DSS-CV20

Environment Test Report

Report NO: 12I020035

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	Approval	Test Engineer
2012-12-17	**Tom Lin**	**Rex Chang**

Test item list

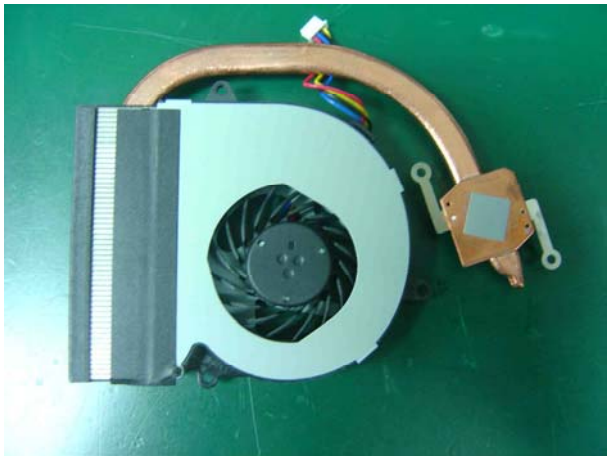
Testing Result

Num	Test item list	Result	Remark
1	Temp./Humidity power on/off test	Pass	
2	Temperature rise 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
1.	System:	DSS-CV20
	1.Main board	ASUS E81030 Rev 1.01
	2.BIOS	0401(04/10/2012)
	3.CPU Type	On board Intel Atom D2550 / 1.86GHz
	4.USB Flash:	Transcend 4GB (For DOS Mode Power On/Off Test)
	5.Wide Temp. Memory	DSL 2GB * 2 / DDR3-1066 / ELPIDA J1108BDSE-DJ-F
	6.Industrial SATA HDD	TOSHIBA MK160GSCX / 200GB
	7.Test Software	Windows 7 / Run BurnIn test 7.0 Pro
2.	Adapter:	FSP065-RAB / DC 19V / 3.42A

CPU Cooler



Temp./humidity power on/off test

Test Date: 12-10 ~ 11-2012

Test Product: ASUS E81030 Rev 1.01 (Main Board)

Test Site: AAEON QE Dept.

Test Standard: Refer to IEC 68-2-30 Testing procedures
Test Db: Damp Heat Test

Test Equipment:

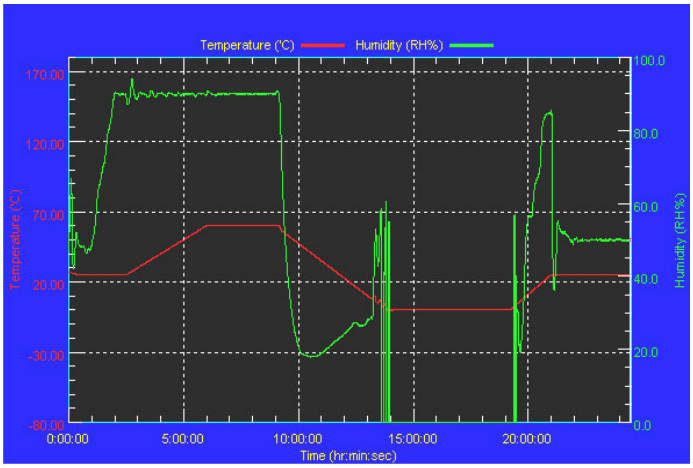
Programmable Temperature & Humidity Chamber (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 03/08/12
Serial Number: 6487KT

Temperature & Humidity Power On/Off Test:

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:

Test Method	Actual	Successful	Failure rate
Power On/Off	1109/times	1109/times	0 %
Note: Failure rate need to under 0.2%.			

Temperature rise test

Test Date: 12-14-2012

Test Product: DSS-CV20

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: 10/08/12
Serial Number: 12A323190

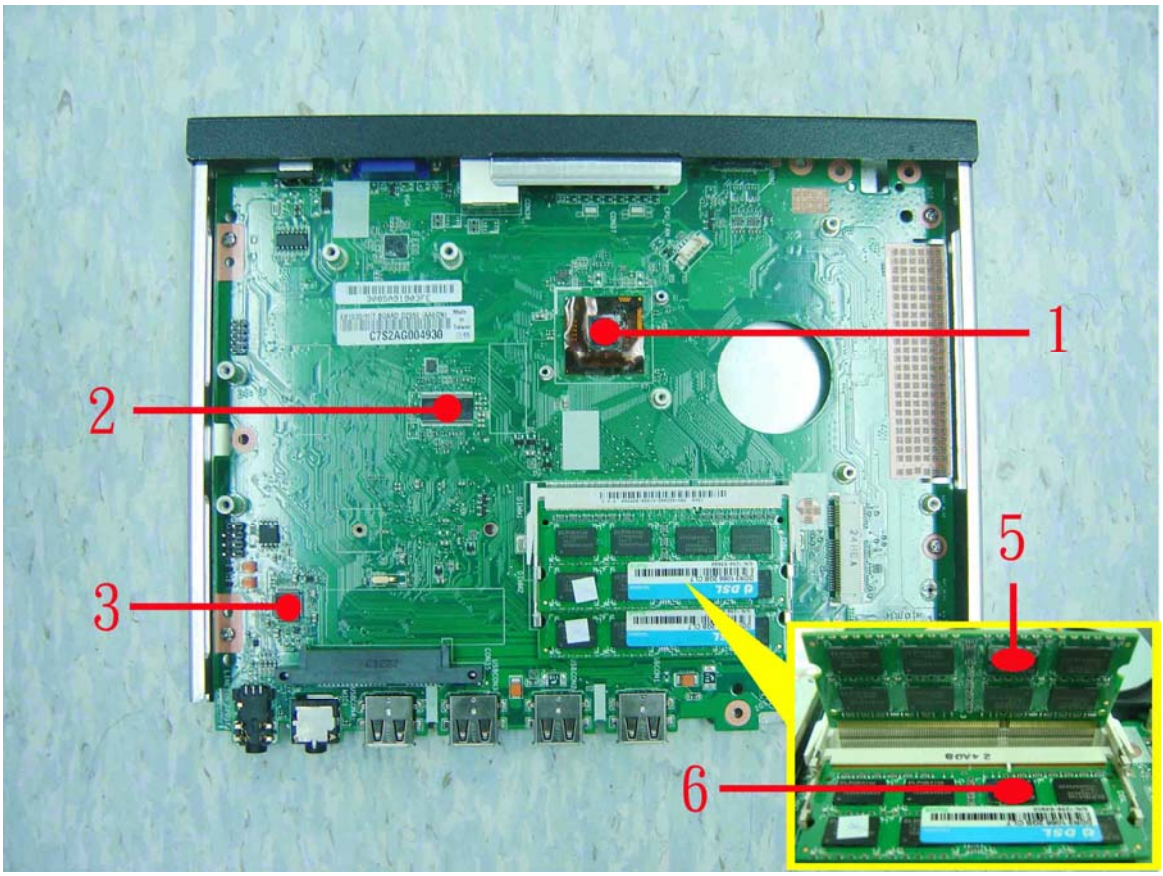
Test Condition:

Ambient temperature: 45℃
Continuous running till thermal stability (within less than 1℃)

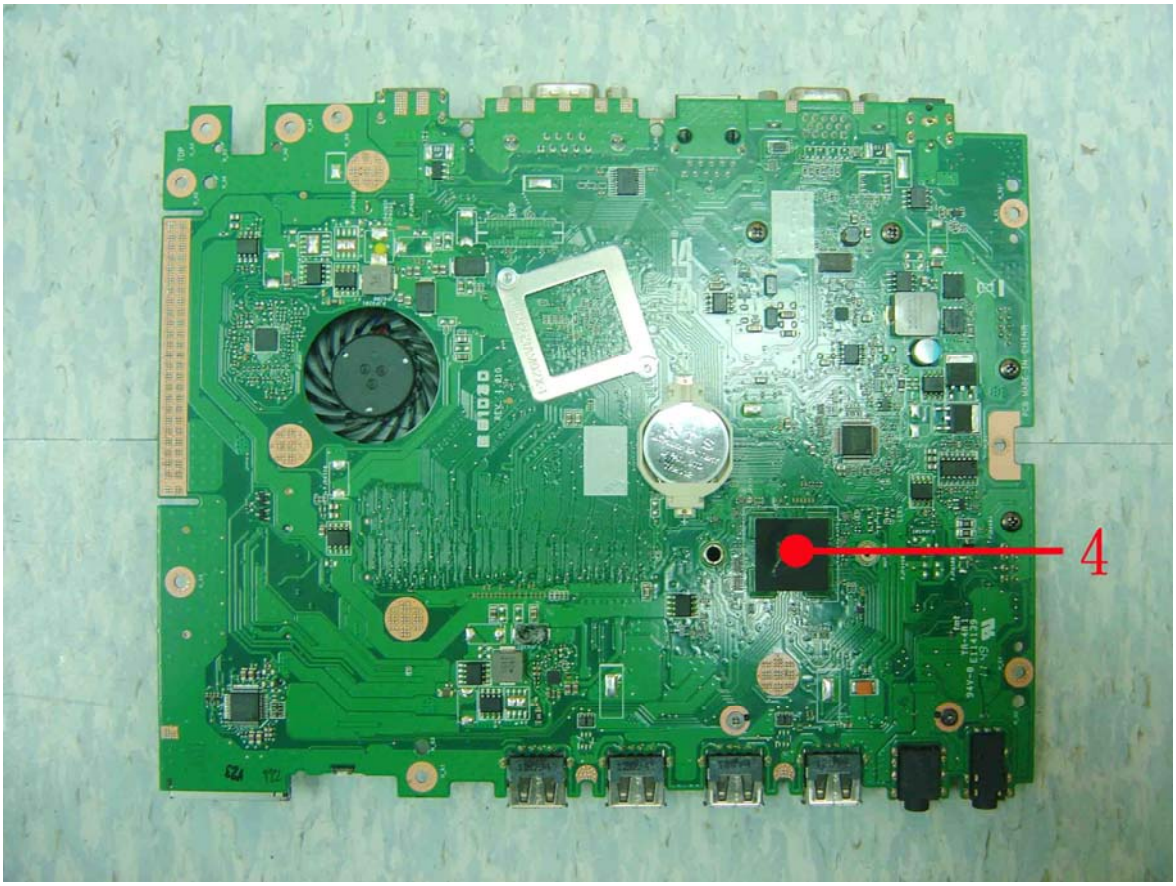
Test Software:

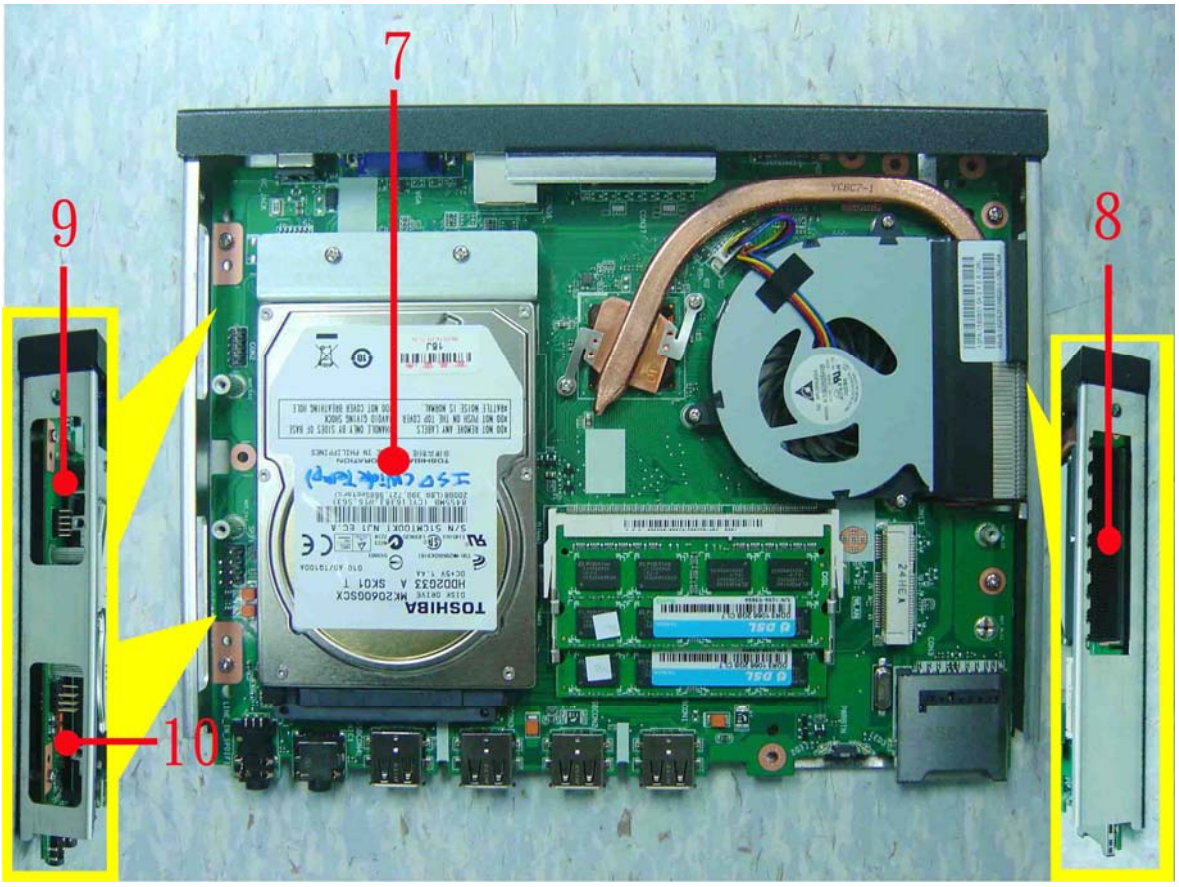
Windows 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:

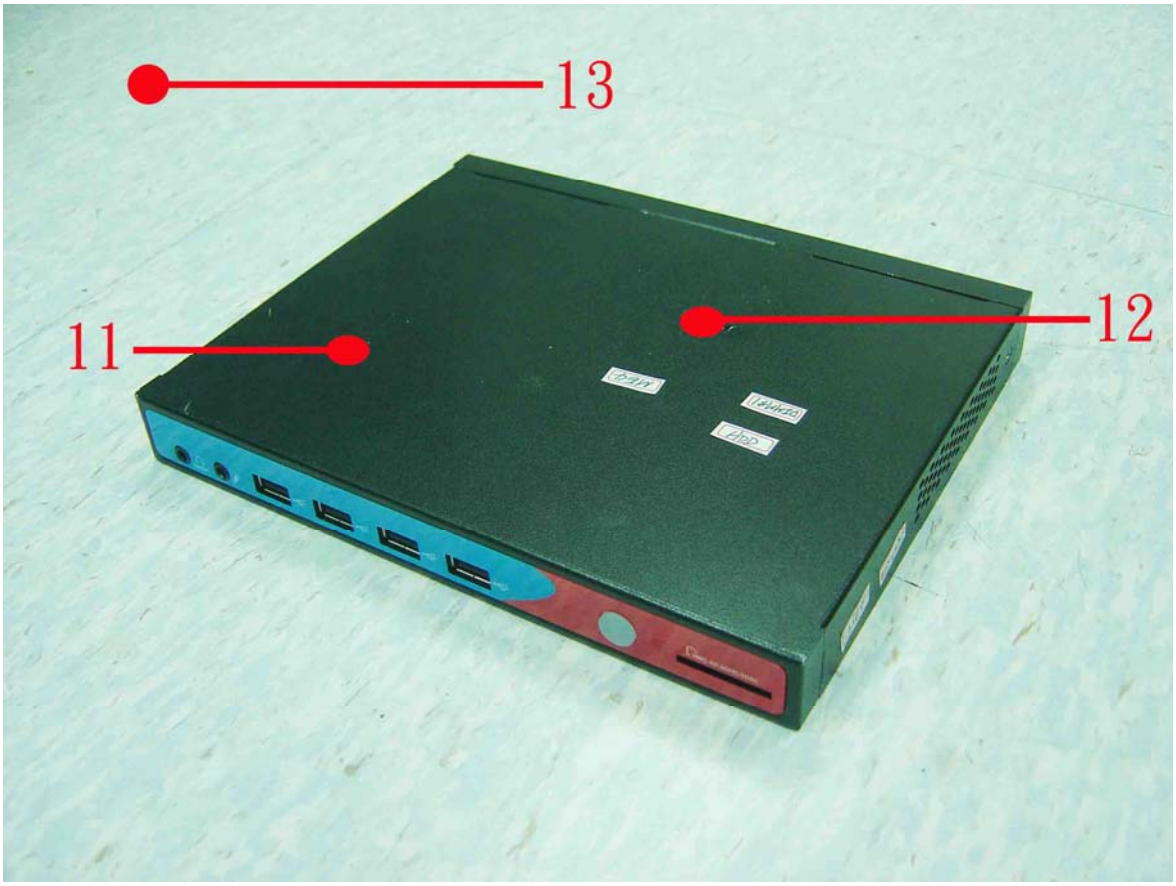


Temperature rise test





Temperature rise test



Thermal profile data:

DSS-CV20

Point / Temp. Stage(℃)	Spec	45	25	Note
01. CU1 - Intel Atom D2550 1.86GHz	100	66.2	46.2	
02. CGU – Clock Gen. 9LPRS432	115	75.8	55.8	
03. AU1 - (TF) Audio Codec. output.SMD.Realtek.ALC887-VD2-CG	100.5	59.1	39.1	
04. C.S CG82NM10 903500 INT TIGERPOINT NM10 SLGXX [HF].SMD	115	96.4	76.4	
05. Memory Chipset - 1	95	81.4	61.4	
06. Memory Chipset - 2	95	81.8	61.8	
07. HDD	85	57.8	37.8	
08. Control Box Inside Air Temperature - 1	N/A	62.6	42.6	
09. Control Box Inside Air Temperature - 2	N/A	46.7	26.7	
10. Control Box Inside Air Temperature - 3	N/A	47.5	27.5	
11. Control Box Surface Temperature - 1	N/A	50.5	30.5	
12. Control Box Surface Temperature - 2	N/A	52.8	32.8	
13. Chamber Air Temperature	N/A	45.1	25.1	

Temperature rise test

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.

Sample Configuration & Quantity Under Test:

Quantity: 1 (DSS-CV20)

Test Result:

No issues were found during the temperature rise operation test.

Temperature cycle test

Test Date: 12-07 ~ 10-2012

Test Product: DSS-CV20

Test Site: AAEON QE Dept.

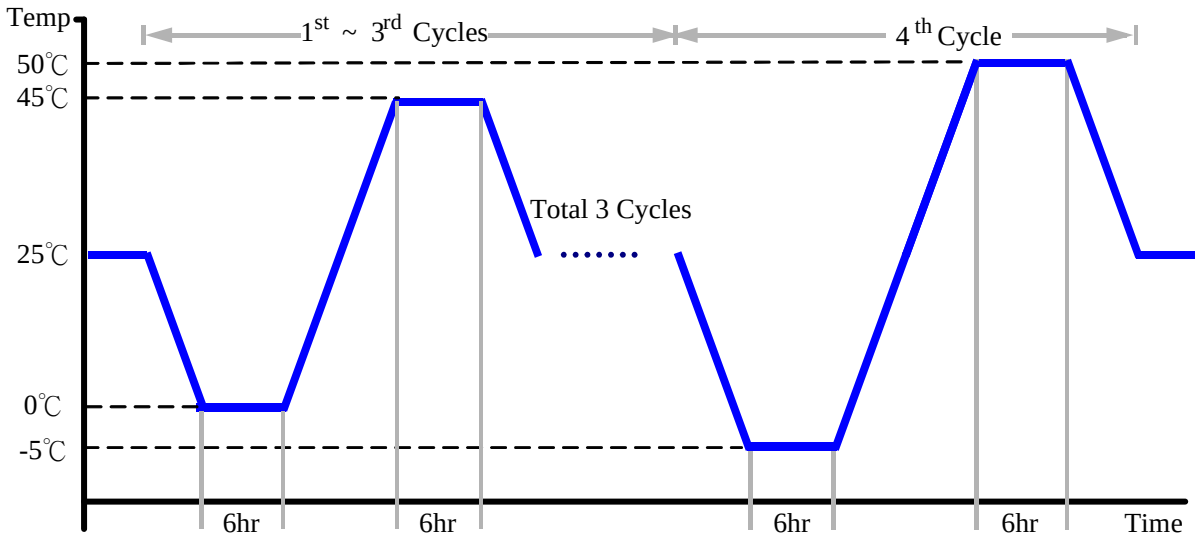
Test Standard: Refer to IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Test Condition:

1. Test Low Temperature: 0℃ (1~3 cycles)
   -5℃ (4^{th} cycle)
2. Test High Temperature: 45℃ (1~3 cycles)
   50℃ (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 (DSS-CV20)

Test Result:

No issues were found during the temperature operation cycle test.

High temperature storage test

Test Date: 12-05 ~ 07-2012

Test Product: DSS-CV20

Test Site: AAEON QE Dept.

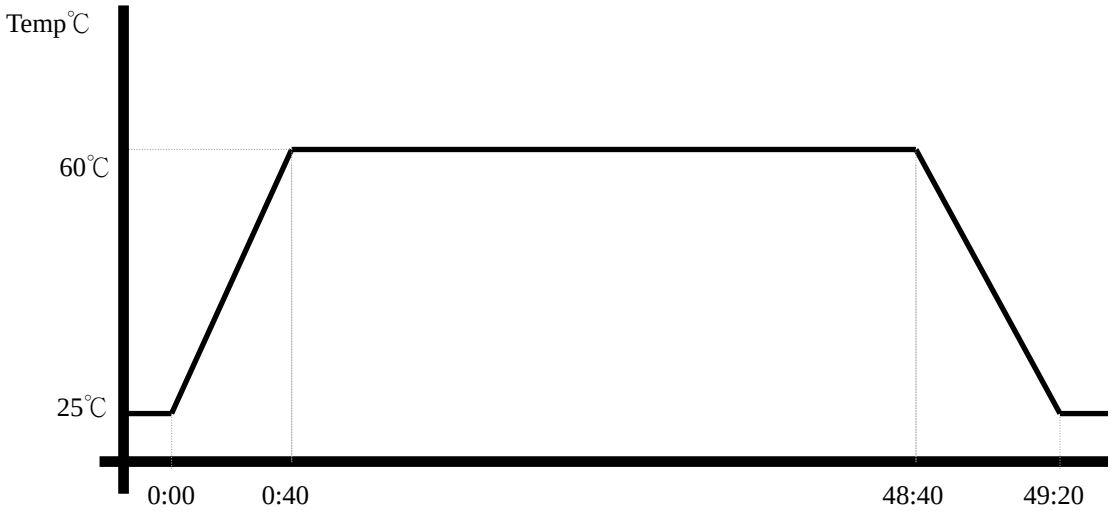
Test Standard: Refer to IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 60℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:
Quantity: 1 (DSS-CV20)

Test Result:

No issues were found after the high temperature storage test.

Low temperature storage test

Test Date: 12-03 ~ 05-2012

Test Product: DSS-CV20

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: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: -20℃
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
4. Test Environment Curve:

Sample Configuration & Quantity Under Test:
Quantity: 1 (DSS-CV20)

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

Humidity test

Test Date: 11-30-2012~ 12-03-2012

Test Product: DSS-CV20

Test Site: AAEON QE Dept.

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

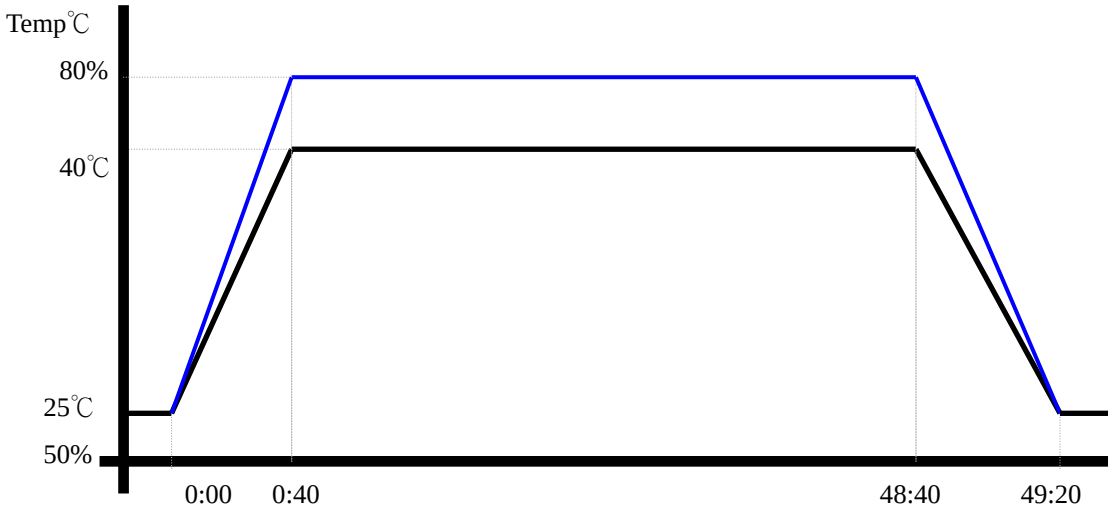
Test Equipment:

Programmable Temperature & Humidity Chamber: (K.SON. INS. TECH. CORP.)
Model: THS-B6T-150+LN2
Date of Calibration: 06/11/12
Serial Number: 9095KT

Testing Item:

1. Test Temperature: 40℃
2. Test Humidity: 80%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 7.0 Pro
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:
Quantity: 1 (DSS-CV20)

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

Cold start and hot start test

Test Date: 12-11 ~ 12-2011

Test Product: DSS-CV20

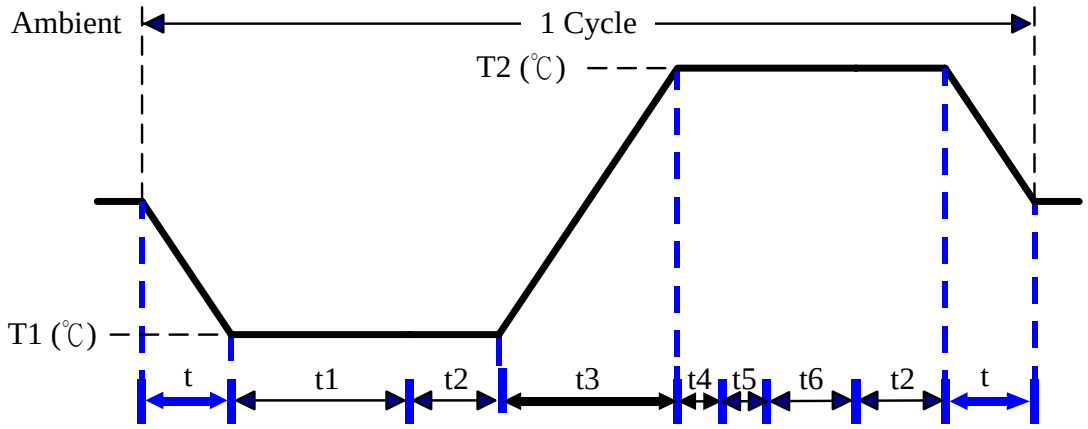
Test Site: AAEON QE Dept.

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: 06/11/12
Serial Number: 9095KT

Test Condition:



Parameters	Description
T1	-5℃
T2	50℃
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 7.0
t5: Win 7 Software restart test 3 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.