

ODROID-HC1 Disable console

To use the console UART as a generic serial port on ODROID-HC1/HC2/XU4/XU3/XUQ, you need to modify u-boot code.

You can use UART2 (ttySAC2) as a serial port by modifying the u-boot and kernel console settings to another hidden port like UART1(ttySAC1).

To do this task requires an Ethernet connection and ssh login.
See the link below for instructions.

[Headless setup](#)

Kernel console option

Kernel console options can be changed by modifying the boot.ini file.

Login using ssh

On your Linux PC, type "ssh odroid@xxx.xxx.xxx.xxx" It will then prompt for your password. Type in the default password: **odroid**

```
ckkim@ck-desktop:~$ ssh odroid@xxx.xxx.xxx.xxx
odroid@192.168.10.7s password:
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.9.44-54 armv7l)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

68 packages can be updated.
updates are security updates.

Last login: Tue Oct 17 06:37:54 2017 from 192.168.10.4
odroid@odroid:~$
```

Edit boot.ini file to disable Kernel message from UART2

```
odroid@odroid:~$ sudo nano /media/boot/boot.ini
```

Find the bootrootfs environment and change the console options as follows:

console=ttySAC1

```
#-----  
-----  
# Basic Ubuntu Setup. Don't touch unless you know what you are doing.  
#-----  
setenv bootrootfs "console=tty1 console=ttySAC1,115200n8  
root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait ro fsck.repair=yes  
net.ifnames=0"
```

Save & reboot

```
odroid@odroid:~$ sudo reboot
```

If you have done, You can see the only outputs u-boot messages. No kernel messages.

```
U-Boot 2017.05-00004-g88af53fb (Oct 17 2017 - 05:42:16 +0000) for ODR0ID-XU4  
  
CPU: Exynos5422 @ 800 MHz  
Model: Odroid XU4 based on EXYNOS5422  
Board: Odroid XU4 based on EXYNOS5422  
Type: xu4  
DRAM: 2 GiB  
MMC: EXYNOS DWMMC: , EXYNOS DWMMC: 1  
MMC Device (SD): 29.8 GiB  
mmc_init: -5, time 4  
*** Warning - bad CRC, using default environment  
  
In: serial  
Out: serial  
Err: serial  
Net: No ethernet found.  
Press quickly 'Enter' twice to stop autoboot:  
reading boot.ini  
9088 bytes read in 4 ms (2.2 MiB/s)  
cfgload addr = 0x50000000, Loading boot.ini from FAT  
cfgload: applying boot.ini...  
cfgload: setenv initrd_high "0xffffffff"  
cfgload: setenv fdt_high "0xffffffff"  
cfgload: setenv macaddr "00:1e:06:61:7a:39"  
cfgload: setenv vout "hdmi"  
cfgload: setenv cecenable "false" # false or true  
cfgload: setenv disable_vu7 "false" # false  
cfgload: setenv governor "performance"  
cfgload: setenv ddr_freq 825  
cfgload: setenv external_watchdog "false"  
cfgload: setenv external_watchdog_debounce "3"  
cfgload: setenv HPD "true"
```

```

cfgload: setenv bootrootfs "console=tty1 console=ttySAC1,115200n8
root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait ro fsck.repair=yes
net.ifna"
cfgload: fatload mmc :1 0x40008000 zImage
reading zImage
4793816 bytes read in 284 ms (16.1 MiB/s)
cfgload: fatload mmc :1 0x42000000 uInitrd
reading uInitrd
9748049 bytes read in 573 ms (16.2 MiB/s)
cfgload: if test "${board_name}" = "xu4"; then fatload mmc :1 0x44000000
exynos5422-odroidxu4.dtb; setenv fdtloaded "true"; fi
reading exynos5422-odroidxu4.dtb
61570 bytes read in 10 ms (5.9 MiB/s)
cfgload: if test "${board_name}" = "xu3"; then fatload mmc :1 0x44000000
exynos5422-odroidxu3.dtb; setenv fdtloaded "true"; fi
cfgload: if test "${board_name}" = "xu3l"; then fatload mmc :1 0x44000000
exynos5422-odroidxu3-lite.dtb; setenv fdtloaded "true"; fi
cfgload: if test "${fdtloaded}" != "true"; then fatload mmc :1 0x44000000
exynos5422-odroidxu4.dtb; fi
cfgload: fdt addr 0x44000000
cfgload: setenv hdmi_phy_control "HPD=${HPD} vout=${vout}"
cfgload: if test "${cecenable}" = "false"; then fdt rm /cec@101B0000; fi
cfgload: if test "${disable_vu7}" = "false"; then setenv hid_quirks
"usbhid.quirks=0x0eef:0x0005:0x0004"; fi
cfgload: if test "${external_watchdog}" = "true"; then setenv
external_watchdog "external_watchdog=${external_watchdog}
external_watchdog_debounce=${i
cfgload: setenv bootargs "${bootrootfs} ${videoconfig} ${hdmi_phy_control}
${hid_quirks} smsc95xx.macaddr=${macaddr} ${external_watchdog} governor=${{"
cfgload: dmc ${ddr_freq}
cfgload: bootz 0x40008000 0x42000000 0x44000000
Kernel image @ 0x40008000 [ 0x000000 - 0x4925d8 ]
## Loading init Ramdisk from Legacy Image at 42000000 ...
   Image Name:   uInitrd
   Image Type:   ARM Linux RAMDisk Image (uncompressed)
   Data Size:    9747985 Bytes = 9.3 MiB
   Load Address: 00000000
   Entry Point:  00000000
   Verifying Checksum ... OK
## Flattened Device Tree blob at 44000000
   Booting using the fdt blob at 0x44000000
   Using Device Tree in place at 44000000, end 44012081

Starting kernel ...

```

U-boot console disable

If you want to remove of u-boot messages, you must modify and compile the u-boot code. Please follow the instructions below to rebuild the u-boot for ODROID. Those instructions cover native

build of the u-boot.

Login using ssh

Type in the default password: odroid

```
ckkim@ck-desktop:~$ ssh odroid@xxx.xxx.xxx.xxx
```

Install dependencies

```
odroid@odroid:~$ sudo apt install build-essential libqt4-dev libncurses5-dev device-tree-compiler git
```

Checkout & modify code

```
odroid@odroid:~$ git clone https://github.com/hardkernel/u-boot.git -b odroidxu4-v2017.05
odroid@odroid:~$ cd u-boot
odroid@odroid:~/u-boot$ git branch -a
* odroidxu4-v2017.05
  remotes/origin/HEAD -> origin/odroid-v2010.12
  remotes/origin/master
  remotes/origin/odroid-next
  remotes/origin/odroid-v2010.12
  remotes/origin/odroid-v2012.07
  remotes/origin/odroid-v2015.10
  remotes/origin/odroidc-v2011.03
  remotes/origin/odroidc2-v2015.01
  remotes/origin/odroidxu3-v2012.07
  remotes/origin/odroidxu4-v2017.05
odroid@odroid:~/u-boot$
odroid@odroid:~/u-boot$ nano arch/arm/dts/exynos5422-odroidxu4.dts
```

To find the 'console' node and modify it as shown below. Bypass the console to the UART not used by ODROID-HC1.

The purpose of this is to use HW connected UART2 as a serial port.

```
"/serial@12C00000" UART0 Not used
```

```
"/serial@12C10000" UART1 Not used
```

```
"/serial@12C20000" UART2 The debug serial is connected from UART2.
```

```
"/serial@12C30000" UART3 Not used
```

If you do this, ssh is the only way to communicate with odroid-board.
The debug console has no output and no input.

```
aliases {
    serial0 = "/serial@12C00000";
    console = "/serial@12C10000";
};
```

Save & compile

Before you compile U-boot, you must configure for ODROID-XU3/4 with following command.

```
odroid@odroid:~/u-boot$ make odroid-xu4_defconfig
odroid@odroid:~/u-boot$ make
```

Then you can start to build u-boot image, u-boot-dtb.bin. This will create u-boot/u-boot-dtb.bin. You can also add -j option for fast compile.

Installation

If boot device is eMMC : "/dev/mmcblk0"

If boot device is u-SD : "/dev/mmcblk1"

```
odroid@odroid:~/u-boot$ cd sd_fuse/
odroid@odroid:~/u-boot/sd_fuse$ ./sd_fusing.sh /dev/mmcblk1
++ '[' -z /dev/mmcblk1 ']'
++ '[' -b /dev/mmcblk1 ']'
++ echo '/dev/mmcblk1 reader is identified.'
/dev/mmcblk1 reader is identified.
++ '[' -d /sys/block/mmcblk1boot0 ']'
++ '[' -n '' ']'
++ signed_bl1_position=1
++ bl2_position=31
++ uboot_position=63
++ tzsw_position=1503
++ device=/dev/mmcblk1
++ env_position=2015
++ '[' -f ./u-boot-dtb.bin ']'
++ '[' -f ./u-boot.bin ']'
++ '[' -f ../u-boot-dtb.bin ']'
++ uboot=../u-boot-dtb.bin
++ echo 'BL1 fusing'
BL1 fusing
++ sudo dd iflag=dsync oflag=dsync if=./bl1.bin.hardkernel of=/dev/mmcblk1
seek=1
30+1 records in
30+1 records out
15616 bytes (16 kB, 15 KiB) copied, 0.0524816 s, 298 kB/s
++ echo 'BL2 fusing'
```

```
BL2 fusing
++ sudo dd iflag=dsync oflag=dsync if=./bl2.bin.hardkernel.720k_uboot
of=/dev/mmcblk1 seek=31
28+1 records in
28+1 records out
14592 bytes (15 kB, 14 KiB) copied, 0.0257337 s, 567 kB/s
++ echo 'u-boot fusing'
u-boot fusing
++ sudo dd iflag=dsync oflag=dsync if=../u-boot-dtb.bin of=/dev/mmcblk1
seek=63
1210+1 records in
1210+1 records out
619598 bytes (620 kB, 605 KiB) copied, 1.44196 s, 430 kB/s
++ echo 'TrustZone S/W fusing'
TrustZone S/W fusing
++ sudo dd iflag=dsync oflag=dsync if=./tzsw.bin.hardkernel of=/dev/mmcblk1
seek=1503
512+ records in
512+ records out
262144 bytes (262 kB, 256 KiB) copied, 0.452685 s, 579 kB/s
++ echo 'u-boot env erase...'
u-boot env erase...
++ sudo dd iflag=dsync oflag=dsync if=/dev/zero of=/dev/mmcblk1 seek=2015
bs=512 count=32
32+ records in
32+ records out
16384 bytes (16 kB, 16 KiB) copied, 0.030801 s, 532 kB/s
++ echo 'U-boot image is fused successfully.'
U-boot image is fused successfully.
++ echo 'Eject /dev/mmcblk1 and insert it again.'
Eject /dev/mmcblk1 and insert it again.
odroid@odroid:~/u-boot/sd_fuse$ sudo
```

Reboot

```
odroid@odroid:~/u-boot/sd_fuse$ sudo reboot
```

If you have done, No messages to debug port. You can use ttySAC2 as a generic UART serial port.

However, Exynos5422 UART IO voltage is 1.8V. Be careful with the hardware connections.

Using the Rx/Tx pin as a general purpose IO pin

You don't need to disable the Rx/Tx function by editing/compiling device-tree file. Just export the GPIOs and they will work in GPIO mode.

```
UART2.RXD - GPA1.0 - 179(GPIO Export Number) - CON1.3
UART2.TXD - GPA1.1 - 180(GPIO Export Number) - CON1.2
```

Once you [export](#) it, you can confirm it with `cat /sys/kernel/debug/gpio` output.

From:

<http://wiki.odroid.com/> - **ODROID Wiki**

Permanent link:

http://wiki.odroid.com/odroid-xu4/troubleshooting/odroid-hc1_disable_console

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