

TKS-G50-QM77

With HDD

Environment Test Report

Report NO: 12E020012

Summary	<p><input type="checkbox"/> Pass</p> <p><input type="checkbox"/> Fail</p> <p>Note : There is/are ____ defect(s) not list in the report, please check it in the DTS Website.</p> <p><input checked="" type="checkbox"/> Pass with Deviation</p> <p>Comment : <u>Under PassMark Burn In Test 7.0 Pro .change COM port baud rate 115200 to 9600 test pass.</u></p>
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Issue date

Approval

Test Engineer

2012-06-13

Vincent Chen

Clement Chien

Test item list

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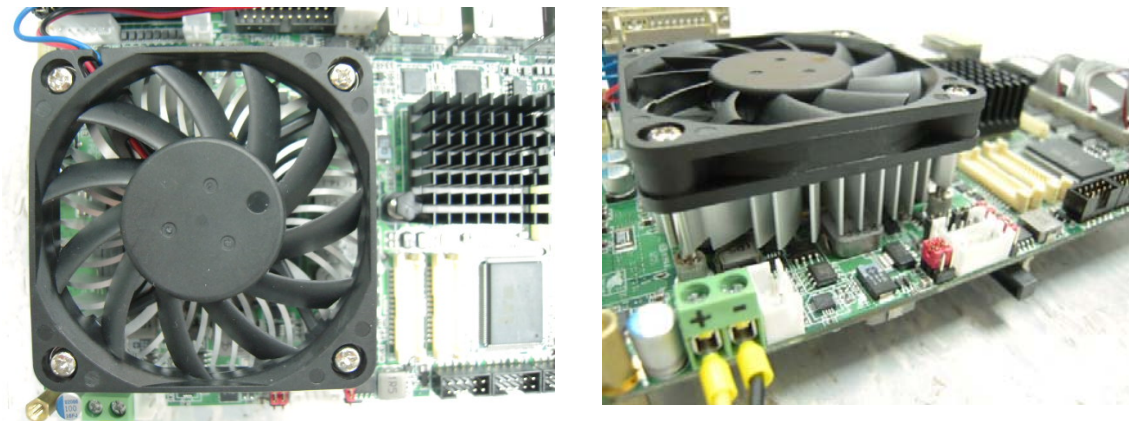
Testing Result

Num	Test item list	Result	Remark
1	Temperature rise 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:	TKS-G50-QM77 A0.1
	1.Main board	GENE-QM77 A1.0 (Bios Rev.R0.3)
	2.CPU Type	Intel Core i7-3610QE / 2.30GHz
	2. Chipset	INTEL HM76 PCH
	3. Memory	Transcend DDR3 1333 8GB CL9
	4. SATA HDD	Toshiba MK1060GSC 2.5" 100GB
	5. Test Software	Windows 7 / Run BurnIn test 7.0 Pro
2.	Adapter :	FSP120-AHAN1

CPU Cooler



Temperature rise test

Test Date: 06-13-2012

Test Product: TKS-G50-QM77

Test Site: AAEMON QE Internal Lab.

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

Temperature Measurement:

40 Channel Thermal Recorder:

YOKOGAWA Inc,

Model: TKS-G50-QM77

Date of Calibration: 10/12/2011

Serial Number: 12A323190

Test Condition:

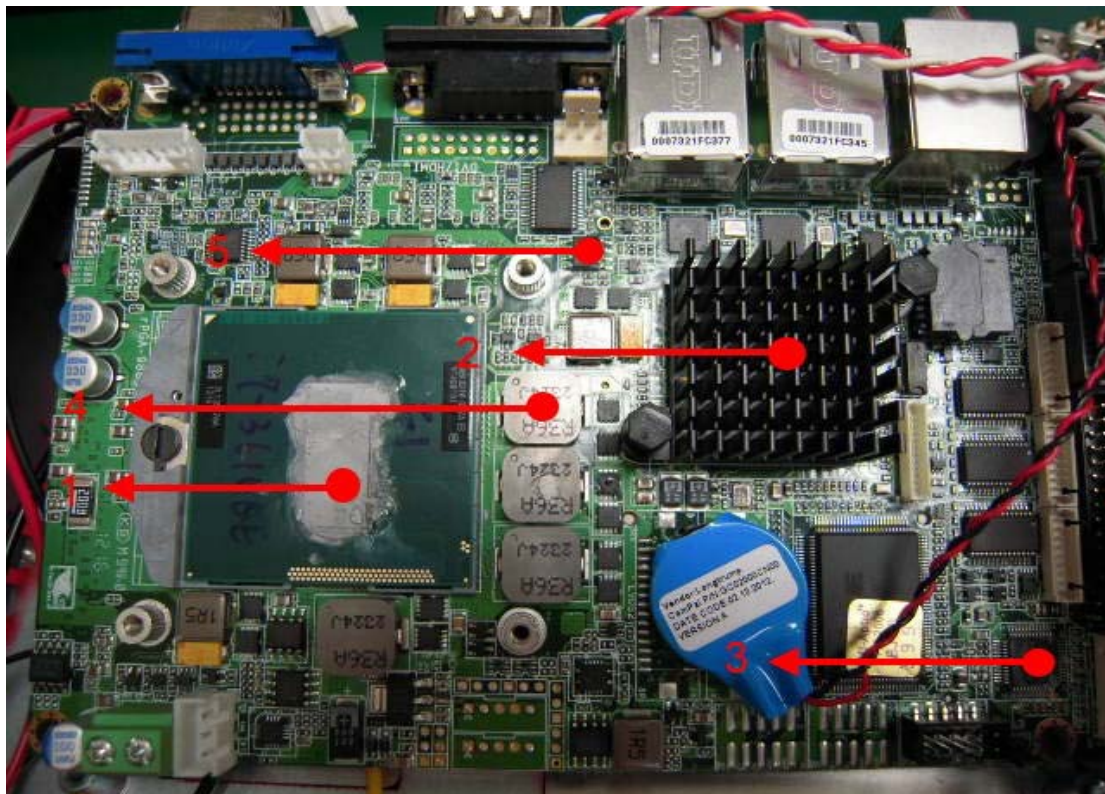
Ambient temperature:50°C

Continuous running till thermal stability (within less than 1°C)

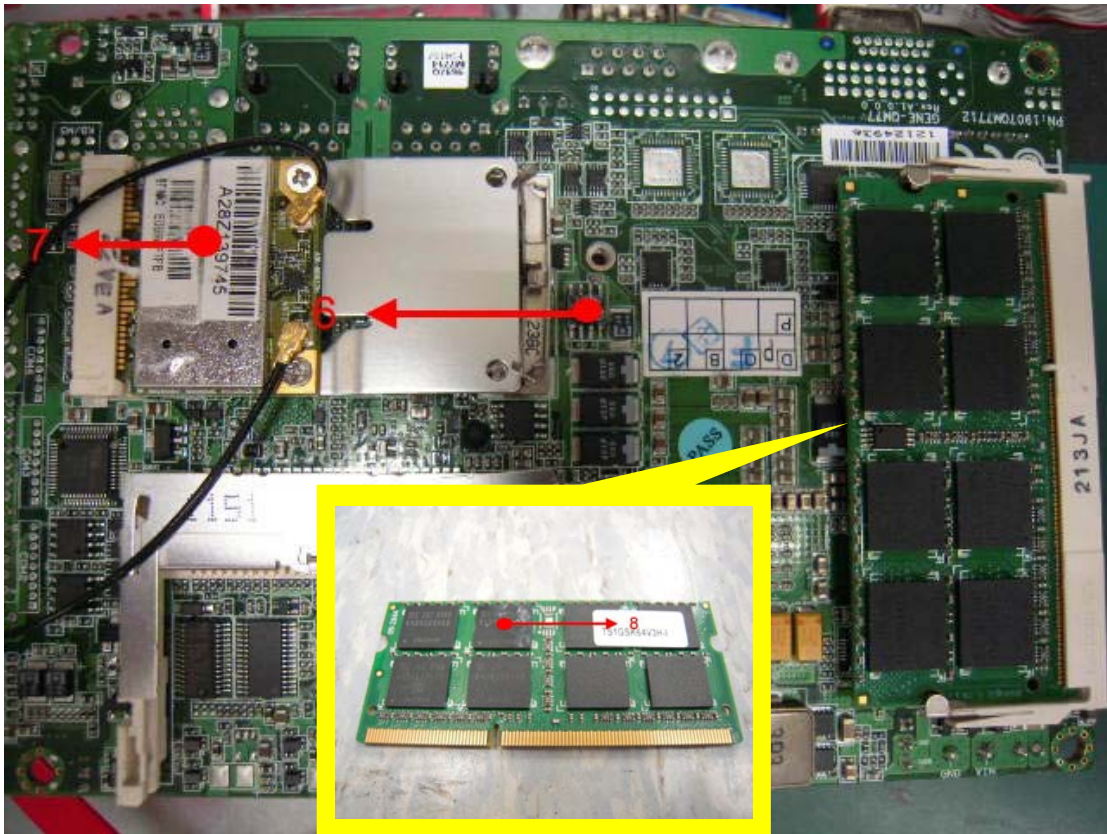
Test Software:

Windows 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:



Temperature rise test



Temperature rise test



Temperature rise test

Thermal profile data:

Point	Temp. Stage(°C)	Spec	50	Note
01. CPU - Intel core i7-3610QE		105	78.0	
02. U31 - (TF)Chipset PCH.INTEL.BD82QM77		108	72.0	
03. U11 - (TF)High Definition.Audio Codec.REALTEK.ALC892-GR		100.5	72.4	
04. L5 - (TF)COIL.0.36uH.Irms=34A.20%.Panasonic.ETQP4LR36AFC		130	67.0	
05. U42 - (TF)PWR.SMD.SO-8P.P-Channel MOSFET.APEC.AP6679GM-HF		125	64.3	
06. U80 - (TF)Low dropout Linear Regulator.ANPEC.APL5912-KAC-TRL		105	79.9	
07. Mini card AW-NB037		80	67.8	
08. Memory		85	67.1	
09. HDD		85	60.7	
09. Control Box Inside Air Temperature		N/A	56.5	
10. Control Box Surface Temperature		N/A	55.5	
11. Chamber Air Temperature		N/A	50.1	

Note(*):

- "Tc" indicates the component's case maximum temperature value specified in its datasheet.
- "Tm" indicates the measured Tc value under working environmental temperature within product specification.

3. Judgment Criteria:

- **Fail** : $T_m > T_c$; The measured value is over specification.
- **Margin Pass** : $T_c > T_m > T_c - 5^\circ\text{C}$; The measured value is within specification with margin.
It is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : $T_m < T_c - 5^\circ\text{C}$; The measured value is with safety margin.

Temperature Measurement Table:

Location	$T_A = 50.1^\circ\text{C}$	Temp. Rise (Thermal Couple)	SpeedFan 4.46 (Read from BIOS)	
			Temp.2	
CPU		78.0°C		77°C

Sample Configuration & Quantity Under Test:

Quantity: 1 (TKS-G50-QM77)

Test Result:

No problem was found during the temperature rise operation test.

Temperature cycle test

Test Date: 06-10 ~ 12-2012

Test Product: TKS-G50-QM77

Test Site: AAEON QE Internal Lab.

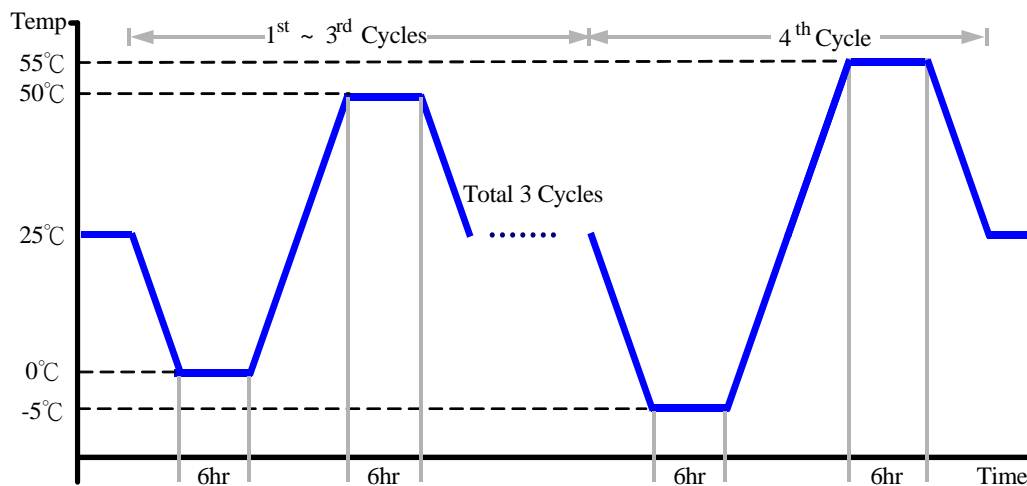
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

Test Equipment:

Programmable Temperature & Humidity Chamber
K.SON. INS. TECH. CORP.
Model: THS-D75-100+LN2
Date of Calibration: 10/13/11
Serial Number: 6487KT

Test Condition:

1. Test Low Temperature: 0°C (1~3 cycles)
-5°C (4th cycle)
2. Test High Temperature: 50°C (1~3 cycles)
55°C (4th cycle)
3. Test dwell time: 6Hrs
4. Temperature slope: 2°C/min
5. Test cycle: 4 cycles
6. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (TKS-G50-QM77)

Test Result:

No problem was found during the temperature operation cycle test.

High temperature storage test

Test Date: 06-06 ~ 07-2012

Test Product: TKS-G50-QM77

Test Site: AAEON QE Internal Lab.

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

Test Equipment:

Programmable Temperature & Humidity Chamber

K.SON. INS. TECH. CORP.

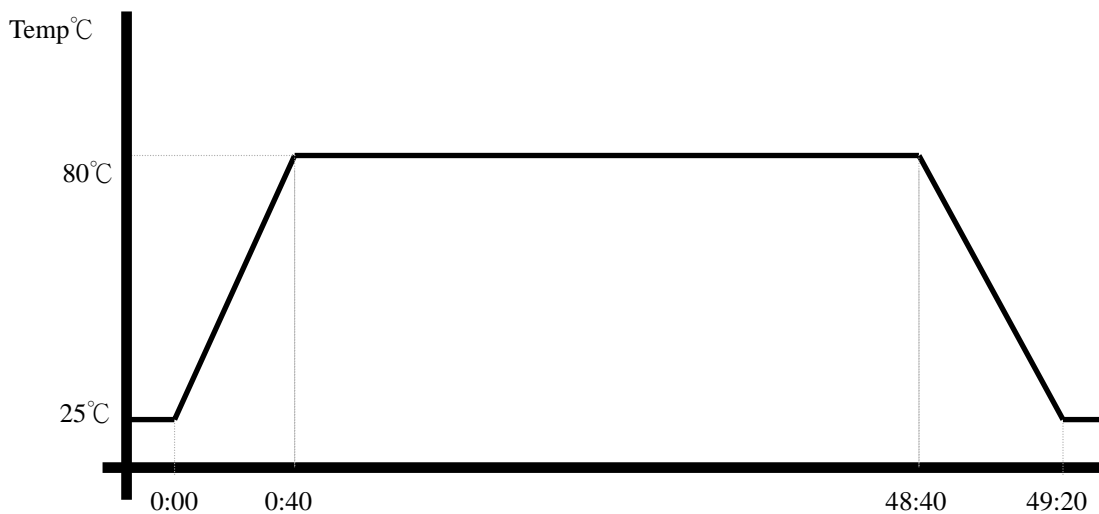
Model: THS-D75-100+LN2

Date of Calibration: 10/13/11

Serial Number: 6487KT

Testing Item:

1. Test Temperature: 80°C
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (TKS-G50-QM77)

Test Result:

No problem was found after the high temperature storage test.

Low temperature storage test

Test Date: 06-04 ~ 05-2012

Test Product: TKS-G50-QM77

Test Site: AAEON QE Internal Lab.

Test Standard: Reference 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-D75-100+LN2

Date of Calibration: 10/13/11

Serial Number: 6487KT

Testing Item:

1. Test Temperature: -40°C
2. Test Times: 48Hrs
3. Test Software: Windows 7 / Run PassMark Burn In Test 7.0
4. Test Environment Curve:



Sample Configuration & Quantity Under Test:

Quantity: 1 (TKS-G50-QM77)

Test Result:

No problem was found after the low temperature storage test.

Humidity test

Test Date: 06-02 ~ 03-2012

Test Product: TKS-G50-QM77

Test Site: AAEON QE Internal Lab.

Test Standard: Reference 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-D75-100+LN2

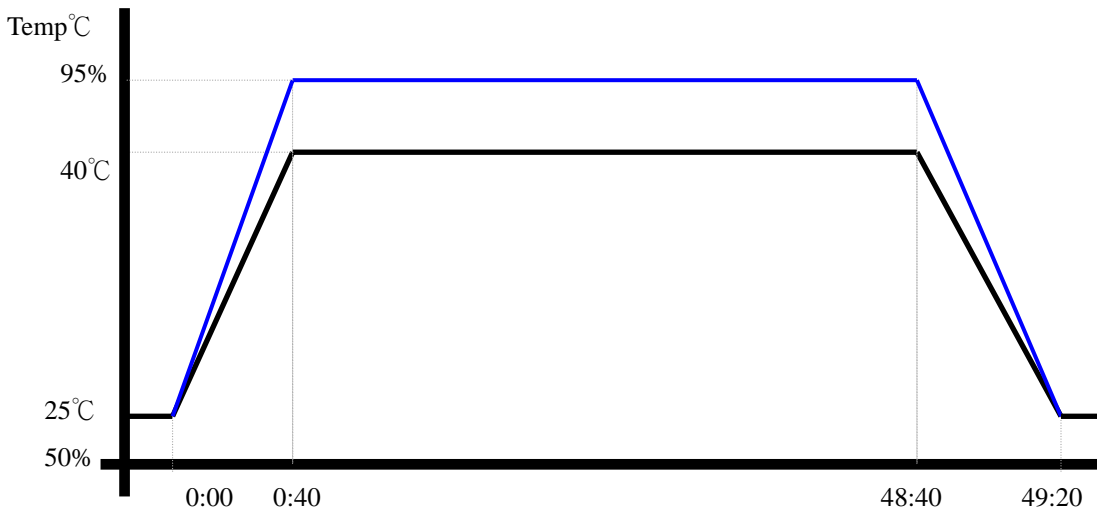
Date of Calibration: 10/13/11

Serial Number: 6487KT

Testing Item:

1. Test Temperature: 40°C
2. Test Humidity: 95%RH
3. Test Times: 48Hrs
4. Test Software: Windows 7 / Run PassMark Burn In Test 7.0
5. Test Environment Curve:

Humidity %



Sample Configuration & Quantity Under Test:

Quantity: 1 (TKS-G50-QM77)

Test Result:

No problem was found after the humidity storage test.

Cold start and hot start test

Test Date: 06-08 ~ 09-2012

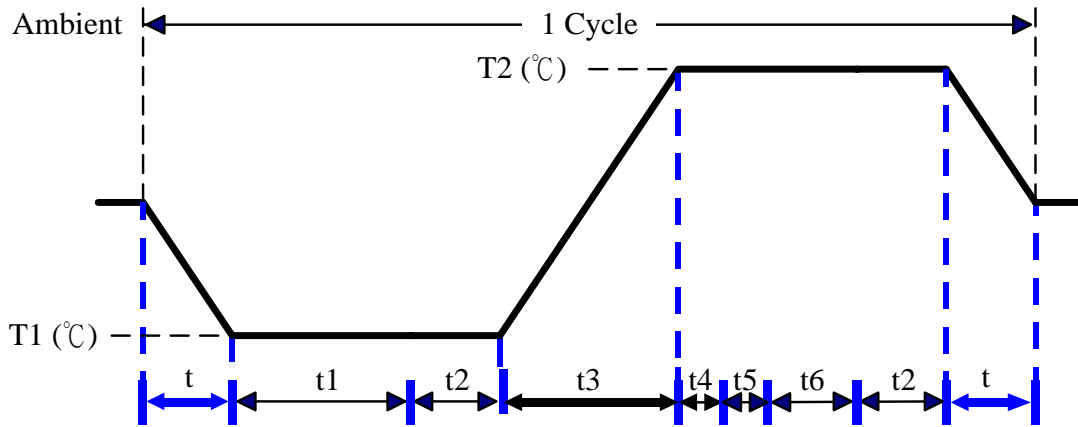
Test Product: TKS-G50-QM77

Test Site: AAEON QE Internal Lab.

Test Standard: Reference 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-D75-100+LN2
 Date of Calibration: 10/13/11
 Serial Number: 6487KT

Test Condition:



Parameters	Description
T1	-5°C
T2	55°C
t1	4 hrs
t2, t6	2 hrs
t4, t5	1hrs
t, t3	2°C/min
n (Cycle)	1

t = temperature 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 problem was found during the cold start test.
- b. No problem was found during the hot start test.