| Rev. | Modified Chapters | Modification Description | Issued Dept. | Issued by | Revised Date |
|---|---|---|---|---|---|
| 1.00 | | First Release(YV04Z0-A01) | GRMA | Jory_yuan | Aug.11,2013 |
| 1.01 | | Add new P/N(YV04Z1-A01) | GRMA | Jory_yuan | Aug.11,2013 |

| Authorize by | | Review by | | Originator By | Jory |
|---|---|---|---|---|---|

**1.Objectives**

　　　　Create test procedure.

**2.Scope**

　　　　Model:  MATRIX-R9280X
　　　　PN: YV04Z0(A01)YV04Z1(A01)

**3.Test Item**

　　　　3.1 Diagnostic test in 1204_64-bit Linux
　　　　3.2 3DMark06 (contain HDMI test)
　　　　 3.3 Temperature test
　　　　 3.4 Fan 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.　MATRIX-R9280X Test Program in 64-bit Linux system.

　　**Note:**

　　　　Please set the switch to U3(near GPU) to test MCU function and check U3 BIOS, then set it to U2 to test all function(diag program), after test ok, set the switch to U2(near IO) and return cards to customer.

## 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 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 MATRIX-R9280X 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.
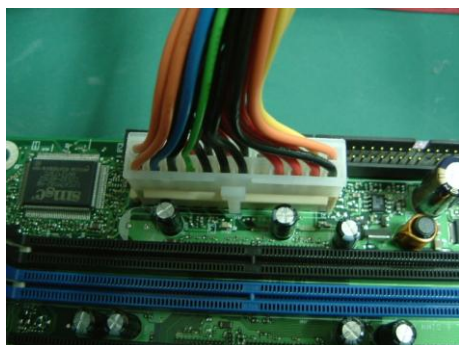  (6 PIN of Power supply to 6 PIN of VGA card)
  (8 PIN of Power supply to 8 PIN of VGA card)

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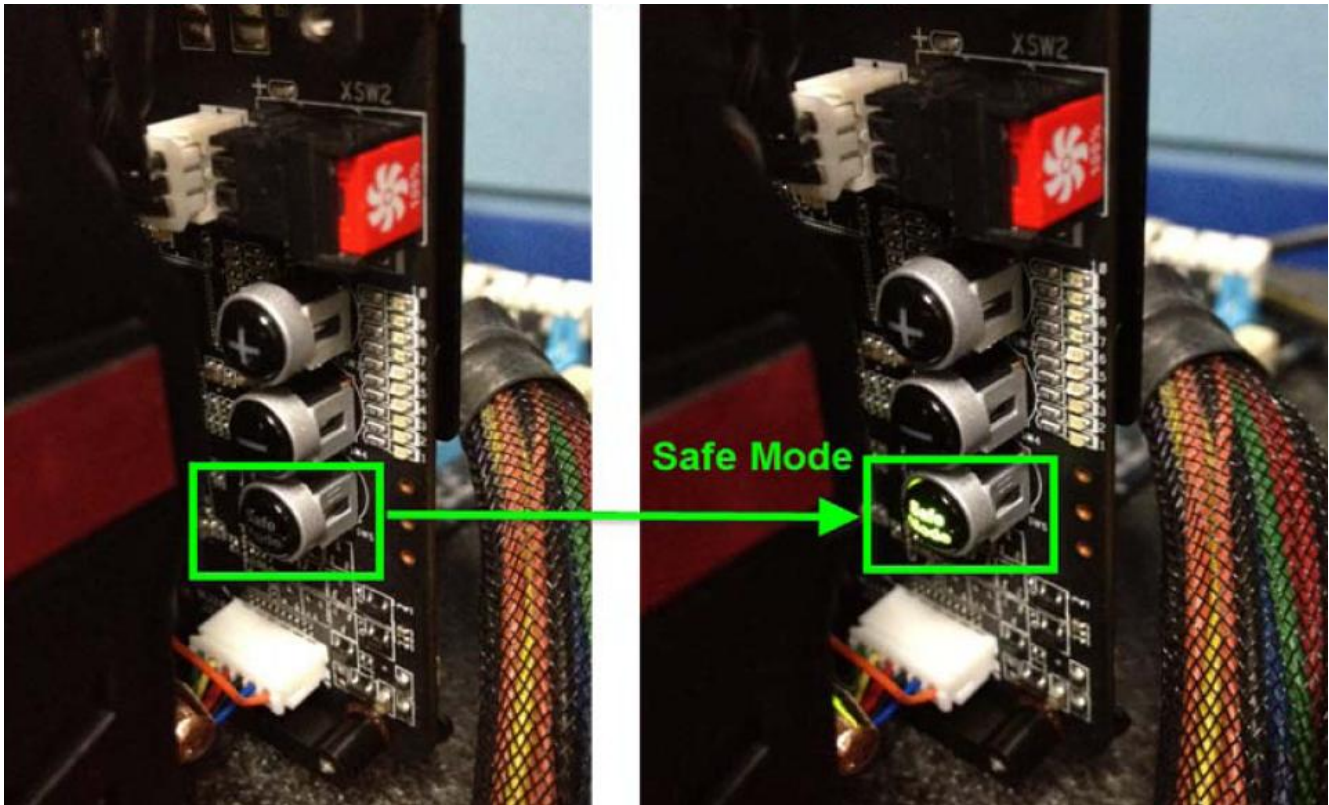6.2.8 Plug ATX Power on Power**(a minimum power of 1200W)** Connector.

## 6.3 Certain test.
### 6.3.1 MCU test in 1204_64-bit LINUX system
6.3.1.1 Please set the switch to U3(near GPU) to test MCU function, then press "Safe Mode" button enter into linux system.
  (Note: before starting your computer, you must press "Safe Mode" button and enter into Safe Mode, then you may start your computer to test MCU function.)

6.3.1.2 After starting your computer on "Safe Mode", you can run ./test.sh to test MCU functions (Safe Mode Button; MVDD,VDDCI,MVDD Imon,VDDCI Imon, Tmem, Tmemp, Tamb, Tcip & Fan2).
   Path: matrix-r9280X\MCU



6.3.1.3 If MATRIX LED is color Purple, press "Y" and "enter" key to test next function. If MATRIX LED is not color Purple, press "N" and "enter" key to test next function.

6.3.1.4 test 10 LEDs , if 10 LEDs are all light up, please press "Y" and "enter" key to test next function.

    If 10 LEDs are not all light up, please press "N" and "enter" key to test next function.



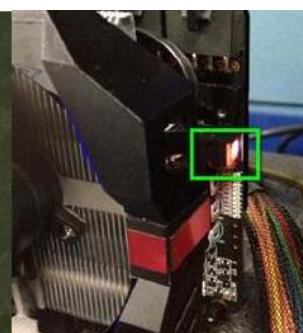6.3.1.4 test Full Fan Speed Button Enable, press Full Fan Speed Button, MCU will automatically judge it pass or fail, then test next function.

```
VDDCI Power Temperature = 101.0 --> OK  Range: 50.0 ~ 150.0
Fan2 Control Test = 255.0        --> OK
If MATRIX LED is color Purple, press 'Y'. If not, press 'N'
y
MATRIX LED color Purple Test --> OK
Is 10 LED light up? 'Y'. If not, press 'N'
y
10 LED Test  --> OK
Please Enable Full Fan Speed Button
```
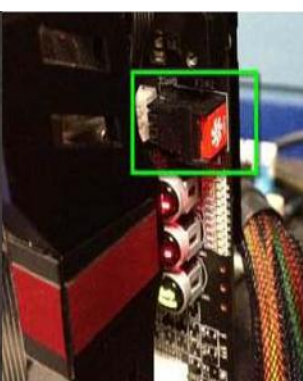
6.3.1.5 test Full Fan Speed Button Disable, press Full Fan Speed Button again, MCU will automatically judge it pass or fail, then test next function.



```
If MATRIX LED is color Purple, press 'Y'. If not, press 'N'
y
MATRIX LED color Purple Test --> OK
Is 10 LED light up? 'Y'. If not, press 'N'
y
10 LED Test  --> OK
Please Enable Full Fan Speed Button
Please Disable Full Fan Speed Button
```
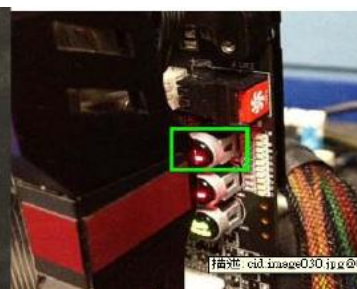
6.3.1.6 test Voltage UP Button, press Voltage UP Button, MCU will automatically judge it pass or fail, then test next function.



```
MATRIX LED color Purple Test --> OK
Is 10 LED light up? 'Y'. If not, press 'N'
y
10 LED Test  --> OK
Please Enable Full Fan Speed Button
Please Disable Full Fan Speed Button
  ... PASS
Please Press Voltage UP Button
```
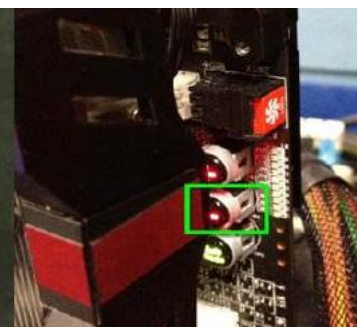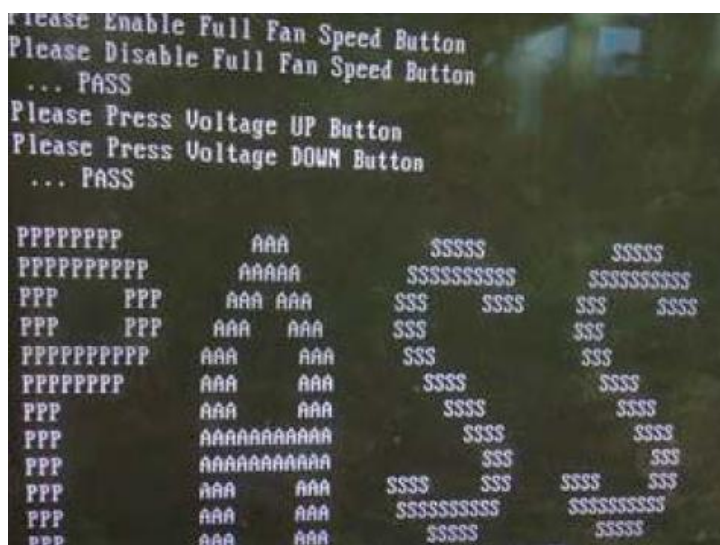
6.3.1.7 test Voltage DOWN Button, press Voltage DOWN Button, MCU will automatically judge it pass or fail, then test next function.



```
MATRIX LED color Purple Test --> OK
Is 10 LED light up? 'Y'. If not, press 'N'
y
10 LED Test  --> OK
Please Enable Full Fan Speed Button
Please Disable Full Fan Speed Button
  ... PASS
Please Press Voltage UP Button
Please Press Voltage DOWN Button
```

6.3.1.8 all function test of MCU is complete, it will show the test result of MCU(PASS or Fail).

## 6.3.2 Diagnostic test in 1204_64-bit LINUX system

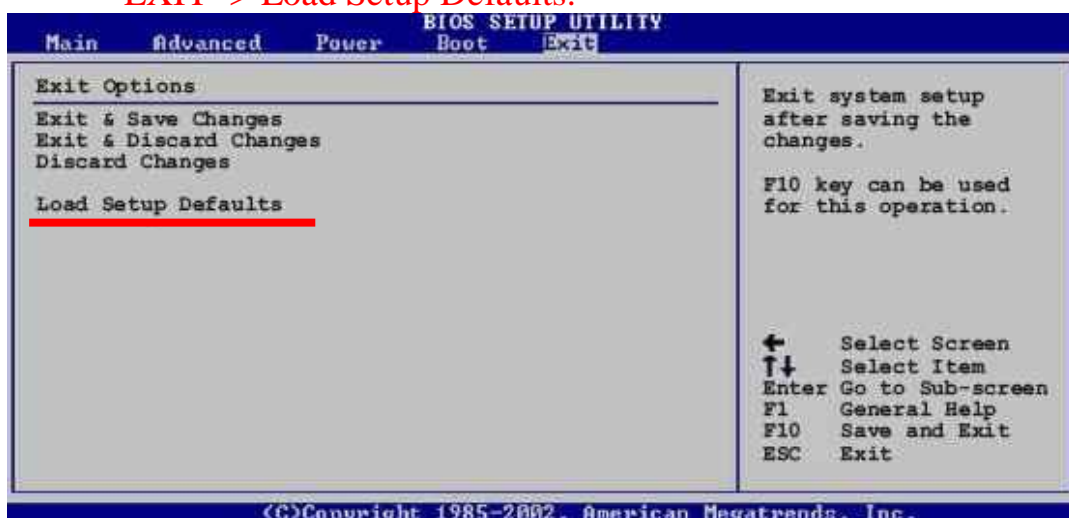6.3.2.1 Please connect LCD monitor & card's DVI CON via a DVI cable.



Dual link DVI cable

6.3.2.2 Press Power Switch then turn on power button.

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

EXIT -> Load Setup Defaults.



6.3.2.4 Run test program in 64-bit linux system.

Path: matrix-r9280X\yv02p0a0.sh or yv02p1a0.sh

Please enter into the file of matrix-r9280X enter the following command:

cd ./matrix_r9280X

Then, please run ./yv04z0a0.sh or ./yv04z1a0.sh

Please set the switch to U3(near GPU) to test MCU function and check U3 BIOS, then set it to U2 to test all function(diag program), after test ok, set the switch to U2(near IO) and return cards to customer.

6.3.2.5 Memory test

If you want to test memory, please run ./tserver -test=memfa

Path:matrix-r9280X\

6.3.2.6 BIOS Version

If you want to see the version of bios, please run ./atiflash –ai 0 or ./biosinfo

Path:matrix_r9280X\

6.3.2.7 BIOS flash(U2/U3)

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

Path:matrix-r9280X\

Command:./atiflash -p -f 0 xxx.rom

Notice:

If you can not flash bios because of the bios locked, please use ./atiflash –unlockrom 0 to unlock bios. And then, please use ./atiflash –lockrom 0 to lock bios after updating latest bios.

6.3.2.8 FAN Test

If you want to test FAN, please run ./aft

Path: Path: matrix_r9280X2\AFT

Notice:

./aft apply the following Part Number

YV04Z0-A01&YV04Z1-A01

6.3.2.9 After finishing 64-bit Linux testing, please enter Windows environment to test 3DMark.

## 6.3.2 3DMark test(contain HDMI test)

6.3.2.1 Please install 3DMark program by yourself.

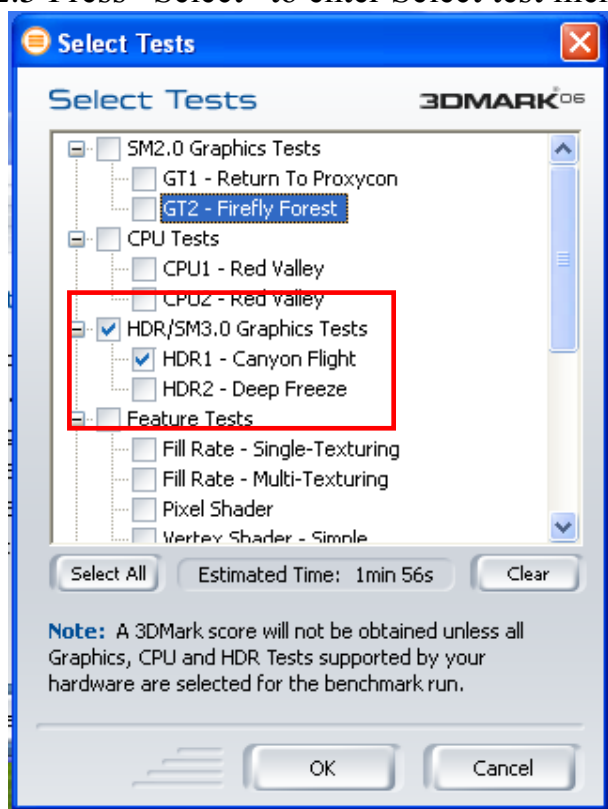6.3.2.2 Please connect VGA card to LCD via Display Port cable.
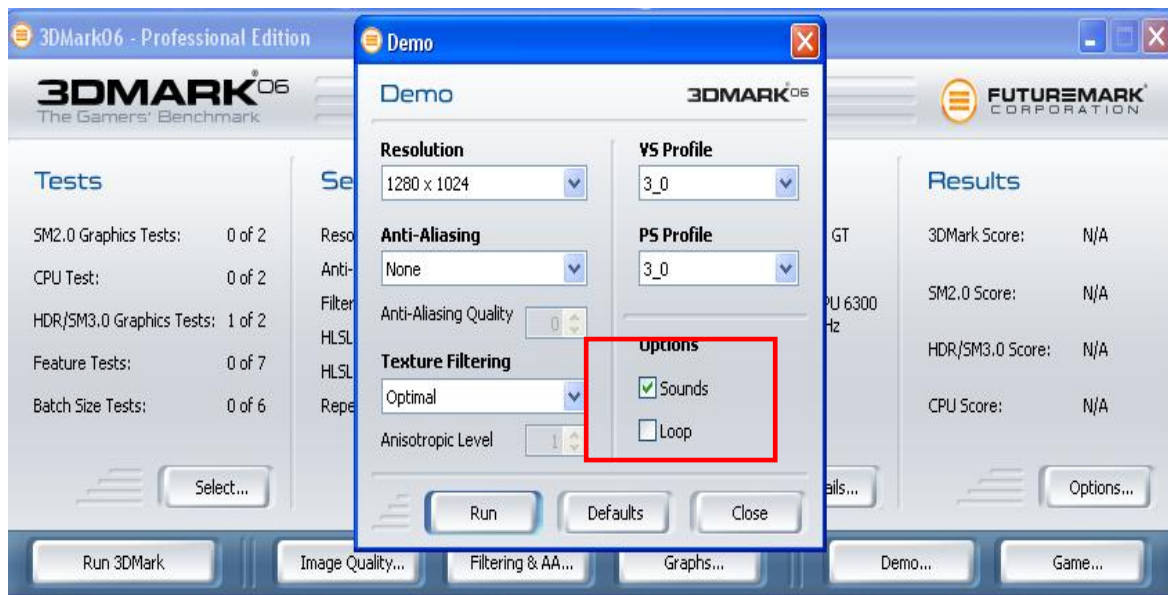


DISPLAY cable

Display Port CON(*4)

6.3.2.3 Please install VGA card driver in Windows(You must use 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.
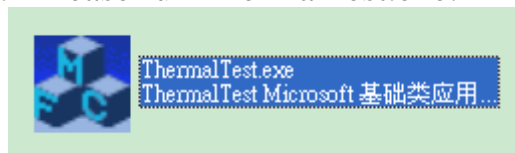


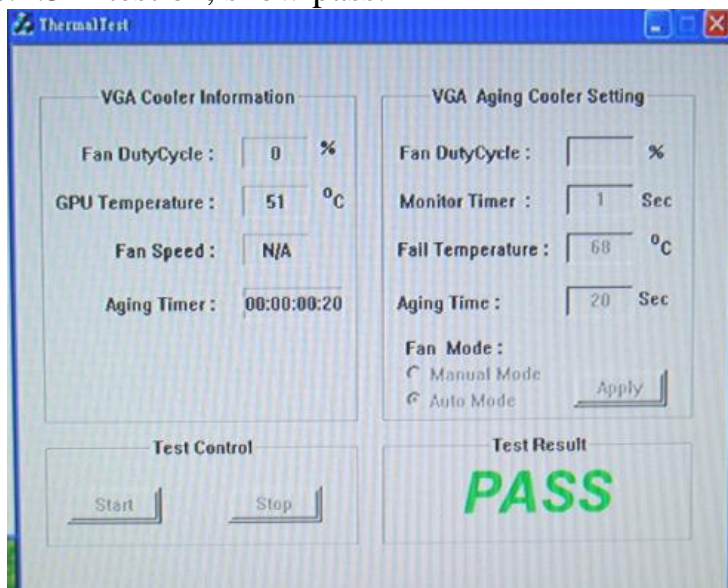6. 3.2.9 If test OK, please test temperature test.

## 6.4 Temperature test
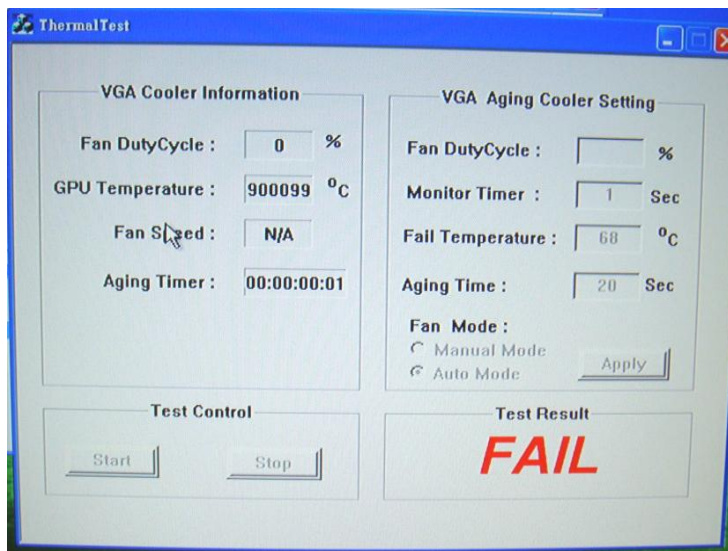
6.4.1 Please copy Thermaltool(1.0.05) to Windows by yourself.

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.

   YV04Z0-A0* & YV04Z1-A0* is 70 degrees.

## 7.Appendix

| NO# | Equipment Description | ASUS Part# | Supplier | Quantity | Remarks |
|---|---|---|---|---|---|
| 1 | **Dell 30 inches (3008WFP)** <br> **(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** <br> **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** <br> **(Buying a local DVI cable by yourself)** | | | **1** |  |
| 12 | **HDMI extend cable** <br> **(Buying a local HDMI cable by yourself)** | | | **1** |  |
| 13 | **P7H55-M/USB3 MB** | **80- MIBBKA-*** | | **1** | |
| 14 | **Display port cable** <br> **(Buying a local Display port cable by yourself)** | | | **1** |  |