

**Osprey<sup>®</sup>**

**Video**

Raptor Linux Driver  
Quick Start Guide

## **Quick Start Guide for Osprey Raptor Linux Drivers**

The Linux driver for Osprey Raptor capture cards is designed to work across multiple Linux distributions and kernel versions. To accomplish this, the driver is compiled on installation, taking into account the different dependencies of the various distributions. Osprey uses a GNU Automake process to generate a unique Makefile for each installation.

### **Tested Kernel**

This driver has been tested on Linux kernel major version 4.x which includes all patched kernel variations provided with each distribution up to but not including Linux Kernel major version 5 (i.e. nothing beyond 4.19.x at this time).

### **Tested Distributions**

Current tested distributions are:

Ubuntu 16.04 and 18.04

OpenSuse Leap 15

RedHat 7

### **API**

For ease of integration with existing applications, the Raptor driver complies with the Video for Linux API version 2 (V4L2 API) specification, with audio support from The Advanced Linux Sound Architecture (ALSA). Additionally, Osprey makes available the Osprey Low Level SDK.

### **Hardware Installation**

Osprey Raptor cards require a PCIe 2.0 slot with direct access to the CPU. Consult the PC or motherboard documentation to ensure the best location is selected. We recommend that the Raptor card be installed prior to installing the driver.

### **Installing the Driver**

Locate installer file “osprey09xx-x.x.x.xx.tar.gz”, where x indicates the driver version. i.e. “osprey09xx-7.0.9.12.tar.gz”.

Save the tar.gz to the local machine. The installer cannot be run from a flash drive.

In the same directory as the tar.gz file was saved, type:

```
tar xvzf osprey09xx-7.0.9.xx.tar.gz  
    (This extracts the tarball and creates a new folder)  
cd osprey09xx-7.0.9.xx.tar.gz  
    (Change to the extracted directory)  
./configure  
    (Generates a Makefile from Makefile.in)  
make  
    (Uses the Makefile to build the program)  
sudo make install  
    (Uses the Makefile to install the program)
```

### **To Uninstall the Driver**

```
sudo make uninstall
```

### **Verify Installation**

Once the driver and card are installed, the installation can be verified and tested using some commonly available software packages.

- **V4l2-utils**
- **FFmpeg**
- **VLC**
- **Osprey Config**

For Ubuntu:

```
# sudo apt-get install [package name]
```

For RedHat 7:

```
# sudo yum install [package name] (make sure you have enabled atrpms repository in system.)
```

For OpenSUSE:

```
# sudo zypper install [package name]
```

## Testing the Installation

To list the capture devices on the system

```
v4l2-ctl --list-devices
```

**example:**

```
talon@talon-desktop:~$ v4l2-ctl --list-devices
Osprey-944 1 (PCIe:0000:02:00.0):
 /dev/video0
 /dev/video1
 /dev/video2
 /dev/video3
```

To list the audio devices

```
aplay -l
```

**example:**

```
talon@talon-desktop:~$ aplay -l
**** List of PLAYBACK Hardware Devices ****
card 0: PCH [HDA Intel PCH], device 0: ALC1150 Analog [ALC1150 Analog]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 1: ALC1150 Digital [ALC1150 Digital]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 3: HDMI 0 [HDMI 0]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 7: HDMI 1 [HDMI 1]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 8: HDMI 2 [HDMI 2]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 9: HDMI 3 [HDMI 3]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 0: PCH [HDA Intel PCH], device 10: HDMI 4 [HDMI 4]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
talon@talon-desktop:~$ █
```

## To Test Functionality with FFmpeg

To capture just audio to a wav file with FFmpeg:

```
ffmpeg -f alsa -i hw:1,3 -t 30 out.wav
```

To capture video & audio and stream it out via UDP

```
ffmpeg -y -thread_queue_size 512 -f video4linux2 -i /dev/video0 -thread_queue_size 512 -f alsa -i hw:1,0 -profile:v high -pix_fmt yuvj420p -level:v 4.1 -vcodec libx264 -b:v 5000k -s 1280x720 -acodec aac -strict -2 -ac 2 -ab 32k -ar 44100 -f mpegts -flush_packets 0 udp://[destination IP address]:5000?pkt_size=1316
```

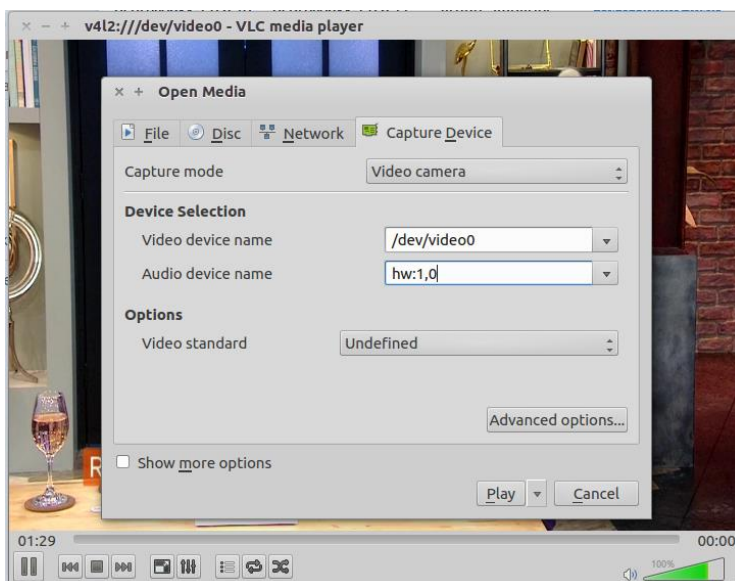
To capture video & audio and save to file:

```
ffmpeg -y -thread_queue_size 512 -f alsa -ac 2 -i hw:1,0 -f video4linux2 -i /dev/video0 -acodec libmp3lame -ab 128k -s 1280x720 -vcodec libx264 -preset ultrafast -qp 16 testoutput.mp4
```

## Testing with VLC

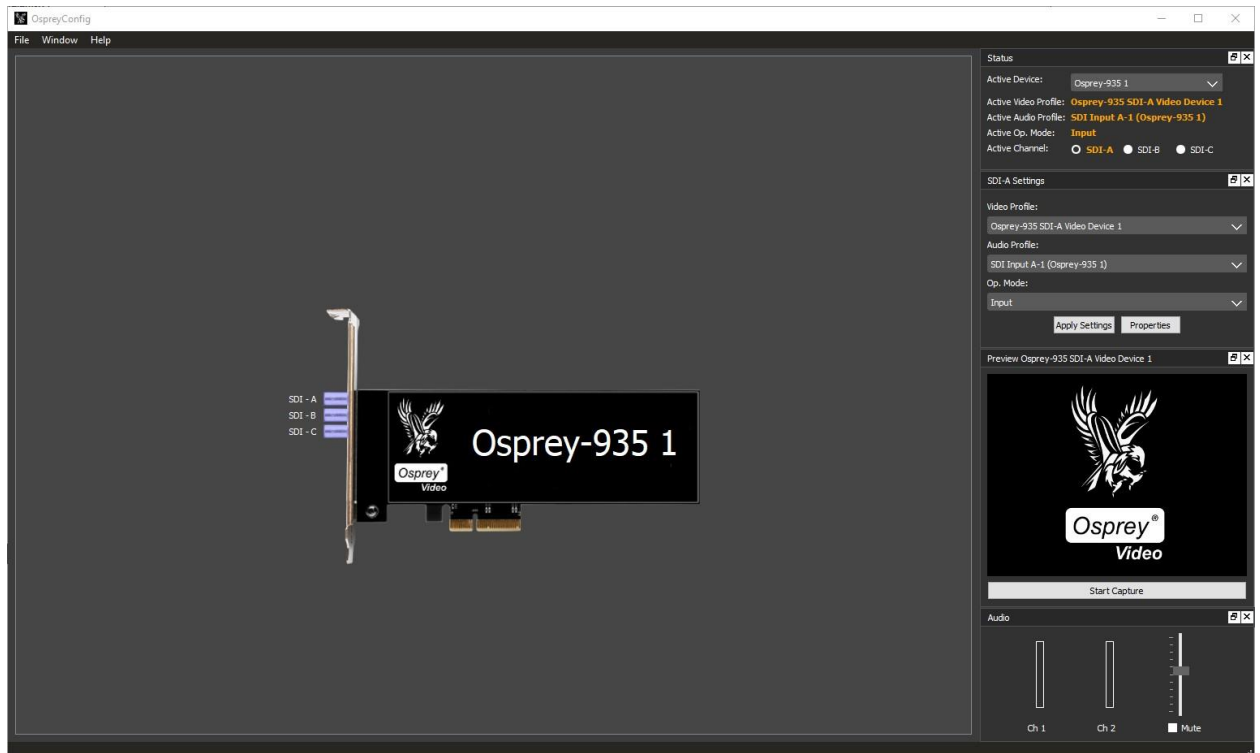
Selecting the video & audio source to view

Select Media, Open Capture Device... Then under the "Capture Device" tab select the video device name you want to view. IE /dev/video0 and the audio device example hw:1,0 (see how to list the audio devices in section 'List Audio Devices')



## Osprey Config

Osprey Config is a demo application that utilizes the Osprey 900 series SDK to allow users to preview captured video and audio of each channel, view the current connector configuration of a device (input, loop-out, etc.), and adjust device properties.



Osprey Config is available as part of the Osprey Low Level SDK. Please contact [support@ospreyvideo.com](mailto:support@ospreyvideo.com).



[www.ospreyvideo.com](http://www.ospreyvideo.com)

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