List

Chapter 1. Introduction

Parts of this document first appeared in Linux Magazine under a ninety day exclusivity.

Video4Linux is intended to provide a common programming interface for the many TV and capture cards now on the market, as well as parallel port and USB video cameras. Radio, teletext decoders and vertical blanking data interfaces are also provided.

```
if(video_device_register(&my_radio,
```

VFL_TYPE_VBI	/dev/vbi{n}	The VBI /v1.03Tj 3..8 Q q 4201.27.4iov/35.21T

```
        static int users = 0;

        static int =
```

u16 signal	The signal strength scaled between

We cop

In our case there is very little that the user can set. The volume is basically the limit. Note that we could pretend to have a mute feature by rewriting this to

```
case VIDIOCSAUDIO:
{
        struct video_audio v;
        if(copy_from_user(&v, arg,
```

setuctnTj 45.2198 0 Td(v-

and pass the Video4Linux layer back an error so that it knows we did not understand the request we got passed.

2.4. Module Wrapper

we gad wi the

Chapter 3. Video

```
static int irq = 11;

int __init mycamera_init(struct video_init *v)
{
        if(check_region(io, MY_IO_SIZE))
        {
                printk(KERN_ERR
                      "mycamera: port 0x%03X is in use.\n", io);
                return -EBUSY;
        }

        if(video_device_register(&my_camera,
            VFL_TYPE_GRABBER)==-1)
                return -EINVAL;
        request_region(io, MY_IO_SIZE, "mycamera");
        return 0;
}
```

This is little changed from the needs of the radio card. We specify VFL_TYPE_GRABBER this time as we want to be allocated a /dev//vdeommer.Tj /R16 0.16585Tf -340

```
        MOD_INC_USE_COUNT;
        return 0;
}


static int camera_close(struct video_device *dev)
{
        users-;
        free_irq(irq, dev);
        MOD_DEC_USE_COUNT;
}
```

The open and close routines are also quite similar. The only real change is that we now request an interrupt for the camera device interrupt line. If we cannot get

```
        capture_ready=1;
        wake_up_interruptible(&capture_wait);
}
```

The interrupt handler is nice and simple for this card as we are assuming the card is buffering the frame

3.6. Video Ioctl Handling

As with the radio drivr 3hermajo r

The VIDIOCGCHAN ioctl allows a user to ask about video channels (that is inputs to the video card). Our example card has asinge carmer

```
                        return -EFAULT;
                return 0;
        }
```

The brightness, hue, color, and contrast provide the picture controls that are akin to a con

will report RGB24 only

```
case VIDIOCGFBUF:
{
```

```
if(v==0)
```

The Video4Linux layer supports additional features, including a high performance mmap() based capture mode and capturing part of the image. These features are out of the scope of the book. You should however have enough example code to implement most simple video4linux devices for radio and TV cards.

The registration code assigns minor numbers based on the type requested. -ENFILE is returned in all the device slots for this

Description

This unregisters the passed device and deassigns the minor number. Future open calls will be met with errors.