

AIR-030 QA Test

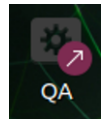
Date	11/28/2022	Release Ver.	V1.0
Category	<input type="checkbox"/> FAQ <input checked="" type="checkbox"/> SOP	Release Note	<input checked="" type="checkbox"/> Internal <input type="checkbox"/> External
Related OS	Ubuntu 20.04		
Abstract	AIR-030 QA Test 介紹		
Keyword	AIR-030, QA Test		
Related Product	N/A		

■ 描述:

描述 AIR-030 上 QA Test 各項測項的介紹

執行桌面的 ICON, 或是開啟桌面 terminal icon 輸入底下指令:

```
$ sudo ./qatest/burnin.sh
```



■ 測試項目:

(一)EMMC

測試結果:

成功後面顯示 "[PASS]" , 失敗顯示 "FAIL"

```
Terminal
[20220421.12.57.21] EMMC : Read/Write (count:73 / infinite) - [PASS]
[20220421.12.57.22] EMMC : Read/Write (count:74 / infinite) - [PASS]
```

(二)SD card

SD card 請先格式化好, 主板需要 rework clk 線路上的電阻

測試結果:

成功後面顯示 "[PASS]" , 失敗顯示 "FAIL"

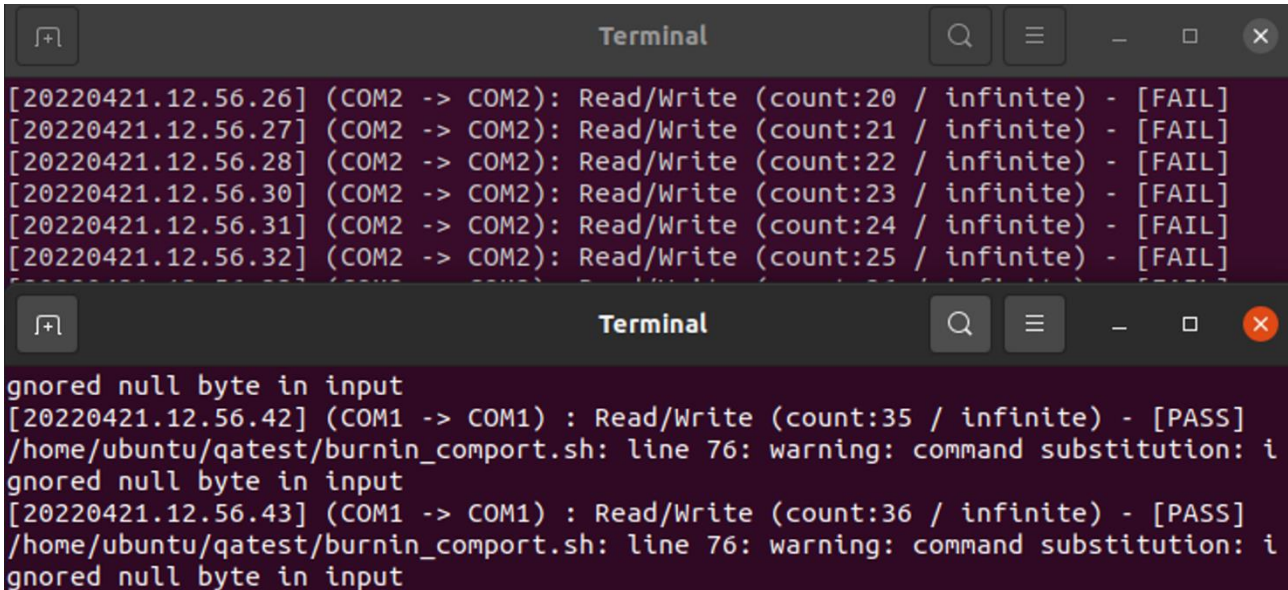
```
Terminal
[20220421.12.58.34] SDCARD(mmcbk1p1) : Read/Write (count:138 / infinite) - [PASS]
[20220421.12.58.35] SDCARD(mmcbk1p1) : Read/Write (count:139 / infinite) - [PASS]
```

(三)COM Port

以 RS232 loop back 測試, 請接上 loop back 治具, jumper 全部調成 OFF

測試結果:

成功後面顯示 "[PASS]" , 失敗顯示 " FAIL"

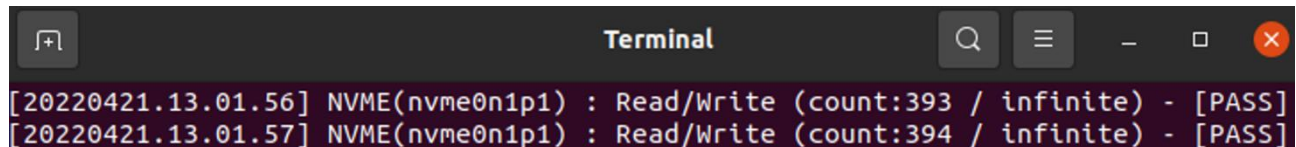


```
Terminal
[20220421.12.56.26] (COM2 -> COM2): Read/Write (count:20 / infinite) - [FAIL]
[20220421.12.56.27] (COM2 -> COM2): Read/Write (count:21 / infinite) - [FAIL]
[20220421.12.56.28] (COM2 -> COM2): Read/Write (count:22 / infinite) - [FAIL]
[20220421.12.56.30] (COM2 -> COM2): Read/Write (count:23 / infinite) - [FAIL]
[20220421.12.56.31] (COM2 -> COM2): Read/Write (count:24 / infinite) - [FAIL]
[20220421.12.56.32] (COM2 -> COM2): Read/Write (count:25 / infinite) - [FAIL]
[20220421.12.56.42] (COM1 -> COM1) : Read/Write (count:35 / infinite) - [PASS]
/home/ubuntu/qatest/burnin_comport.sh: line 76: warning: command substitution: i
gnored null byte in input
[20220421.12.56.43] (COM1 -> COM1) : Read/Write (count:36 / infinite) - [PASS]
/home/ubuntu/qatest/burnin_comport.sh: line 76: warning: command substitution: i
gnored null byte in input
```

(四)NVME

測試結果:

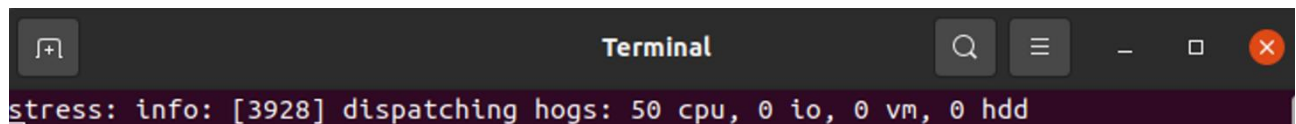
成功後面顯示 "[PASS]" , 失敗顯示 " FAIL"



```
Terminal
[20220421.13.01.56] NVME(nvme0n1p1) : Read/Write (count:393 / infinite) - [PASS]
[20220421.13.01.57] NVME(nvme0n1p1) : Read/Write (count:394 / infinite) - [PASS]
```

(五)CPU

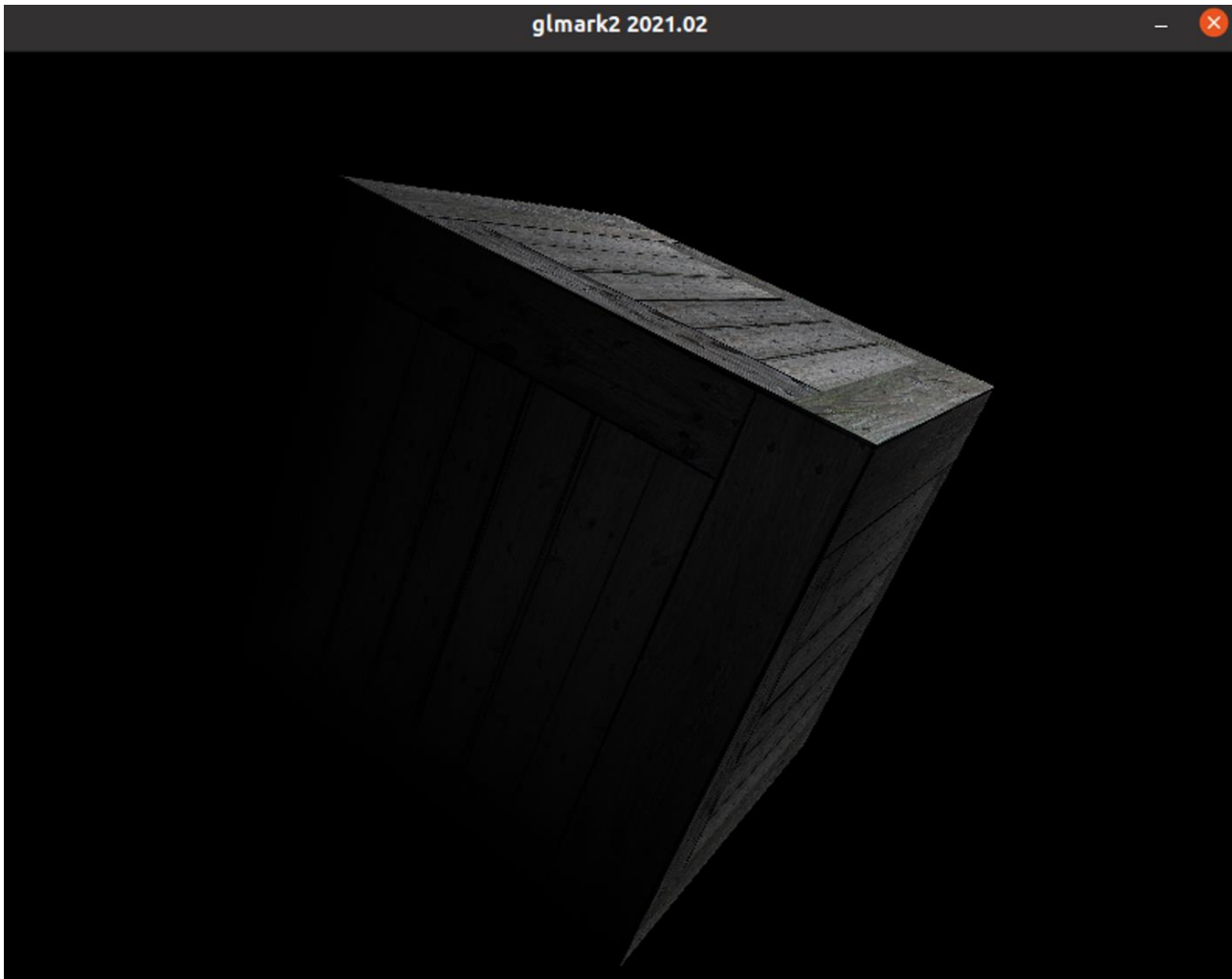
開啟 50 個 worker 去跑



```
Terminal
stress: info: [3928] dispatching hogs: 50 cpu, 0 io, 0 vm, 0 hdd
```

(六)GPU

開啟一個 3D rendering



(七)Memory Test

使用 memtester 燒 15G 的量

```
Terminal
memtester version 4.3.0 (64-bit)
Copyright (C) 2001-2012 Charles Cazabon.
Licensed under the GNU General Public License version 2 (only).

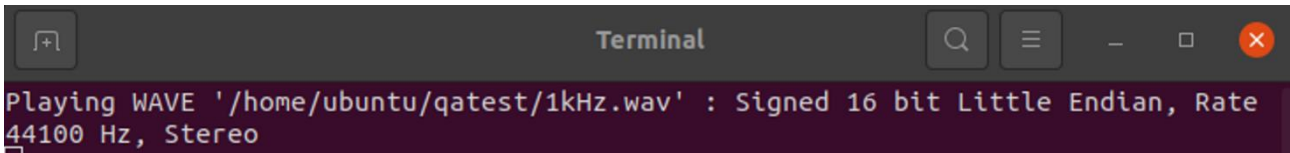
pagesize is 4096
pagesizemask is 0xffffffffffff000
want 15360MB (16106127360 bytes)
got 15360MB (16106127360 bytes), trying mlock ...locked.
Loop 1:
  Stuck Address      : testing 3
```

(八) Ethernet Test

三個 lan 分別對遠端三個 IP ("192.168.0.1", "192.168.0.2", "192.168.0.3") 測試，環境需要準備好設定這三個 static IP 給 DUT 測試

(九) Audio

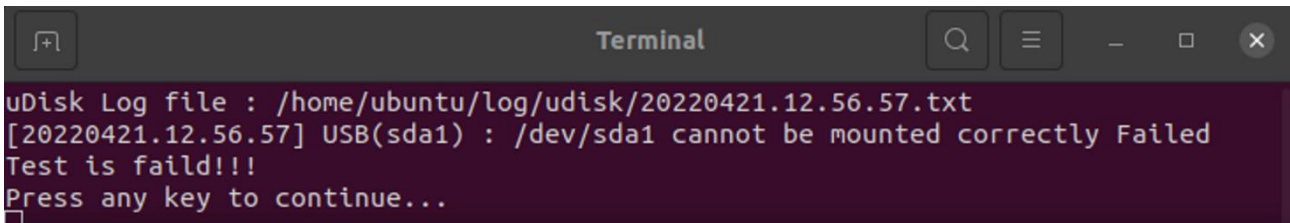
持續播放 1kHz 聲音輸出到 line-out



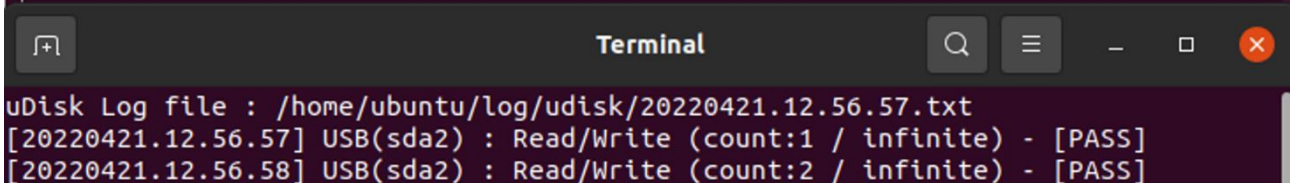
```
Terminal
Playing WAVE '/home/ubuntu/qatest/1kHz.wav' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
```

(十) USB

插入 U-Disk 測試，只有被插入的 usb 孔才會測試。另外，倘若 U-Disk 有多個 partition，所有 partition 都會加入測試。若此 partition 無法掛載會直接顯示出來。



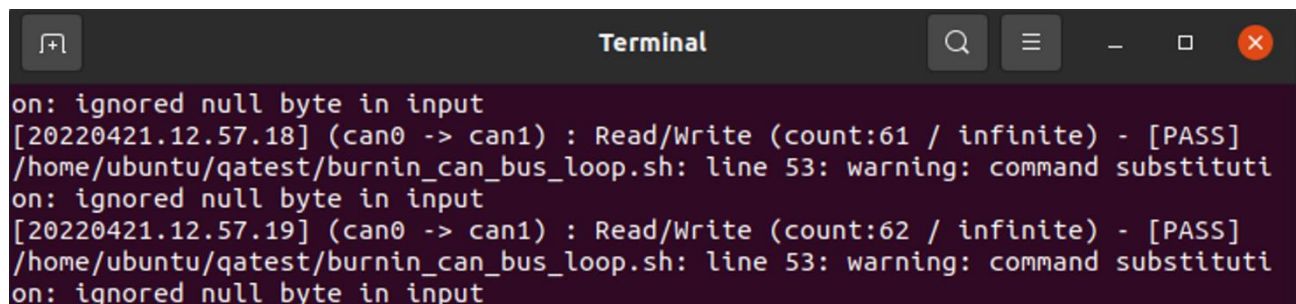
```
Terminal
uDisk Log file : /home/ubuntu/log/udisk/20220421.12.56.57.txt
[20220421.12.56.57] USB(sda1) : /dev/sda1 cannot be mounted correctly Failed
Test is faild!!!
Press any key to continue...
```



```
Terminal
uDisk Log file : /home/ubuntu/log/udisk/20220421.12.56.57.txt
[20220421.12.56.57] USB(sda2) : Read/Write (count:1 / infinite) - [PASS]
[20220421.12.56.58] USB(sda2) : Read/Write (count:2 / infinite) - [PASS]
```

(十一) Can Test

測試 can 傳輸，從 can0 到 can1



```
Terminal
on: ignored null byte in input
[20220421.12.57.18] (can0 -> can1) : Read/Write (count:61 / infinite) - [PASS]
/home/ubuntu/qatest/burnin_can_bus_loop.sh: line 53: warning: command substituti
on: ignored null byte in input
[20220421.12.57.19] (can0 -> can1) : Read/Write (count:62 / infinite) - [PASS]
/home/ubuntu/qatest/burnin_can_bus_loop.sh: line 53: warning: command substituti
on: ignored null byte in input
```

(十二) DIO

對底下的 pin 做 in/out 的 high/low 測試，測一次即掃描一整組

```
GPIO_OUT="300 301 302 303 304 305 306 307"
```

```
GPIO_IN="308 309 310 311 312 313 314 315"
```



```
Terminal
gpio IN pin : gpio315 is the same as gpio OUT pin- [PASS]
[20220421.12.56.18] (count:6 / infinite)
write 1 value to gpio OUT : gpio300
write 1 value to gpio OUT : gpio301
write 1 value to gpio OUT : gpio302
write 1 value to gpio OUT : gpio303
write 1 value to gpio OUT : gpio304
write 1 value to gpio OUT : gpio305
write 1 value to gpio OUT : gpio306
write 1 value to gpio OUT : gpio307
gpio IN pin : gpio308 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio309 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio310 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio311 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio312 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio313 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio314 is the same as gpio OUT pin- [PASS]
gpio IN pin : gpio315 is the same as gpio OUT pin- [PASS]
[20220421.12.56.18] (count:7 / infinite)
write 0 value to gpio OUT : gpio300
write 0 value to gpio OUT : gpio301
write 0 value to gpio OUT : gpio302
write 0 value to gpio OUT : gpio303
```

(十三)JTOP

這是一個監測目前系統狀態的功用程式，列出了 CPU、GPU、Memory 等資訊

1.指令：

```
$ sudo jtop
```

```
NVIDIA Jetson Xavier NX (Developer Kit Version) - Jetpack 4.5.1 [L4T 32.5.2]
CPU1 [|||   Schedutil - 10%] 1.3GHz CPU4 [|||   Schedutil - 15%] 1.4GHz
CPU2 [||||  Schedutil - 16%] 1.4GHz CPU5 [||   Schedutil - 9%] 1.4GHz
CPU3 [|||   Schedutil - 11%] 1.4GHz CPU6 [||   Schedutil - 7%] 1.2GHz

MTS FG [   ] 0%] BG [   ] 0%]
Mem [|||||||] 1.7G/8.0GB] (lfb 1333x4MB)
Swp [   ] 0.0GB/3.9GB] (cached 0MB)
EMC [||] 2%] 1.6GHz

GPU [   ] 0%] 114MHz
Dsk [#####] 6.0GB/13.7GB]

----- [info] ----- [Sensor] ----- [Temp] ----- [Power/mW] ----- [Cur] [Avr] -----
UpT: 0 days 0:33:57      AO          43.00C      CPU GPU CV      726      867
FAN [   ] 0%] Ta= 0%    AUX          44.50C      SOC             1209     1226
Jetson Clocks: inactive CPU           46.50C      ALL             4846     5029
NV Power[2]: 15W 6CORE GPU           43.00C
----- [HW engines] ----- thermal        44.50C
APE: 150MHz
NVENC: [OFF]  NVDEC: [OFF]
NVJPG: [OFF]

1ALL 2GPU 3CPU 4MEM 5CTRL 6INFO Quit Raffaello Bonghi
```

■ **Reference:**