Instructions to use
libvdpau-sunxi with VDR
on

Cubieboard 1-3
and other A10/A20

...

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Contents

1 Hardware

1.1 Technical

```
Name      :   Cubieboard 2
Size      :   10 cm x 6 cm
CPU       :   Allwinner A20 SoC (2 ARM-Cortex A7-Cores with 1 GHz)
GPU       :   Mali-400MP2 (OpenGL ES 2.0/1.1)
VPU       :   CedarX (max 2160p (Ultra HD))
RAM       :   512MB (Test) / 1GB (Produktion) DDR3
CONN      :   2x USB Host, 1x USB On-the-go, 1x CIR, 1x SATA
VID-OUT   :   HDMI @ 1080p
AUD-OUT   :   S/PDIF, Headphone, HDMI-Audio
AUD-IN    :   Mikrophone, Line-In
Storage   :   4 GB NAND-Flash, 1x MicroSD
Network   :   10/100-Ethernet
DB-Con.   :   96 Pin incl I²C, SPI, LVDS
```

2 Software

2.1 Installation Driver and Library's

2.1.1 xf86 Driver

```
xf86 Driver installation

1 cd /usr/local/src/
2 git clone https://github.com/ssvb/xf86-video-fbturbo.git
3 cd xf86-video-fbturbo
4 autoreconf -vi
5 ./configure --prefix=/usr
6 make -j3
7 make install
8 cp xorg.conf /etc/X11
```

2.1.2 FFmpeg (2.4.4)

Alternative libav should work.

It's important to compile FFmpeg with "–enable-shared" flag

```
FFmpeg installation ( 2.4.4 )

1 cd /usr/local/src/
2 wget http://ffmpeg.org/releases/ffmpeg-2.4.4.tar.bz2
```

```
3 tar xfvj ffmpeg-2.4.4.tar.bz2
4 cd ffmpeg-2.4.4
5 ./configure --enable-shared --prefix=/usr
6 make -j3
7 make install
```

2.1.3   Libvdpau-sunxi

libvdpau-sunxi

```
1 cd /usr/local/src/
2 git clone -b deint https://github.com/zillevdr/libvdpau-sunxi/
3 cd libvdpau-sunxi
4 make -j3
5 make install
```

2.1.4   Editing uEnv

edit the uEnv.*

uEnv

```
1 extraargs=rootfstype=ext4 \
2 sunxi_ve_mem_reserve=190 \
3 sunxi_g2d_mem_reserve=16 \
4 sunxi_fb_mem_reserve=32 \
5 hdmi.audio=EDID:0 \
6 disp.screen0_output_mode=1920x1080p50 \
7 panic=10 \
8 consoleblank=0
```

sunxi_ve_mem_reserve=190
is for the reservation of the memory used by the CedarX

hdmi.audio=EDID:0
for HDMI-Audio

disp.screen0_output_mode=1920x1080p50
1920x1080p50 is nessesary for use with SD- or HD-TV channels.

2.2 Sound

There are two way's to use the Sound-devices of the Allwinner A10/A20 SoC's

ALSA and Pulse-Audio

2.2.1 ALSA

To use analog audio on the HDMI-Port you have to edit the: /etc/asound.conf !

/etc/asound.conf

```
1  pcm.dmixer {
2    type dmix
3    ipc_key 1024
4    slave {
5      pcm "hw:0,0"
6      period_size 3000
7      buffer_size 24000
8      rate 48000
9      format S16_LE
10   }
11 }
12
13 pcm.sunxihdmi {
14   type plug
15   slave.pcm dmixer
16 }
```

2.2.2 Pulse-Audio

für HDMI:

HDMI Audio pulseaudio

```
1  echo "set-default-sink alsa_output.platform-sunxi-sndhdmi.0.analog-stereo" | pacmd
```

Für Klinke:

ANALOG Audio pulseaudio

```
1  echo "set-default-sink alsa_output.platform-sunxi-codec.analog-stereo" | pacmd
```

2.3   Kernel Modules

Add modules to /etc/modules.

edit /etc/modules

```
1  nano /etc/modules
```

add following:

```
1  # /etc/modules: kernel modules to load at boot time.
2  #
3  # This file contains the names of kernel modules that should be loaded
4  # at boot time, one per line. Lines beginning with "#" are ignored.
5
6  #For SATA Support
7  sw_ahci_platform
8
9  #Display and GPU
10 lcd
11 hdmi
12 ump
13 disp
14 mali
15 mali_drm
16 cedar_dev
17 bt_gpio
18 bcmdhd
```

2.4 The Video Disk Recorder

2.4.1 vdr-plugin-softhddevice

To use the OSD of the VDR you have to use the old bitmap surface of softhddevice.
On a normal PC with a NVIDIA-card this surfaces are not used anymore.

So you have to enable it again in the Makefile of the Plugin.

```
Enable Bitmap-Surface in SoftHD-device Makefile
1  CONFIG += -DUSE_BITMAP        # VDPAU, use bitmap surface for OSD
```

And search the line with: ### Make it standard and add -fsigned-char at the lines:

```
Add a fix in SoftHD-device Makefile
1  override CXXFLAGS += $(_CFLAGS) $(DEFINES) $(INCLUDES) \
2      -g -W -Wall -Wextra -Winit-self -Werror=overloaded-virtual -fsigned-char
3  override CFLAGS>  += $(_CFLAGS) $(DEFINES) $(INCLUDES) \
4      -g -W -Wall -Wextra -Winit-self -Wdeclaration-after-statement -fsigned-char
```

2.4.2 a basic VDR startscript

```
a basic VDR startscript
1  #!/bin/sh
2  export LC_MESSAGES=de_DE.UTF-8
3  export LC_LANG=de_DE.UTF-8
4  export VDPAU_DRIVER=sunxi;
5  export DISPLAY=:0.0;
6  export VDPAU_OSD=1;
7  export VDPAU_DEINT=1;
8
9  chmod 0777 /dev/disp;
10 chmod 0777 /dev/cedar_dev;
11 chmod 0777 /dev/g2d;
12
13 /usr/local/bin/vdr -d -l 2 -P streamdev-client -P"softhddevice -x -a sunxihdmi"
```

2.5 Optional

2.5.1 qvdpautest

qvdpautest installation

```
1 cd /usr/local/src/
2 git clone https://github.com/robertmassaioli/qvdpautest.git
3 cd qvdpautest/
4 ./build_and_run.bash
```

2.6   Notes

Notes

vdpau-sunxi is still in development.