



SMP and Networking support on NuttX/LC823450



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What is demonstrated



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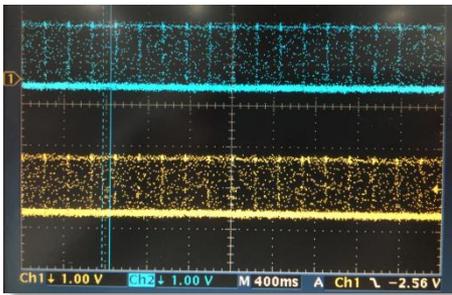
File Edit View Search Terminal Help
nsh: ps
PID GROUP CPU PRI POLICY TYPE NIX STATE EVENT SIGMASK STACK COMMAND
0 0 0 0 FIFD KThread N- Assigned 00000000 000000 CPU0 IDLE
1 0 1 0 FIFD KThread N- Assigned 00000000 002044 CPU1 IDLE
3 1 1 0 FIFD KThread -- Waiting Signal 00000000 002020 lpmark
4 1 1 50 FIFD Task -- Ready 00000000 002020 lpmark
5 1 1 100 FIFD Task -- Waiting Semaphore 00000000 002020 jst
7 3 1 100 FIFD Task -- Waiting Semaphore 00000000 002020 Telnet daemon
8 0 0 100 FIFD Task -- Running 00000000 002020 Telnet session
9 0 5 100 FIFD Task -- Waiting Semaphore 00000000 002020 nplayer
12 5 1 240 FIFD pthread -- Waiting Semaphore 00000000 001500 playthread #x201500
13 5 1 252 FIFD pthread -- Waiting Semaphore 00000000 001500 web776_Rx201500

nsh: ifconfig
eth0 Link encap:Ethernet Haddr: 00:14:da:d4:be:ff at UP
inet addr: 192.168.10.10 Bcast: 192.168.10.1 Mask: 255.255.255.0

ts Link encap:Local Loopback at UP
inet addr: 127.0.0.1 Bcast: 127.0.0.1 Mask: 255.0.0.0

Received: IPv4: TCP: UDP: ICMP:
0005 0000 0003 0001
Dropped: 0003 0037 0000 0000
In4: 0000 0000 0000 0000
Checksum: 0000 0000 0000 0000
TCP: ACK: 0000 0000 0000 0037
RST: 0000 0000
Type: 0000 0000 0000 0000
Sent: 0000 0000 0000 0000
Reset: 0000 0000 0000 0000
nsh:
nsh:
nsh:

```



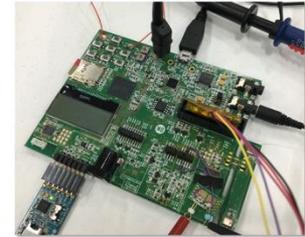
HTTP audio (PCM/44.1k/stereo) streaming is working on NuttX/LC823450 in SMP mode.

What was improved

Running SMP kernel on lc823450-xgevk



- Port existing drivers to the latest NuttX
 - UART, Timer, GPIO, DMA, I2C, SPI, LCD
 - eMMC (including boot), SD, USB, LED, Audio, ADC
- Implement SMP related code
 - lc823450_cpuidlestack.c, lc823450_cpuindex.c
 - lc823450_cpupause.c, lc823450_cpustart.c, lc823450_testset.c (Use H/W Mutex instead of ldx, stx)
- Improve performance
 - Introduce spin_lock_irqsave(), spin_unlock_irqstore()
 - Use these APIs inside the driver code.
 - Up to 20% performance improvement

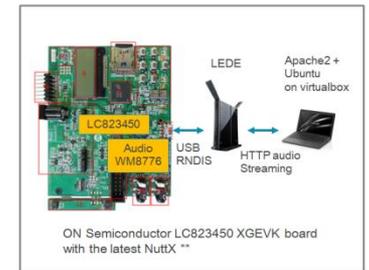


lc823450-xgevk board

HTTP audio streaming support



- Fix RNDIS driver for NuttX
 - Fix data corruption
 - Add USB high speed mode support
- Modify tcp_send.c to support receive window control.
 - Still experimental
- Modify nplayer to support HTTP connection.
 - Currently only WAV format is supported.
- Still testing with SMP kernel



**Code is available at bitbucket.org/nuttx/nuttx

Source code or detail technical information availability

The code is available at bitbucket.org/nuttx

Mar 14 11:00-