

HDMI

HDMI works with [Kernel 4.16](#) in some cases (1080p,1280×1024). Driver with fbdev was backported to 4.14 and ported to 4.19.in 5.0 hdmi works but fbdev does not.

Discussion in [Forum](#).

Resolution can be set in BPI-BOOT/bananapi/bpi-r2/linux/uEnv.txt:

```
bootopts=vmalloc=496M debug=7 initcall_debug=0 video=1280x1024-32
```

this resolution will be used for both virtual Console and [X-Server](#).

more about this setting: <https://nouveau.freedesktop.org/wiki/KernelModeSetting/>

to resize only font on Console this can be done:

```
setfont Uni3-TerminusBold32x16.psf.gz
```

available fonts are in /usr/share/consolefonts/

Thanks to ForumUser Alex R. aka „DeadMeat“

Normally hdmi will be turned off if no monitor is connected (or switched off) while bootup. You can change this with a video-option:

```
video=HDMI-A-1:1280x1024-32@60D
```

This keeps hdmi enabled and allow hotplug,but in my case there is a resolution-issue.

<http://forum.banana-pi.org/t/bpi-r2-hdmi-in-uboot-and-linux/4651/123>

DRM Debugging

add „drm.debug=0x04“ to bootopts in uEnv.txt (maybe 0x07 optionally with log_buf_len=1M)

LIMA

in 5.4 lima is merged to mainline-kernel and do need only some small changes for r2

[but it needs mesa compiled with some small changes too](#)

mesa.patch

```
git clone --single-branch --branch mesa-19.3.2  
https://gitlab.freedesktop.org/mesa/mesa.git mesa-source
```

```
cd mesa-source/
git checkout mesa-19.3.2
patch -p1 < mesa.patch
meson ./build --buildtype plain --libdir lib/arm-linux-gnueabihf --
localstatedir /var/lib --prefix /usr --sysconfdir /etc --wrap-mode
nodownload -Dplatforms=surfaceless,x11,drm -Dllvm=true -Dlmsensors=false -
Dlibunwind=false -Dgallium-nine=false -Dgallium-va=false -Dgallium-
vdpau=false -Dgallium-xa=false -Dgallium-xvmc=false -Dgallium-
opengl=disabled -Dosmesa=none -Dbuild-tests=false -Dglx=dri -Dshared-
glapi=true -Ddri3=true -Degl=true -Dgbm=true -Dgles1=false -Dgles2=true -
Dglvnd=false -Dselinux=false -Dvalgrind=false -Ddri-drivers= -Dgallium-
drivers=kmsro,lima
ninja -C build/
sudo ninja -C build/ install
```

important for debian is „-libdir lib/arm-linux-gnueabihf“ with only „lib“ x-server crashes while loading with segmentation fault.

maybe libdrm needs to be compiled too

```
git clone --single-branch --branch libdrm-2.4.100
https://gitlab.freedesktop.org/mesa/drm.git
cd drm
git checkout libdrm-2.4.100
meson build/ --prefix=/usr
#meson --reconfigure build/ --prefix /usr --libdir lib/arm-linux-gnueabihf
-Damdgpu=false -Dradeon=false -Dnouveau=false
ninja -C build/
sudo ninja -C build/ install
#or install to a folder
mkdir install
DESTDIR=$(pwd)/install ninja -C build/ install
```

usage

while lima initialization hdmi display needs to be connected (best at boottime). You can call initialization again by unloading+loading lima module (modprobe -r lima;modprobe lima)

Xorg needs a little adjustment too, else you get this error (/var/log/Xorg.0.log):

```
(EE) Cannot run in framebuffer mode. Please specify busIDs for all
framebuffer devices
```

just create /etc/X11/xorg.conf.d/40-serverflags.conf (there is no /etc/X11/xorg.conf by default) with the following content:

```
Section "ServerFlags"
    Option "AutoAddGPU" "off"
EndSection
```

disable glamore

in case dri crashes on x startup with Segmentation fault (because mesa is compiled for another kernel) you can disable it.

first check /var/log/Xorg.0.log for something like this:

```
[ 26.398] (II) Loading sub module "glamoregl"
[ 26.398] (II) LoadModule: "glamoregl"
[ 26.399] (II) Loading /usr/lib/xorg/modules/libglamoregl.so
[ 26.424] (II) Module glamoregl: vendor="X.Org Foundation"
[ 26.424] compiled for 1.20.4, module version = 1.0.1
[ 26.424] ABI class: X.Org ANSI C Emulation, version 0.4
[ 26.829] (EE)
[ 26.830] (EE) Backtrace:
[ 26.830] (EE)
[ 26.830] (EE) Segmentation fault at address 0xbc
[ 26.830] (EE)
Fatal server error:
[ 26.830] (EE) Caught signal 11 (Segmentation fault). Server aborting
[ 26.830] (EE)
[ 26.831] (EE)
```

then create a file named /etc/X11/xorg.conf.d/00-noglamore.conf with following content:

```
Section "Device"
    Identifier "nogpu"
    Driver "modesetting"
    Option "AccelMethod" "none"
EndSection

Section "Module"
    Disable "glamoregl"
EndSection
```

and then restart your display-manager (e.g. service lightdm restart)

source: <https://wiki.raptorcs.com/wiki/Troubleshooting/GPU>

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