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| ASUSTeK COMPUTER<br>INC. | R9FURY<br>Standard Operation Procedure | Doc. No:                           |        |
|                          |  | Date: Jul.16.2015<br>Revision:1.00 |        |
|                          |  | Page: 10                           | Grade: |

| Rev. | Modified Chapters | Modification Description | Issued Dept. | Issued by | Revised Date |
|------|-------------------|--------------------------|--------------|-----------|--------------|
| 1.00 |                   | First Release            | GTSD         | Mao Lu    | Jul.16.2015  |

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| Authorize<br>by |  | Review<br>by |  | Originator<br>By | Mao |
|-----------------|--|--------------|--|------------------|-----|

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| <div data-bbox="86 248 309 297"><b>1.Objectives</b></div> <div data-bbox="304 297 632 338">Create test procedure.</div> <div data-bbox="86 383 225 432"><b>2.Scope</b></div> <div data-bbox="245 432 603 510">Model: R9FURYX<br/>PN:YV08N0(A01)</div> <div data-bbox="86 510 288 560"><b>3.Test Item</b></div> <div data-bbox="304 560 935 728"> <div data-bbox="304 560 935 600">3.1 Diagnostic test in 12_04_64-bit Linux</div> <div data-bbox="304 600 831 640">3.2 3DMark11(contain HDMI test)</div> <div data-bbox="304 640 619 680">3.3 Temperature test</div> <div data-bbox="304 680 496 728">3.4 Fan Test</div> </div> <div data-bbox="86 779 480 828"><b>4.Relevant Document</b></div> <div data-bbox="304 828 395 869">None.</div> <div data-bbox="86 913 1497 1265"> <div data-bbox="86 913 1497 1003"><b>5.Definition</b> :1. If the model name contains P, please test HDCP function.<br/>Ex: EAH***/HTDP/512M/A</div> <div data-bbox="320 1003 1497 1093">2. If you test HDMI already, it's unnecessary to test HDCP. The HDMI contains HDCP function.</div> <div data-bbox="320 1093 1497 1227">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</div> <div data-bbox="320 1227 1125 1265">4. R9FURYX Test Program in 64-bit Linux system.</div> </div> <div data-bbox="86 1989 544 2038"><b>6. Operation Procedures:</b></div> <div data-bbox="113 2083 347 2132"><b>6.1 Attention</b></div> |  |  |

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- 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.

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|----------------------|--|--|

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 R9FURYX 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)**

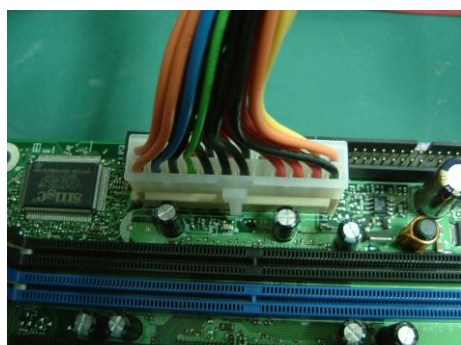
**(8 PIN of Power supply to 8 PIN of VGA card)**

6.2.6 Connect SATA HDD & SATA con via SATA cable



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 cable.



Dual link DVI 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 linux system.

Path:R9FURYX\ yv08n0a0.sh

#### 6.3.1.5 Memory test

If you want to test memory, please run `./tserver -boardtest=memfa` or `./memtest.sh`

Path:R9FURYX\

#### 6.3.1.6 BIOS Version

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

Path:R9FURYX\

#### 6.3.1.7 BIOS flash

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

Path:R9FURYX\

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.

#### 6.3.1.8 FAN Test

Please run `./aft2fan..`

Path:R9FURYX\AFT

#### 6.3.1.9 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 HDMI cable or MINI Display Port or Display Port to HDMI cable or Display Port cable or D-SUB cable.

MINI Display Port to  
HDMI cable**MINI Display Port CON(\*2)**

HDMI cable

**HDMI Port**

DISPLAY cable

**Display Port CON**

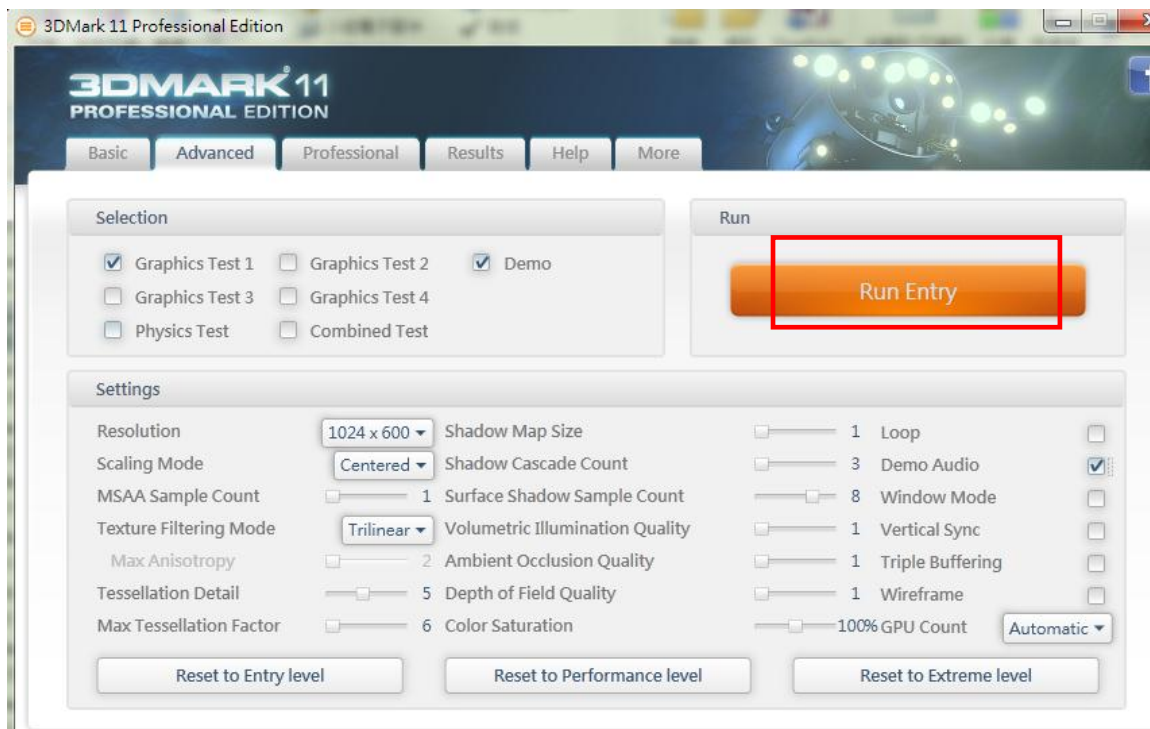
D-SUB cable

**D-SUB Port**

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 3DMark11 base on this card (please test 1 cycle).

6.3.2.5 Press “Advanced” to enter Select test menu. You can choose “Graphics Test ” for default setting.



6.3.2.6 Press “Run Entry” to start testing.

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.



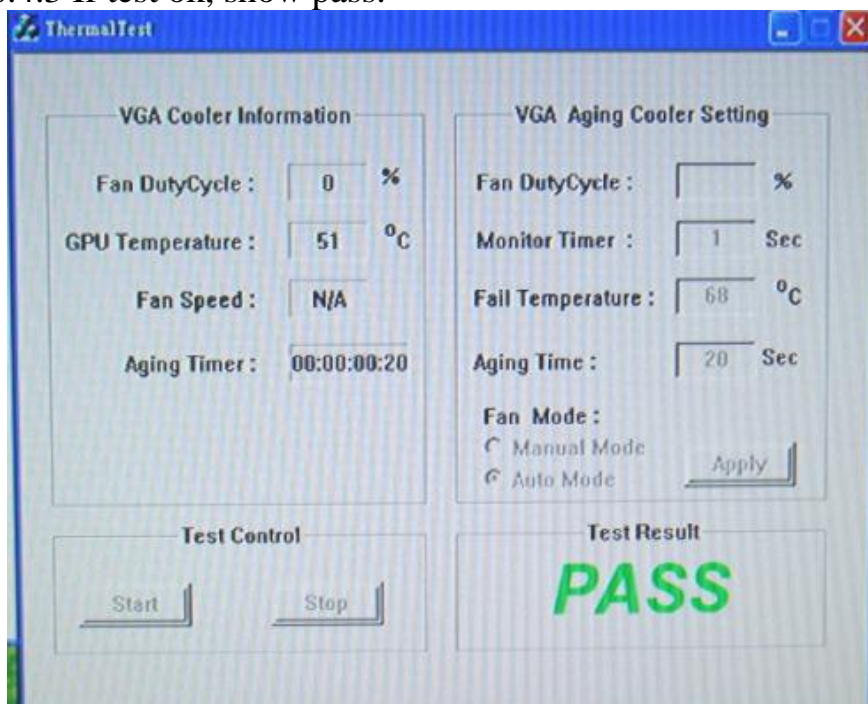
## 6.4 Temperature test(85°C)

6.4.1 Please copy Thermaltool(1.1.2.2) to Windows by yourself.

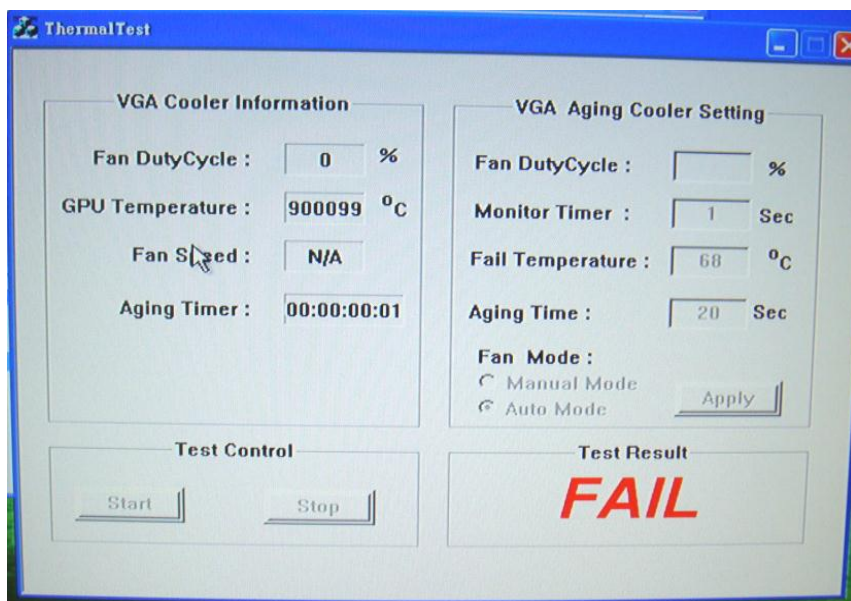
6.4.2 Please run ThermalTest.exe.



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.



## 7.Appendix

| NO# | Equipment Description   | ASUS Part#   | Supplier | Quantity | Remarks   |
|-----|---|--------------|----------|----------|---|
| 1   | <b>Dell 30 inches (3008WFP)</b><br><b>(Buying a local LCD by yourself)</b>                                    |              |          | 1        |    |
| 2   | <b>USB MOUSE</b>  |              |          | 1        |    |
| 3   | <b>PS/2 KEYBOARD</b>  |              |          | 1        |    |
| 4   | <b>ATX POWER SUPPLY(a minimum power of 500W)</b>  |              |          | 1        |    |
| 5   | <b>Intel CPU</b><br><b>Intel(R) Core(TM)2 CPU</b>   |              | local    | 1        |    |
| 6   | <b>Heat sink + FAN</b>  | 22-240000160 |          | 1        |   |
| 7   | <b>DDR3 1333 2G</b>   | 20-TT2605618 | local    | 4        |  |
| 8   | <b>TEST HDD</b>   |              |          | 1        |  |
| 9   | <b>SATA HDD Cable</b>   | 14-000107070 | ASUS     | 1        |  |
| 10  | <b>PCIEX16 VGA CARD</b>   |              |          | 1        |   |
| 11  | <b>Dual link DVI cable</b><br><b>(Buying a local DVI cable by yourself)</b>                                   |              |          | 1        |  |
| 12  | <b>HDMI extend cable</b><br><b>(Buying a local HDMI cable by yourself)</b>                                    |              |          | 1        |  |
| 13  | <b>P7H55-M/USB3 MB</b>  | 80- MIBBKA-* |          | 1        |   |
| 14  | <b>Display port cable</b><br><b>(Buying a local Display port cable by yourself)</b>                           |              |          | 1        |  |
| 15  | <b>Mini Display port to HDMI cable</b><br><b>(Buying a local Mini Display port to HDMI cable by yourself)</b> |              |          | 1        |  |
| 16  | <b>D-SUB extend cable</b><br><b>(Buying a local D-SUB cable by yourself)</b>                                  |              |          | 1        |  |