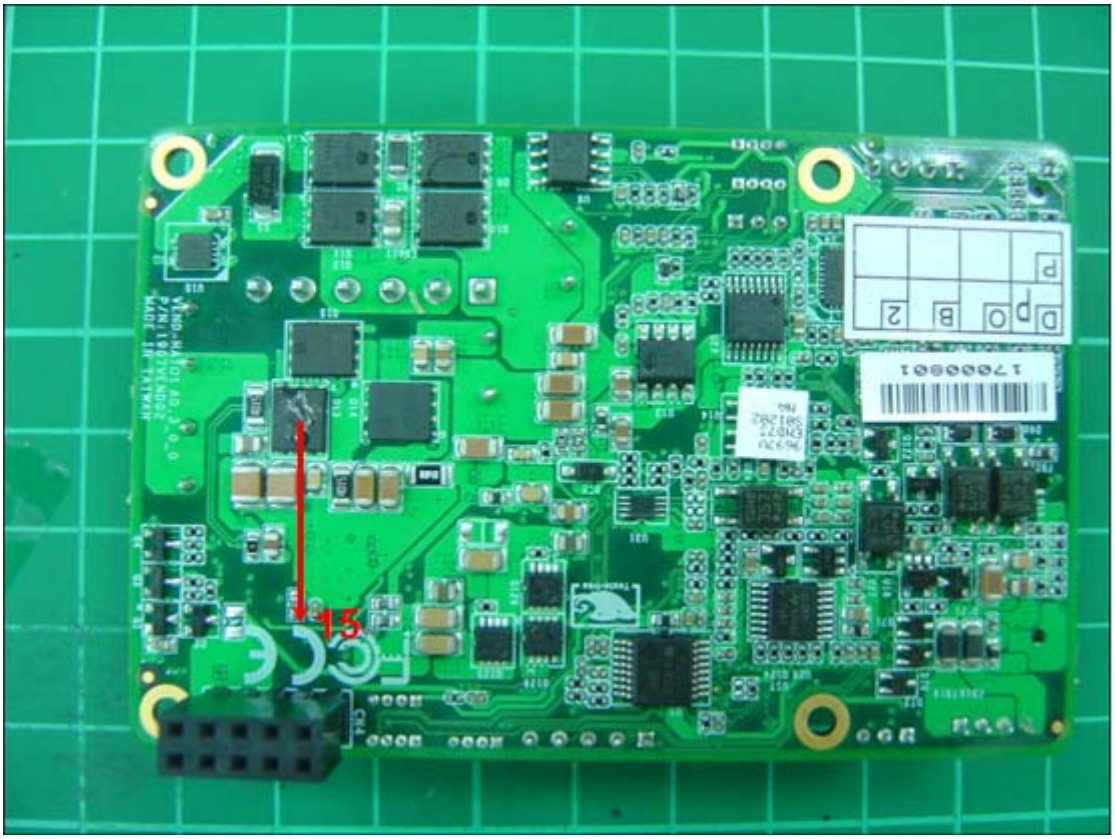
Temperature rise test



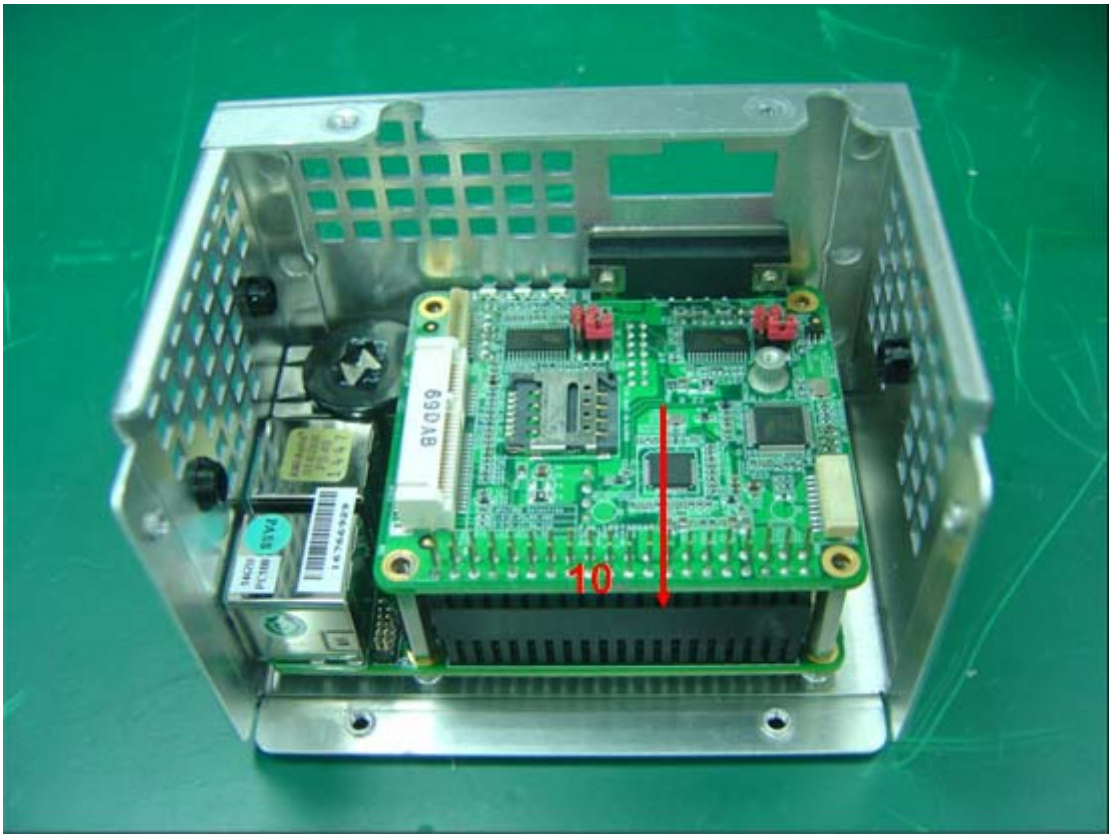


Temperature rise test





Temperature rise test



Temperature rise test

Thermal profile data:

AIOT-IVM01

Point Temp. Stage(℃)	Spec Tc(*1)	TAT(*2) 40	TPT(*3) 25	Note
01. (TF)INTEL CPU.SOC.Cherry Trail-T3.x5-Z8350.1.92GHz.	90	76.0	61.0	
02. (TF)IC.HSIC controller.QFN SMD.SMSC.USB4604-1080HN-TR	100	74.7	59.7	
03. (TF)IC.4G.DDR3L-1600.SDRAM.l.SMD.NANYA.NT5CC256M16DP-DI	95	74.9	59.9	
04. (TF)IC.PCI-express.Gigabit Ethernet Chip. REALTEK.RTL8111G-CG	100	74.6	59.6	
05.(TF)Lithium Battery.CR2032Hw/cable 90mmBP-CR2032-M90-001	85	67.0	52.0	
06. (TF)IC.PMIC for Intel Cherry Trail.CR Platform.TI.SND9039A2CTRSKR	100	79.1	64.1	
07. (TF)IC.Synchronoustep down.SMD.MPS.MP8762GLE-Z	100	77.0	62.0	
08. (TF)IC.4G.DDR3L-1600.SDRAM.SMD.NANYA.NT5CC256M16DP-DI	95	72.2	57.2	
09. (TF)IC.eMMCFlash.SMD.Kingston.EMMC32G-M525-A51	100	74.5	59.5	
10. Control Box Inside Air Temperature	NA	76.5	61.5	
11. L1 - COIL.SMD.GOTREND.GSDRH-127-P-T-150M	105	81.4	66.4	
12.U30 - (TF)IC.Synchronous Step down.SMD.EXAR.XR76208ELMTR-F	105	85.5	70.5	
13.L4 - (TF)COIL..SMD.CYNTEC.PCMB104E-3R3MS	105	85.8	70.5	
14.U11 - (TF)IC.Switch Buck-Boost Controller.LINEAR.LT3790EFE#TRPBF	105	81.6	66.6	
15.Q14 - TF)Dual N-Channel.EDFN5*6.SMD.Excelliance.EMB09K03HP	125	79.7	64.7	

Note(*):
1. **"Tc"** indicates the component's case maximum temperature value specified in its datasheet.
2. **"TAT"** indicates the actual measured temperatureunder 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 Pas: 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(AIOT-IVM01)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date : 01-17~ 19-2017

Test Product : AIOT-IVM01

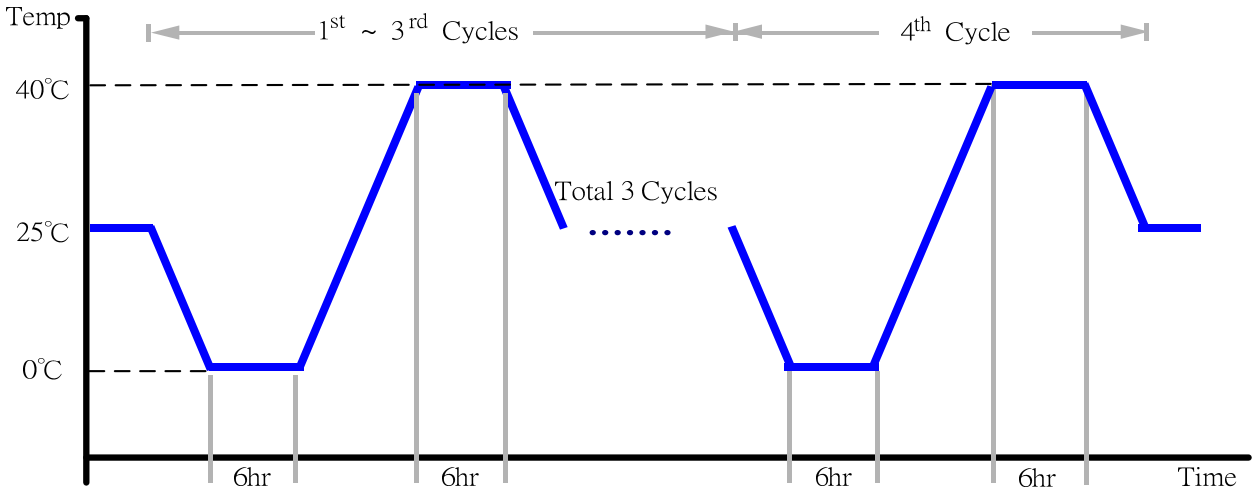
Test Site : AAEON QEDept.

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: 04/25/16
Due date of Calibration: 04/24/17
Serial Number: 6488KT

Test Condition:

1. Test Low Temperature: 0℃
2. Test High Temperature: 40℃
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 (AIOT-IVM01)

Test Result:

No issues were found during the temperature operation cycle test.

Cold start and hot start test

Test Date : 01-15~16-2017

Test Product : AIOT-IVM01

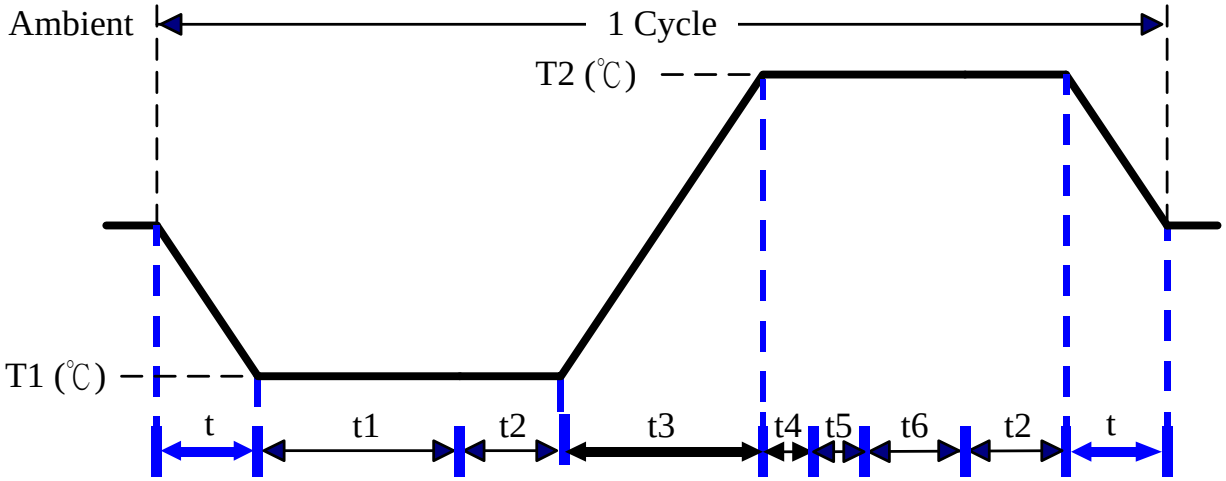
Test Site : AAEON QEDept.

Test Standard : Refer toIEC 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: 04/25/16
Due date of Calibration: 04/24/17
Serial Number: 6488KT

Test Condition:



Parameters	Description
T1	0℃
T2	40℃
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 issueswere found during the hot start test.