Rev.	Modified Chapters	Modification Description	Issued Dept.	Issued by	Revised Date
1.00		First Release	GRMA	Ariel_wang	Sep.10,2012
1.01		Add new P/N(YV0381-A01)	GRMA	Ariel_wang	Sep.10,2012
1.02		Add new P/N(YV03B0-A03)	GRMA	Ariel_wang	Sep.24,2012
1.03		Add new P/N(YV03B1-A03)	GRMA	Ariel_wang	Sep.24,2012
1.04		Add new P/N(YV03B2-A03)	GRMA	Ariel_wang	Sep.24,2012
1.05		Add new P/N(YV0382-A01)	GRMA	Ariel_wang	Sep.24,2012
1.06		Add new PCBA(YV0382-A11)	GRMA	Ariel_wang	Sep.24,2012
1.07		Add new P/N(YV0383-A01)	GRMA	Ariel_wang	Oct.22,2012
1.08		Add new P/N(YV03B3-A01)	GRMA	Ariel_wang	Oct.29,2012
1.09		Add new P/N(YV03K0-A02)	GRMA	Ariel_wang	Nov.21,2012
1.10		Add new P/N(YV03K1-A02)	GRMA	Ariel_wang	Nov.21,2012
1.11		Add new P/N(YV03I0-A03)	GRMA	Ariel_wang	Nov.26,2012
1.12		Add new PCBA(YV03B2-A15)	GRMA	Ariel_wang	Dec.5,2012
1.13		Add new P/N(YV03I1-A04)	GRMA	Ariel_wang	Dec.18,2012
1.14		Add new PCBA(YV0380-X03)	GRMA	Ariel_wang	Dec.24,2012
1.15		Add new PCBA(YV03K0-U04)	GRMA	Ariel_wang	Dec.26,2012
1.16		Add new PCBA(YV03K1-U04)	GRMA	Ariel_wang	Dec.26,2012
1.17		Add new PCBA(YV0381-A11)	GRMA	Ariel_wang	Jan.4,2013
1.18		Add new PCBA(YV03I0-U04)	GRMA	Ariel_wang	Jan.4,2013
1.19		Add new P/N(YV03R0-A02)	GRMA	Ariel_wang	Jan.15,2013
1.20		Add new P/N(YV03R1-A02)	GRMA	Ariel_wang	Jan.15,2013
1.21		Add new P/N(YV03Q0-A02)	GRMA	Ariel_wang	Jan.15,2013
1.22		Add new P/N(YV03Q1-A02)	GRMA	Ariel_wang	Jan.22,2013
1.23		Add new PCBA(YV03K0-A24)	GRMA	Ariel_wang	Jan.29,2013
1.24		Add new PCBA(YV03B2-U05)	GRMA	Ariel_wang	Feb.5,2013
1.25		Add new PCBA(YV03I0-A34)	GRMA	Ariel_wang	Feb.25,2013
1.26		Add new PCBA(YV03R1-A13)	GRMA	Ariel_wang	Mar.4,2013
1.27		Add new PCBA(YV03R0-A14)	GRMA	Ariel_wang	Mar.4,2013
1.28		Add new PCBA(YV03K1-A15)	GRMA	Ariel_wang	Mar.11,2013
1.29		Add new PCBA(YV03I1-A16)	GRMA	Ariel_wang	Mar.11,2013
1.30		Add new P/N(YV0430-A01)	GRMA	Ariel_wang	Mar.19,2013
1.31		Add new P/N(YV0431-A01)	GRMA	Ariel_wang	Mar.19,2013
1.32		Add new PCBA(YV03Q0-A13)	GRMA	Ariel_wang	Mar.29,2013
1.33		Add new PCBA(YV03Q3-A02)	GRMA	Jory_yuan	Apr.24,2013

Authorize by		Review by		Originator By	Ariel

1.34		Add new PCBA(YV03K1-U16)	GRMA	Jory_yuan	May.7.2013
1.35		Add new PCBA(YV03K0-U24)	GRMA	Jory_yuan	May.9.2013
1.36		Add new PCBA(YV0430-A11)	GRMA	Jory_yuan	May.14.2013
1.37		Add new PCBA(YV0431-A11)	GRMA	Jory_yuan	May.14.2013
1.38		Add new P/N(YV04D0-A01)	GRMA	Jory_yuan	Jun.06.2013
1.39		Add new PCBA(YV03B2-A35)	GRMA	Jory_yuan	July.03.2013
1.40		Add new P/N(YV04W0-A01)	GRMA	Jory_yuan	Sep.22.2013
1.41		Add new PCBA(YV0431-U12)	GRMA	Jory_yuan	Sep.22.2013
1.42		Ad new PCBA(YV03K1-A27)	GRMA	Jory_yuan	Sep.22.2013
1.43		Add new PCBA(YV03Q3-A12)	GRMA	Jory_yuan	Nov.6.2013
1.44		Add new PCBA(YV03Q4-A11)	GRMA	Jory_yuan	Nov.13.2013
1.45		Add new PCBA(YV03K0-A35)	GRMA	Jory_yuan	Nov.13.2013
1.46		Add new PCBA(YV03K1-A39)	GRMA	Jory_yuan	Nov.20.2013
1.47		Add new PCBA(YV03Q4-A02)	GRMA	Jory_yuan	Nov.27.2013
1.48		Add new P/N(YV03K2-A03)	GRMA	Jory_yuan	Nov.27.2013
1.49		Add new P/N(YV03K3-A01)	GRMA	Jory_yuan	Dec.11.2013
1.50		Add new PCBA(YV03K1-A49)	GRMA	Jory_yuan	Dec.11.2013
1.51		Add new PCBA(YV04W0-A12)	GRMA	Jory_yuan	Dec.18.2013
1.52		Add new PCBA(YV03B2-A45)	GRMA	Jory_yuan	Dec.18.2013
1.53		Add new PCBA(YV0380-A18)	GRMA	Jory_yuan	Dec.25.2013
1.54		Add new PCBA(YV03K1-B02)	GRMA	Jory_yuan	Mar.19.2014
1.55		Add new P/N(YV04D1-A01)	GRMA	Jory_yuan	Mar.26.2014

1.Objectives

Create test procedure.

2.Scope

Model: GTX650

3.Test Item

3.1 Diagnostic test in Tiny Linux
3.2 3DMark06(contain HDMI test)
3.3 Temperature test

4.Relevant Document

None.

5.Definition :

1. If the model name contains P, please test HDCP function.
   Ex: EAH***/HTDP/512M/A
2. If you test HDMI already, it's unnecessary to test HDCP. The HDMI contains HDCP function.
3. System Memory: 1GB for a single GPU test station; please add an additional 512MB of system memory for each additional GPU used for the test configuration
4. GTX650 Test Program in 64-bit Tiny Linux system.

6. Operation Procedures:

6.1 Attention

6.1.1 To avoid damaging devices or M/B, please turn off A/C power then unplug VGA card.

6.1.2 While unplugging the card, do it in upright direction to avoid damaging slot & golden finger.

6.1.3 If any problem happens, please inform test supervisor. Base on ATX power specification, +5V standby voltage is existed while AC power is connecting. For safety reason, please turn off main power during break time or idling test.

6.1.4 Some test items should be tested under Windows 7 environment. (Please install windows test environment by yourself).

6.2 Fixture connect

6.2.1 Install Intel P7 CPU & CPU Fan.

6.2.2 Install DDR3 Memory to DIMM1~4. **(a minimum memory of 2GB for Linux test)**

6.2.3 Plug USB Mouse and PS/2 Keyboard into MB.

6.2.4 Plug VGA Card GTX650 into PCIEX16_1.

6.2.5 If this card has 6 PIN or 8 PIN of Power supply, please connect power con of VGA card & Power supply via bundled power cable.

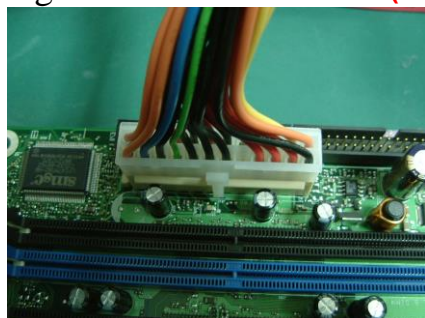   (6 PIN of Power supply to 6 PIN of VGA card)

   (8 PIN of Power supply to 8 PIN of VGA card)

6.2.6 Connect SATA HDD & SATA con via SATA cable

SATA

6.2.7 Plug 4PIN 12V power**(a minimum power of 1200W)** cable into CON12V.

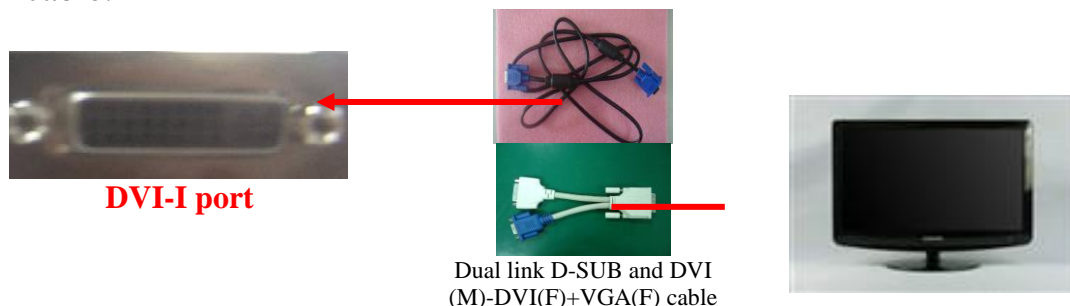6.2.8 Plug ATX Power on Power**(a minimum power of 1200W)** Connector.

6.3 Certain test.

6.3.1 Diagnostic test in 64-bit LINUX system

6.3.1.1 Please connect LCD monitor & card's DVI CON via a **DVI-I (M)-DVI(F)+VGA(F)** cable.

DVI-I port

Dual link D-SUB and DVI (M)-DVI(F)+VGA(F) cable

6.3.1.2 Press Power Switch then turn on power button.

6.3.1.3 Press "Del" to enter CMOS setup menu while boot screen is displaying.

EXIT -> Load Setup Defaults.

6.3.1.4 Run test program in 64-bit Tiny linux system.

Please download TinyLinux11.12.rar from sip and copy the all file and folder of TinyLinux11.12 to DOS system root directory, then run dos2lin.bat goto Tinylinux system, Path:c:/dos2lin/dos2lin.bat

Path:gtx650\yv0380a0.sh or yv0383a0.sh or yv0380x0.sh or yv0380a1.sh

Path:gtx6501\yv0381a0.sh or yv0381a1.sh

Path:gtx6502\yv03b0a0.sh

Path:gtx6503\yv03b1a0.sh or yv03b2a1.sh

Path:gtx6504\yv03b2a0.sh or yv03b3a0.sh or yv03b2u0.sh or yv03b2a3.sh or yv03b2a4.sh

Path:gtx6505\yv0382a0.sh or yv0382a1.sh

Path:gtx6506\yv03k0a0.sh or yv03k1a0.sh or yv03k0u0.sh or yv03k1u0.sh or yv03k0a2.sh or yv03k1a1.sh or yv03k1u1.sh or yv03k0u2.sh or yv04d0a0.sh or yv03k0a3.sh or yv03k1a3.sh or yv03k1a4.sh

Path:gtx6507\yv03i0a0.sh or yv03i1a0.sh or yv03i0u0.sh or yv03i0a3.sh or yv03i1a1.sh or yv04w0a0.sh or yv04w0a1.sh

Path:gtx6508\yv03r0a0.sh or yv03r1a0.sh or yv03r0a1.sh or yv03r1a1.sh

Path:gtx6509\yv03q0a0.sh or yv03q1a0.sh or yv03q0a1.sh or yv03q3a0.sh

Path:gtx650a\yv0430a0.sh or yv0430a1.sh

Path:gtx650b\yv0431a0.sh or yv0431a1.sh or yv0431u1.sh

Path:gtx650c\yv03k1a2.sh or yv03k1b0.sh

Path:gtx650d\yv03q3a1.sh or yv03q4a1.sh or yv03q4a0.sh

Path:gtx650e\yv03k2a0.sh

Path:gtx650f\yv03k3a0.sh

Path:gtx650g\yv04d1a0.sh

Please enter into the file of gtx650 enter the following command: cd ./gtx650

Then, please run ./yv0380a0.sh or ./yv0381a0.sh ./yv03b0a0.sh ./yv03b1a0.sh ./yv03b2a0.sh ./yv0382a0.sh ./yv0382a1.sh ./yv0383a0.sh ./yv03b3a0.sh ./yv03k0a0.sh ./yv03k1a0.sh yv03k1u1.sh ./yv03i0a0.sh ./yv03b2a1.sh or ./yv03i1a0.sh or ./yv0380x0.sh or ./yv0381a1.sh or ./yv03i0u0.sh or ./yv03r0a0.sh or ./yv03r1a0.sh or ./yv03q0a0.sh or ./yv03q1a0.sh or ./yv03k0a2.sh or ./yv03b2u0.sh or ./yv03i0a3.sh or ./yv03r0a1.sh or ./yv03r1a1.sh or ./yv03k1a1.sh or ./yv03i1a1.sh ./yv0430a0.sh o ./yv0431a0.sh or ./yv0430a1.sh or ./yv0431a1.sh or ./yv04d0a0.sh ./yv03q0a1.sh or ./yv03q3a0.sh or ./yv03k0u2.sh

6.3.5 Memory test

If you want to test memory, please run ./mats -e xx

Where,-c xx------- only xx% of frame buffer is detected.

6.3.6 BIOS flash

Please use the following command to flash bios and notice the size of character.

Command: ./nvflash xxx.rom -4 -5 -6 -A -y

./biosinfo or ./nvflash –v (you can find BIOS Version)

Notice:

If you can not flash bios because of the bios locked, please use ./nvflash.exe -r to unlock bios. And then, please use ./nvflash.exe -w to lock bios after updating latest bios.

6.3.7 After finish linux testing, please enter Windows 7 environment to test 3DMark.

6.3.2 3DMark test(contain HDMI test)

6.3.2.1 Please install 3DMark program by yourself.

6.3.2.2 Please connect VGA card to LCD via HDMI cable or Display Port cable.

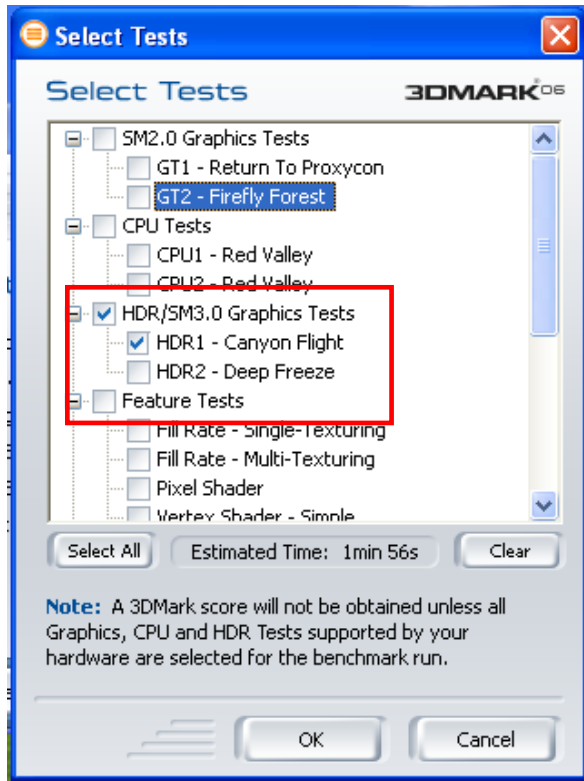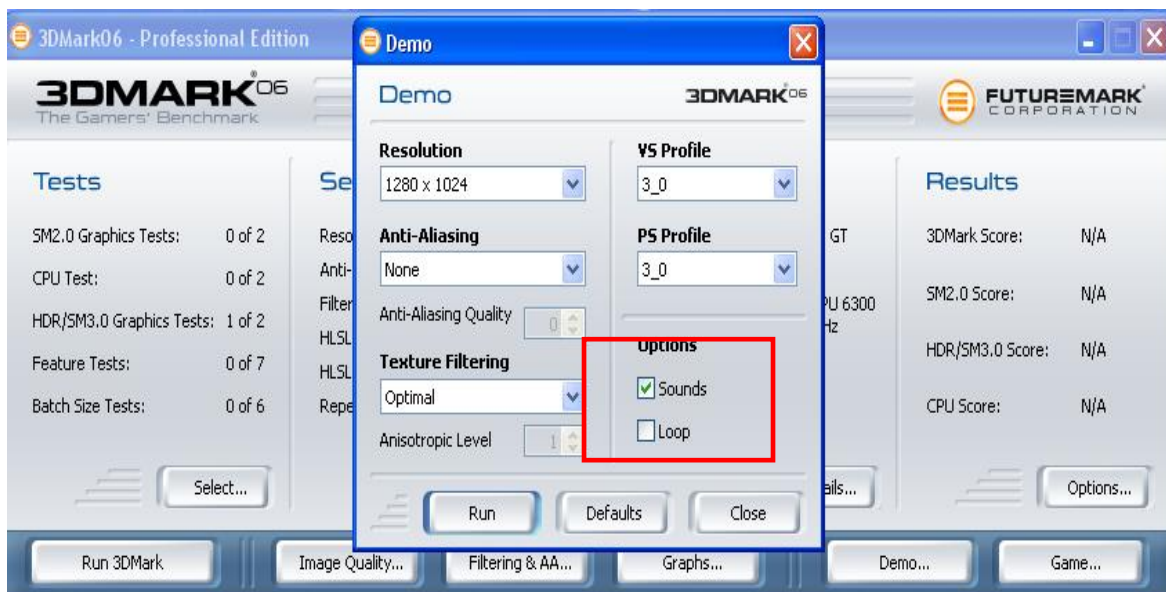DISPLAY cable

Display Port CON

HDMI cable

HDMI Port

6.3.2.3 Please install VGA card driver in Windows(You must use latest individual driver of this card).

6.3.2.4 Please run 3DMark06 base on this card (please test 1 cycle).

6.3.2.5 Press "Select" to enter Select test menu. You can choose "HDR1" for default setting.

6.3.2.6 Press "Demo" to enter Demo menu. You can choose "Sounds" for default setting.

6.3.2.7 Please pay attention to check if there is flickering, discolor, crash and so on. If there's no problem, it can be judged OK!

6.3.2.8 Please listen to voice carefully to check whether it outputs sounds. If not, HDMI test fail.

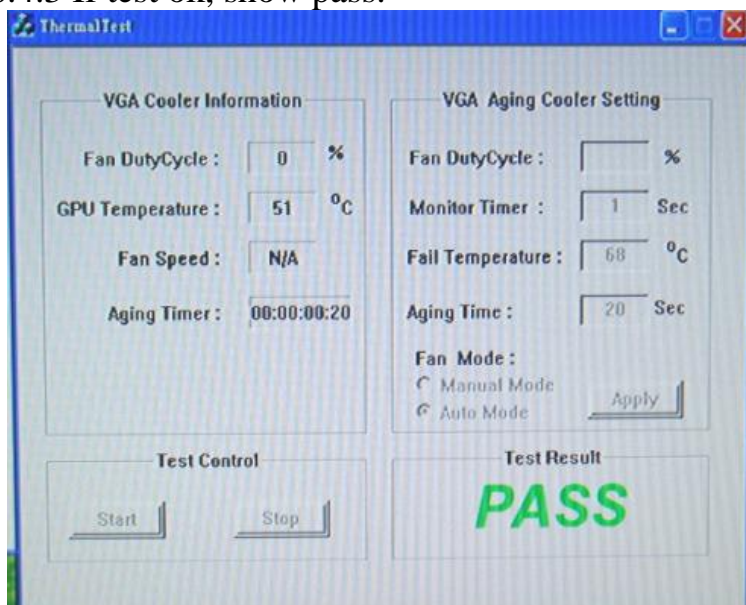6. 3.2.9 If test OK, please test temperature test.

6.4 Temperature test

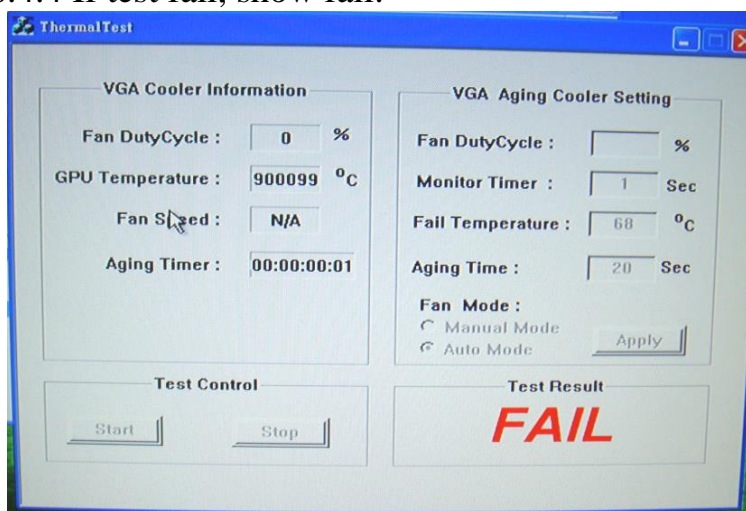6.4.1 Please copy Thermaltool(1.0.05) to Windows by yourself.

6.4.2 Please run ThermalTest.exe.

6.4.3 If test ok, show pass.

6.4.4 If test fail, show fail.

6.4.5 If test OK, please NTF test.

6.4.6 3D Temperature limit data.

YV0380-A0*&X0*/YV0383-A0* is 70 degrees.

YV0381-A0*&A1* is 79 degrees

YV0382-A0*/A1* /YV03B3-A0* is 76 degrees

YV03Q0-A0* /YV03Q1-A0* is 65 degrees

7.Appendix

NO#	Equipment Description	ASUS Part#	Supplier	Quantity	Remarks
1	**Dell 30 inches (3008WFP)** (Buying a local LCD by yourself)			1	
2	**USB MOUSE**			1	
3	**PS/2 KEYBOARD**			1	
4	**ATX POWER SUPPLY(a minimum power of 500W)**			1	
5	**Intel CPU Intel(R) Core(TM)2 CPU**		**local**	1	
6	**Heat sink + FAN**	**22-240000160**		1	
7	**DDR3 1333 2G**	**20-TT2605618**	**local**	4	
8	**TEST HDD**			1	
9	**SATA HDD Cable**	**14-000107070**	**ASUS**	1	
10	**PCIEX16 VGA CARD**			1	
11	**Dual link DVI cable** (Buying a local DVI cable by yourself)			1	
12	**HDMI extend cable** (Buying a local HDMI cable by yourself)			1	
13	**P7H55-M/USB3 MB**	**80- MIBBKA-***		1	
14	**Display port cable** (Buying a local Display port cable by yourself)			1	
15	**D-SUB extend cable** (Buying a local D-SUB cable by yourself)			1	