FLI CCD Device Driver I/O Control Documentation

— Version 0.3 —

I/O Control Requests supported by FLI CCD Device Driver

Finger Lakes Instrumentation

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1 Introduction

The FLI CCD device driver provides a way to control certain operational characteristics through the `ioctl(2)` system call. The valid `ioctl` request codes are defined in `fli_ioctl.h`. The device driver `ioctl` implementation assumes pass by reference, meaning its third argument should be a pointer from/to which values are passed. For example:

```
#include <stdio.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <fcntl.h>
#include <sys/ioctl.h>
#include "fli_ioctl.h"

#define CCD_CHAR_FILE "/dev/ccd0"

int main(int argc, char *argv[])
{
  int fd, dto = 20;

  if ((fd = open(CCD_CHAR_FILE)) == -1)
  {
    perror("open");
    exit(1);
  }

  if (ioctl(fd, FLI_SET_DTO, &dto))
  {
    perror("ioctl");
    exit(1);
  }

  close(fd);
  exit(0);
}
```

The `ioctl` request codes are described in the following section.

2

I/O Control Request Codes

FLI_RESET_PORT_VALUES
Reset port parameters to their default values.

FLI_LOCK_PORT
Lock the FLI CCD port.

FLI_UNLOCK_PORT
Unlock the FLI CCD port.

FLI_SET_DMABUFFSIZE
Set the DMA buffer size.

FLI_SET_DMATHRESH
Set the DMA threshold.

FLI_SET_DTO
Set the direction timeout.

FLI_SET_RTO
Set the read timeout.

FLI_SET_WTO
Set the write timeout.

FLI_SET_LTL
Set the lock time limit.

FLI_SET_DIR
Set direction of the port.

FLI_SET_NUMREAD
Set the number of bytes read.

FLI_SET_NUMWRITE
Set the number of bytes written.

FLI_SET_NUMDTO
Set the number of direction timeouts.

FLI_SET_NUMRTO
Set the number of read timeouts.

FLI_SET_NUMWTO
Set the number of write timeouts.

FLI_GET_DMABUFFSIZE
Get the DMA buffer size.

FLI_GET_DMATHRESH
Get the DMA threshold.

FLI_GET_DTO
Get the direction timeouts.

FLI_GET_RTO
Get the read timeout.

FLI_GET_WTO
Get the write timeout.

FLI_GET_LTL
Get the lock time limit.

FLI_GET_DIR
Get the port direction.

FLI_GET_NUMREAD
Get the number of bytes read.

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Get the number of direction timeouts.

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Get the number of read timeouts.

FLI_GET_NUMWTO
Get the number of write timeouts.