TKS-G50-QM77

With CFast

Environment Test Report

Report NO: 12E020013

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 : **Under PassMark Burn In Test 7.0 Pro ,change COM port baud rate 115200 to 9600 test pass.**

Issue date	Approval	Test Engineer
2012-06-13	**Vincent Chen**	**Clement Chien**

Test item list

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. CFast	INNODISK 16GB-D150Q
	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: AAEON 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

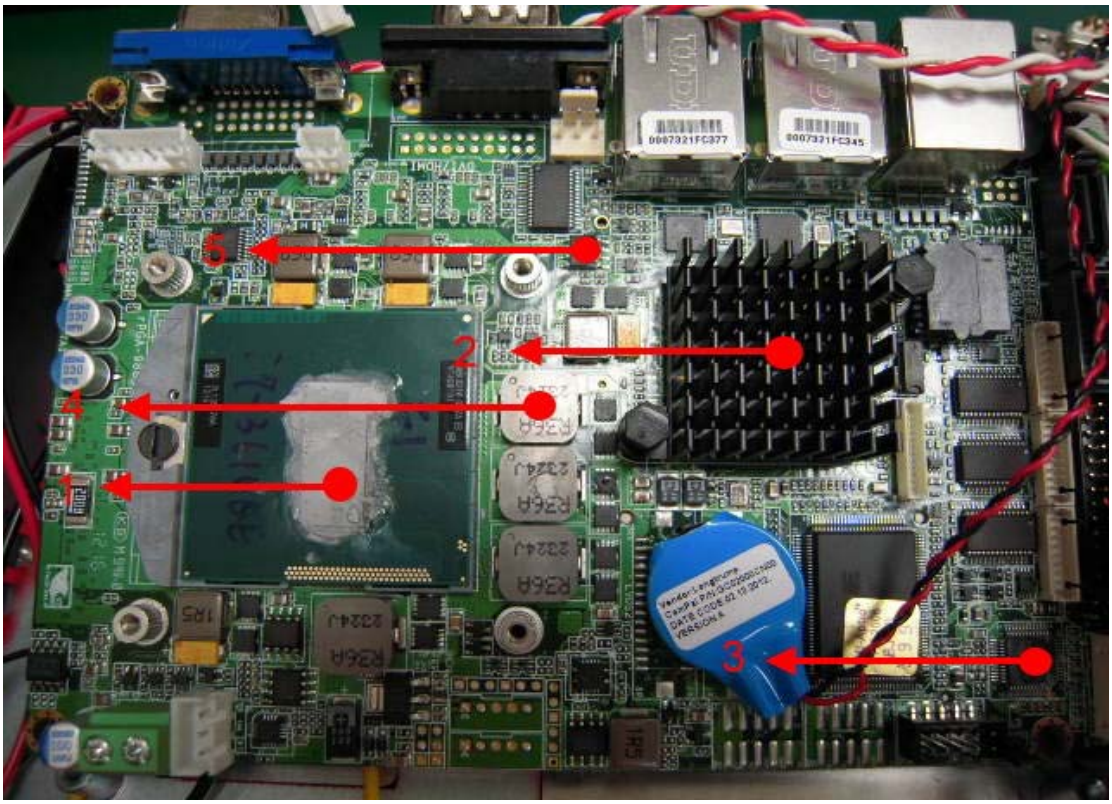
Test Condition:

Ambient temperature:50℃
Continuous running till thermal stability (within less than 1℃)

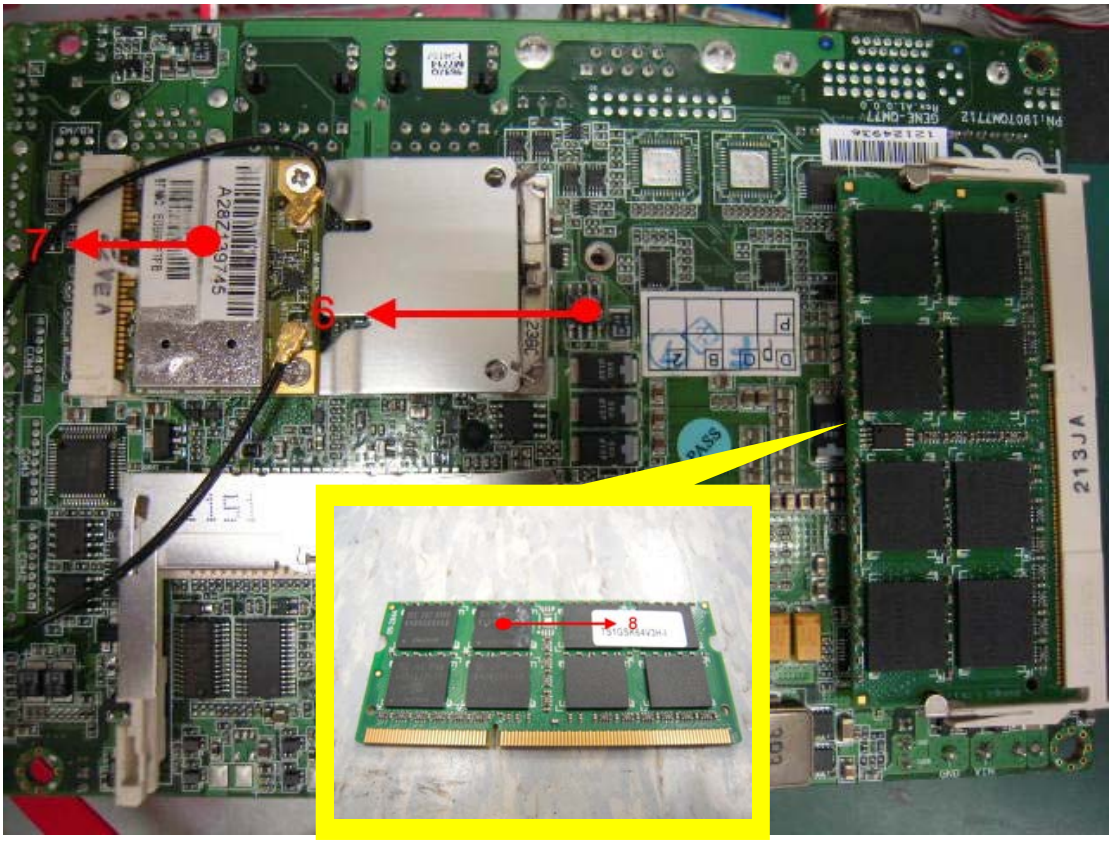
Test Software:

Windows 7 / Run PassMark Burn In Test 7.0 Pro

Terminal Recorder:



Temperature rise test



Temperature rise test

Temperature rise test

Thermal profile data:

Point \ Temp. Stage(℃)	Spec	50	Note
01. CPU - Intel core i7-3610QE	105	77.8	
02. U31 - (TF)Chipset PCH.INTEL.BD82QM77	108	73.3	
03. U11 - (TF)High Definition.Audio Codec.REALTEK.ALC892-GR	100.5	73.8	
04. L5 - (TF)COIL.0.36uH.Irms=34A.20%.Panasonic.ETQP4LR36AFC	130	67.9	
05. U42 - (TF)PWR.SMD.SO-8P.P-Channel MOSFET.APEC.AP6679GM-HF	125	65.2	
06. U80 - (TF)Low dropout Linear Regulator.ANPEC.APL5912-KAC-TRL	105	81.0	
07. Mini card AW-NB037	80	66.3	
08. Memory	85	67.5	
09. CFast	85	73.5	
09. Control Box Inside Air Temperature	N/A	56.6	
10. Control Box Surface Temperature	N/A	55.8	
11. Chamber Air Temperature	N/A	50.1	

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.

Temperature Measurement Table:

T_A=50.1℃ / **Location**	**Temp. Rise (Thermal Couple)**	**SpeedFan 4.46 (Read from BIOS)**	
CPU	77.8℃	**Temp.2**	78℃

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.

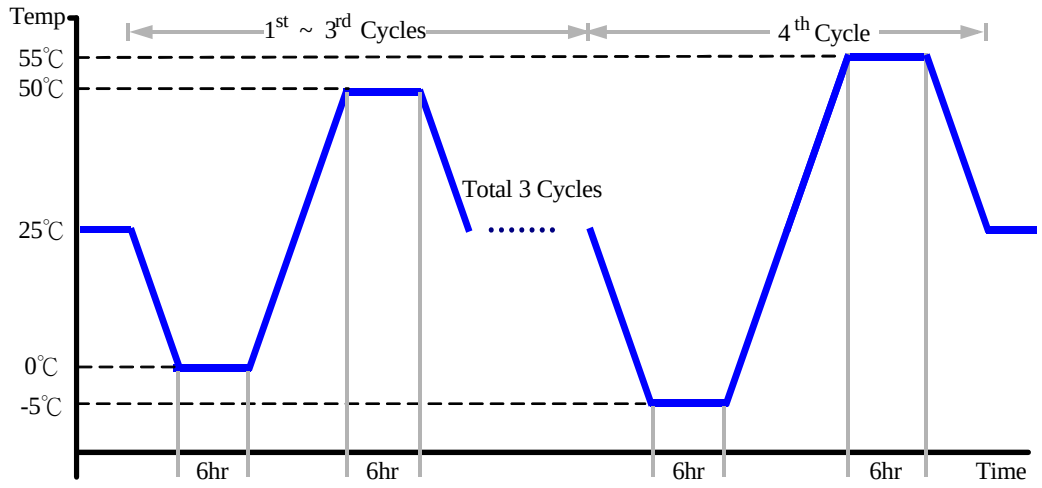
Test Standard: Reference IEC68-2-14 Testing procedures
Test N: Change of temperature Test

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℃ (1~3 cycles)
   -5℃ (4th cycle)
2. Test High Temperature: 50℃ (1~3 cycles)
   55℃ (4th 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 (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.

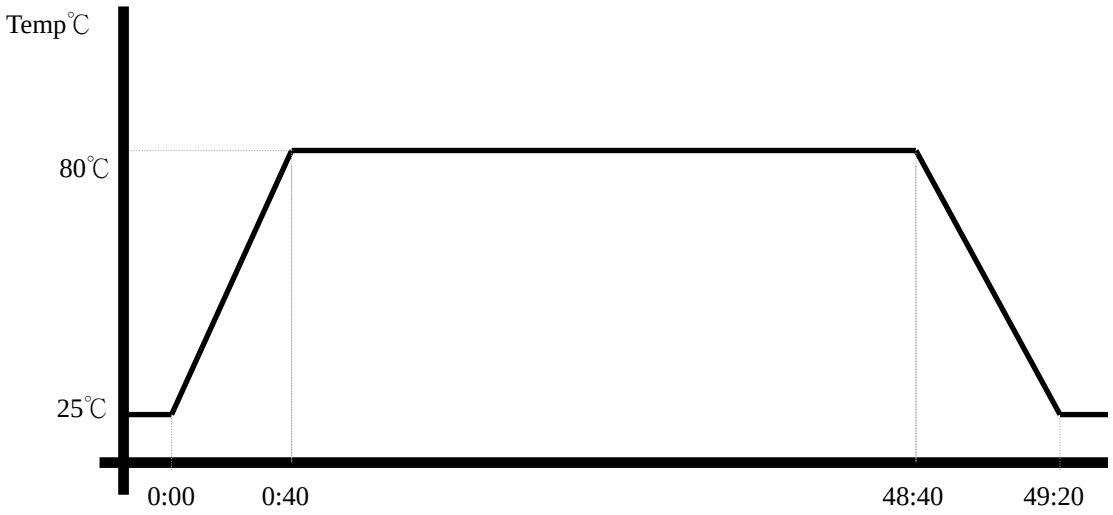
Test Standard: Reference IEC 68-2-2 Testing procedures
Test Bb: Dry Heat Test (Non-operation)

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℃
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℃
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)

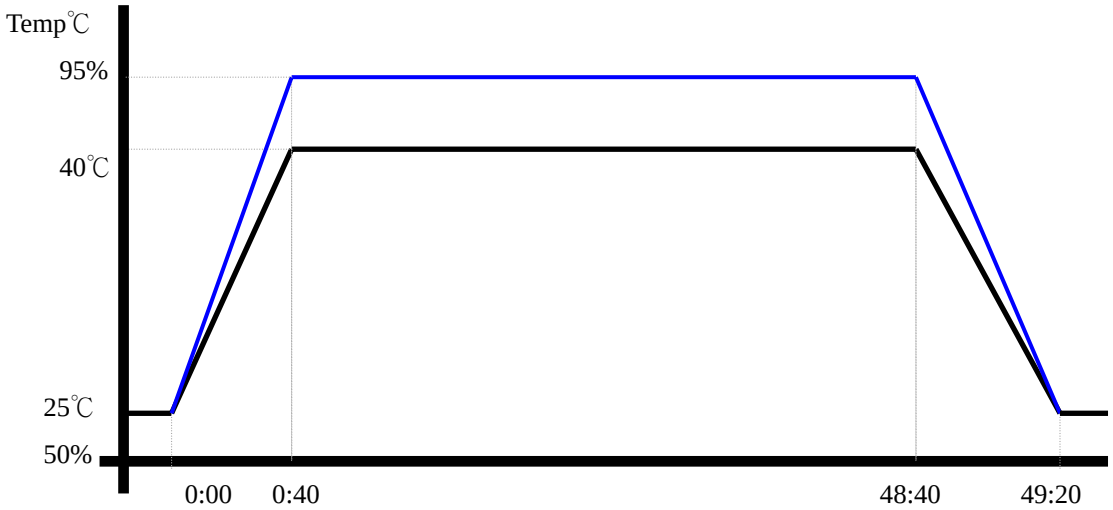
Test Equipment:

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℃
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

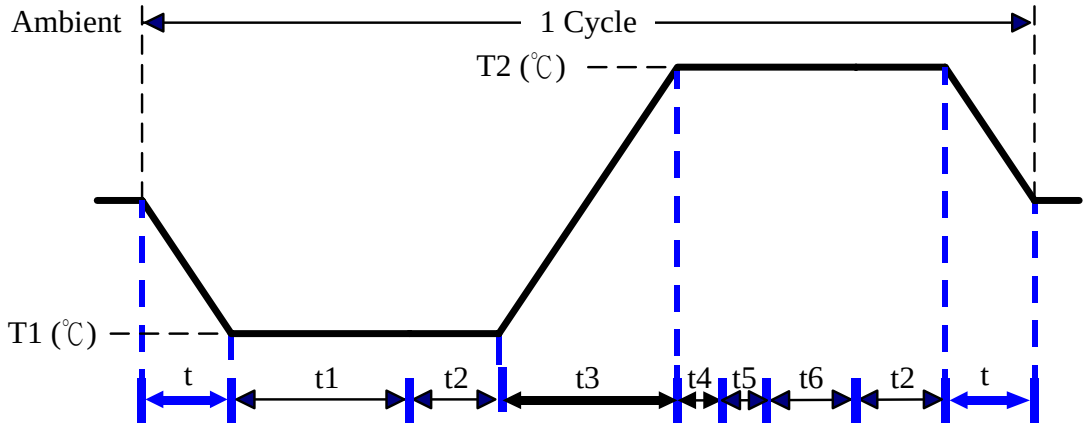
Test Site: AAEON QE Internal Lab.

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℃
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 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.