

# Instructions to use libvdpau-sunxi with VDR

on



## Cubieboard 1-3 and other A10/A20

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# 1 Hardware

## 1.1 Technical




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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 I <sup>2</sup> C, SPI, LVDS

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# 2 Software

## 2.1 General

To use CedarX with VDR and Soffhd-device the standard 80MB Video-Memory is not enough!

The Bad → it is hardcoded in the Kernel since 3.4.7x.

There are two way's to fix it (on both you have to recompile the kernel):

- change the value in the kernel.
- disable CMA and use the kernelparameters.

## 2.2 Installation Driver and Library's

### 2.2.1 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
```

### 2.2.2 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
```

### 2.2.3 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
```

### 2.2.4 Editing uEnv

to use the Kernel-Parameter in uEnv the kernel should have build without CMA

#### CMA disable

```
1 CONFIG_CMA=y
2
3 change to:
4
5 +# CONFIG_CMA is not set
```

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 necessary for use with SD- or HD-TV channels.

## 2.3 Sound

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

ALSA and Pulse-Audio

### 2.3.1 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 }
```

### 2.3.2 Pulse-Audio

for HDMI-audio:

```
HDMI Audio pulseaudio
```

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

For analog-audio-jack:

```
ANALOG Audio pulseaudio
```

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

## 2.4 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
```

## 2.5 The Video Disk Recorder

### 2.5.1 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
```

### 2.5.2 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"
```



## 2.6 Optional

### 2.6.1 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
```

## 2.7 Notes

### Notes

vdpau-sunxi is still in development.