

Technical Case Sharing -
**Testing UTX-3115 IO
Function on IDP OS**

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2015/04/29

Outline

- Information command
- USB Speed test
- Ethernet command
- Bandwidth measure
- Audio & Mic test
- Comport test
- Wifi+3G identify



Information

- Kernel version
 - `uname -a`
- CPU
 - `cat /proc/cpuinfo`
- Memory
 - `cat /proc/meminfo`
- PCI
 - `lspci`
- USB
 - `lsusb`

USB Speed

- List disk

- fdisk -l

- USB Read

- hdparm -Tt /dev/sdxx

```
root@WR-IntelligentDevice:~# hdparm -Tt /dev/sdb2

/dev/sdb2:
Timing cached reads:   2520 MB in  2.00 seconds = 1259.92 MB/sec
Timing buffered disk reads: 300 MB in  3.00 seconds =  99.85 MB/sec
root@WR-IntelligentDevice:~# █
```

- USB Write

- dd if=/dev/zero of=/media/sdxx/usbtest bs=10240000 count=5

```
root@WR-IntelligentDevice:~# dd if=/dev/zero of=/media/sdc2/usbtest bs=10240000 count=5
5+0 records in
5+0 records out
512000000 bytes (512 MB) copied, 32.014 s, 16.0 MB/s
root@WR-IntelligentDevice:~# █
```

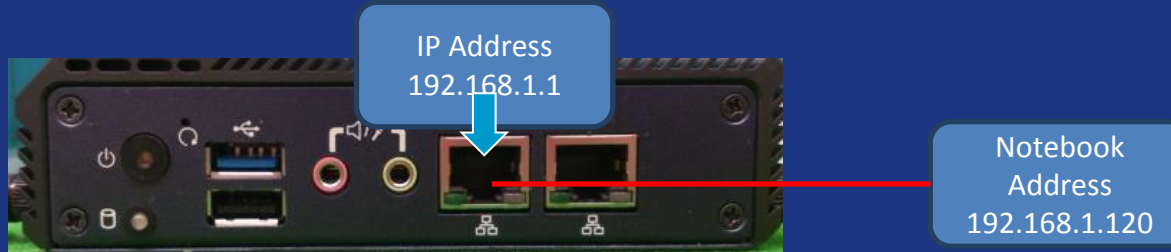
Ethernet

- Ethernet information
 - ifconfig
- Ethernet connect
 - ping IP Address
- Ethernet router
 - traceroute IP Address

```
root@WR-IntelligentDevice:~# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_req=1 ttl=46 time=11.1 ms
64 bytes from 8.8.8.8: icmp_req=2 ttl=46 time=10.7 ms
64 bytes from 8.8.8.8: icmp_req=3 ttl=46 time=10.8 ms
```

```
root@WR-IntelligentDevice:~# traceroute 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 38 byte packets
 1 * * *
 2 218.32.15.193 (218.32.15.193) 2.228 ms 1.989 ms 1.805 ms
 3 61.66.239.222 (61.66.239.222) 1.865 ms 1.778 ms 1.695 ms
 4 220.228.23.21 (220.228.23.21) 2.245 ms 2.026 ms 1.981 ms
 5 192.72.155.53 (192.72.155.53) 1.758 ms 1.680 ms 1.643 ms
 6 192.72.49.81 (192.72.49.81) 2.140 ms 2.086 ms 2.070 ms
 7 139.175.57.217 (139.175.57.217) 4.405 ms 36.639 ms 3.454 ms
 8 139.175.58.18 (139.175.58.18) 2.189 ms 192.72.154.6 (192.72.154.6) 2.209 ms 139.175.58.18 (139.175.58.18) 2.201 ms
 9 72.14.215.117 (72.14.215.117) 2.496 ms 72.14.202.78 (72.14.202.78) 2.214 ms 27.984 ms
10 209.85.243.30 (209.85.243.30) 5.371 ms 5.462 ms 72.14.202.78 (72.14.202.78) 2.156 ms
11 209.85.242.163 (209.85.242.163) 9.368 ms 209.85.243.30 (209.85.243.30) 5.241 ms 209.85.242.163 (209.85.242.163) 5.578 ms
12 216.239.50.47 (216.239.50.47) 5.419 ms 216.239.50.45 (216.239.50.45) 5.328 ms 209.85.252.213 (209.85.252.213) 5.917 ms
13 * * *
14 * * 8.8.8.8 (8.8.8.8) 5.506 ms
root@WR-IntelligentDevice:~# █
```

Bandwidth



- UTX-3115(Server)

- iperf -s

```
^Croot@WR-IntelligentDevice:/media/sdc1/Test_tool# ./iperf -s
-----
Server listening on TCP port 5001
TCP window size: 85.3 KByte (default)
-----
[  4] local 192.168.1.1 port 5001 connected with 192.168.1.120 port 11434
[ ID] Interval      Transfer    Bandwidth
[  4] 0.0-10.0 sec   639 MBytes  535 Mbits/sec
^CQuit
root@WR-IntelligentDevice:/media/sdc1/Test_tool#
```

- Notebook(Client)

- iperf -c 192.168.1.1

```
C:\Users\Yaqui.kao\Desktop\iperf-2.0.5-3-win32>iperf -c 192.168.1.1
-----
Client connecting to 192.168.1.1, TCP port 5001
TCP window size: 63.0 KByte (default)
-----
[  3] local 192.168.1.120 port 11434 connected with 192.168.1.1 port 5001
[ ID] Interval      Transfer    Bandwidth
[  3] 0.0-10.0 sec   639 MBytes  536 Mbits/sec
```

Audio & Mic

- Audio (Prepare .wav file and headphone)

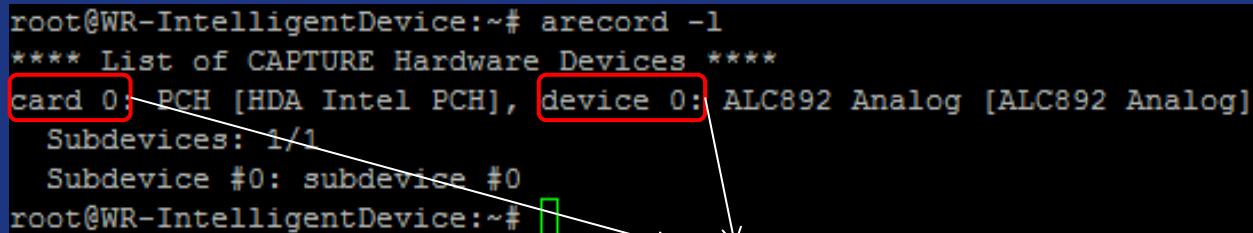
- aplay musicname.wav

```
root@WR-IntelligentDevice:~# aplay music.wav
Playing WAVE 'music.wav' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
```

- Mic (Prepare microphone)

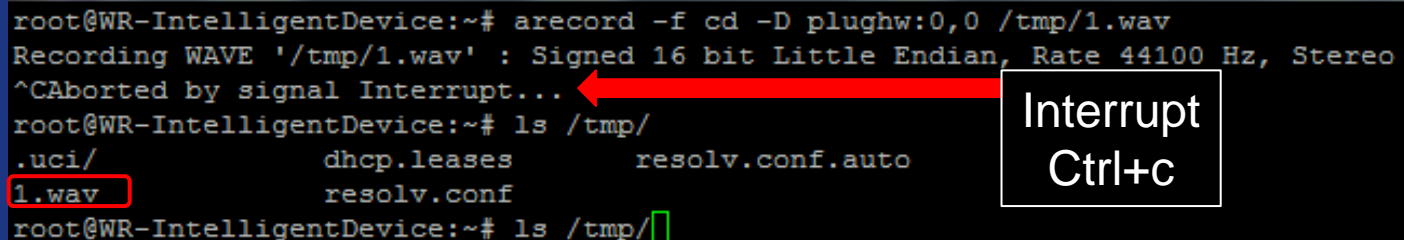
- arecord -l

```
root@WR-IntelligentDevice:~# arecord -l
**** List of CAPTURE Hardware Devices ****
card 0: PCH [HDA Intel PCH], device 0: ALC892 Analog [ALC892 Analog]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
root@WR-IntelligentDevice:~# █
```



- arecord -f cd -D plughw:X,X /tmp/test.wav

```
root@WR-IntelligentDevice:~# arecord -f cd -D plughw:0,0 /tmp/1.wav
Recording WAVE '/tmp/1.wav' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
^CAborted by signal Interrupt...
root@WR-IntelligentDevice:~# ls /tmp/
.uci/          dhcp.leases    resolv.conf.auto
1.wav         resolv.conf
root@WR-IntelligentDevice:~# ls /tmp/█
```



Interrupt
Ctrl+c

Mic IN Audio Out

- Mic In + Audio Out

- arecord -l

```
root@WR-IntelligentDevice:~# arecord -l
**** List of CAPTURE Hardware Devices ****
card 0: PCH [HDA Intel PCH], device 0: ALC892 Analog [ALC892 Analog]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
root@WR-IntelligentDevice:~#
```

- arecord -D hw:0,0 -f cd | aplay -D hw:0 -f cd

```
root@WR-IntelligentDevice:~# arecord -D hw:0,0 -f cd | aplay -D hw:0 -f cd
Recording WAVE 'stdin' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
Playing WAVE 'stdin' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
```


Wi-Fi & 3G Modules

- Needed:
 - Wi-Fi module (Intel AC7260)
 - 3G module (Telit HE910)
 - Notebook (Wi-Fi capability)

1. Power on the UTX-3115. We can see wireless node name "IDPDK-XXXX" at notebook side.

2. Connect it.

Password default windriveridp

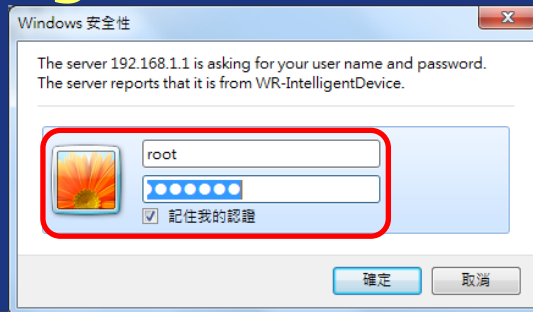


Wi-Fi & 3G Modules

3. Open browser, url is <https://192.168.1.1>



4. Login interface. Username/Password: root



Wi-Fi & 3G Modules

5. We can see the WIND RIVER website
(At this step, we can make sure the wifi module is OK)



Wind River Intelligent Device Platform XT 2.0

Host: WR-IntelligentDevice
Date: 2015-04-17
Uptime: 13 min, 0 users
Time: 08:29:54
Load: 0.21, 0.21, 0.14
Logout

Info Graphs Status Log System Network VPN Device Agent

System Notes About

System Information

Firmware	Wind River Intelligent Device Platform - With Webif Extensions XT 2.0
Kernel	Linux 3.4.88-WR5.0.1.17_standard_IDP-XT_2.0.2.17 #2 SMP PREEMPT Tue Aug 26 16:51:17 MST 2014
MAC	00:0b:ab:8d:65:bf
Device	Valley Island
Username	root
Web mgt. console	Webif ²
Version	0.3+svnr4987

Wi-Fi & 3G Modules

6. Now, click "Status" → "WWAN Modem".

We should see the 3G information

(At this step, we can make sure the 3G module is OK)

The screenshot shows a web browser window displaying the Wind River Intelligent Device Platform interface. The browser address bar shows the URL `https://192.168.1.1/cgi-bin/webif/stal`. The page title is "WWAN Modem - Wind Ri...". The main content area is titled "WIND RIVER Intelligent Device Platform". The navigation menu includes "Info", "Graphs", "Status", "Log", "System", "Network", "VPN", and "Device Agent". The "Status" menu item is highlighted with a red box. Below the navigation menu, the "WWAN Modem" menu item is also highlighted with a red box. The main content area displays the "WWAN Modem Status" section, which is also highlighted with a red box. This section contains a table of "Modem Device Information" with the following data:

Modem Device Information	
Connection Device	/dev/ttyACM0
Supported Protocol	3g
Manufacturer	Telit
Vendor ID	1bc7
Product	HE910
Product ID	0021
Serial Number	357164041126593
Revision	12.00.004

Additional information visible in the top right corner of the interface includes: "Wind River Intelligent Device Platform XT 2.0", "Host: WR-IntelligentDevice", "Date: 2015-04-16", "Uptime: 2 min, 0 users", "Time: 16:55:53", and "Load: 0.33, 0.23, 0.10".