Technical Case Sharing -

Testing UTX-3115 IO Function on IDP OS

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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=102400000 count=5

```
root@WR-IntelligentDevice:~# dd if=/dev/zero of=/media/sdc2/usbtest bs=102400000 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:~#
```

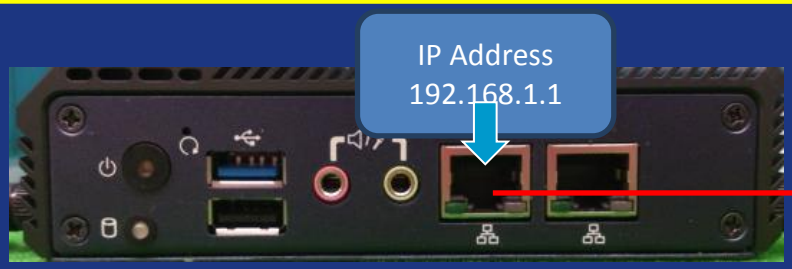
Ethernet

- 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
^\Quit
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

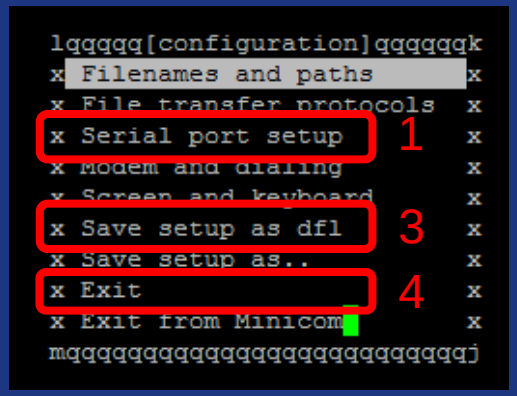
```
root@WR-IntelligentDevice:~# arecord -D hw:0,0 -f cd | aplay -D hw:0 -f cd
Recording WAVE 'stdin' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
Playing WAVE 'stdin' : Signed 16 bit Little Endian, Rate 44100 Hz, Stereo
```

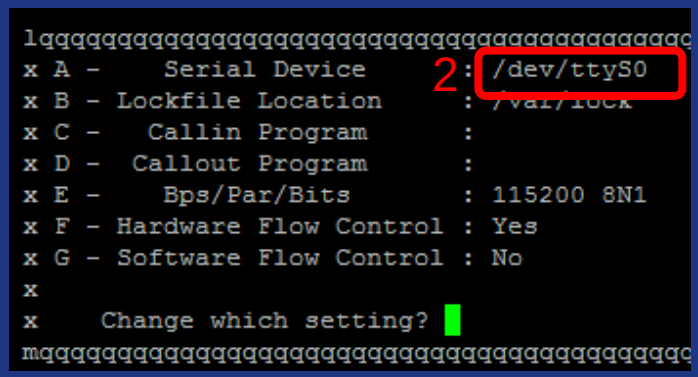
Comport

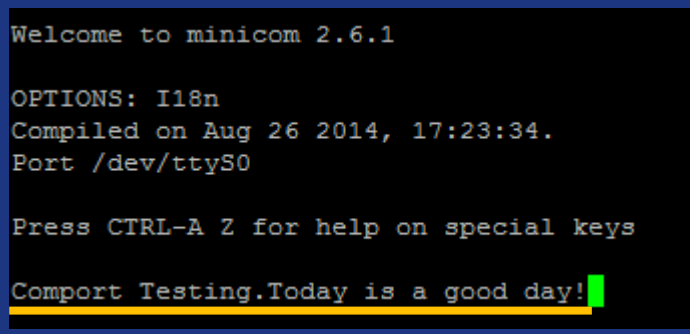
- Loopback test
  - dmesg | grep ttyS

```
root@WR-IntelligentDevice:~# dmesg | grep ttyS
0000:00:1e.3: ttyS0 at MMIO 0x9091c000 (irq = 18) is a 16550A
0000:00:1e.4: ttyS1 at MMIO 0x9091a000 (irq = 19) is a 16550A
root@WR-IntelligentDevice:~#
```

- Minicom
  - minicom –s







Wi-Fi & 3G Modules

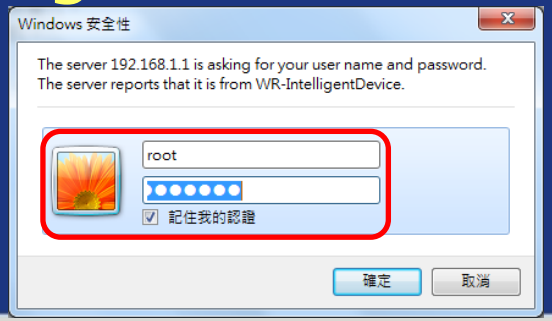
- Needed:
  - Wi-Fi module (Intel AC7260)
  - 3G module (Telit HE910)
  - Notebook (Wi-Fi capability)

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 bowser, 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)

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)