rfid

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Generated by Doxygen 1.5.9

Fri Dec 4 16:38:06 2009

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Chapter 1

Module Index

1.1 Modules

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Chapter 2

Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

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Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

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Chapter 4

Module Documentation

4.1 Application Interface

Data Structures

- struct nlrf_cardinfo

  Card information.

Files

- file nlrf.h

Functions

- int nlrf_open (const char ∗dev_name)

  Open RFID device.

- int nlrf_close (int fd)

  Close RFID device.

- int nlrf_querycardinfo (int fd, struct nlrf_cardinfo ∗info)

  get card information

- int nlrf_send_querycardinfo (int fd)

  asynchronous query card information

- int nlrf_fetch_querycardinfo (int fd, struct nlrf_cardinfo ∗info)

  asyhchronous fetch card information

- int nlrf_chkkey (int fd, const unsigned char ∗key, int length)

  set access password

- int nlrf_setkey (int fd, int sector, const unsigned char ∗oldkey, const unsigned char ∗newkey, int length) *change access password*

- int nlrf_readblock (int fd, int sector, int block, unsigned char ∗data, int length)

  read data

- int nlrf_writeblock (int fd, int sector, int block, const unsigned char ∗data, int length)

  write data

4.1.1 Function Documentation

4.1.1.1 int nlrf_chkkey (int *fd*, const unsigned char ∗ *key*, int *length*)

set access password

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

← ***key*** access password

← ***length*** password length

Return values:

0 success

-NLRF_ERR_INVALID invalid parameter

-NLRF_ERR_SEND send command failed

-NLRF_ERR_RECV receive response failed

Attention:

call this function before read/write card

4.1.1.2 int nlrf_close (int *fd*)

Close RFID device.

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

Return values:

0 success

-NLRF_ERR_RESTORETTY restore tty configuration failed

4.1.1.3 int nlrf_fetch_querycardinfo (int *fd*, struct nlrf_cardinfo ∗ *info*)

asyhchronous fetch card information

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

→ ***info*** card information

Return values:

0 success

-NLRF_ERR_IGNORE_ME "no card" response received (ignore it)

-NLRF_ERR_INVALID receive response failed

4.1.1.4 int nlrf_open (const char ∗ *dev_name*)

Open RFID device.

Parameters:

← ***dev_name*** Device file path

Return values:

fd success

-NLRF_ERR_NODEV open device failed/no device detected

-NLRF_ERR_BACKUPTTY backup tty configuration failed

-NLRF_ERR_SETTTY set tty configuration failed

4.1.1.5 int nlrf_querycardinfo (int *fd*, struct nlrf_cardinfo ∗ *info*)

get card information

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

→ ***info*** card information

Return values:

0 success

-NLRF_ERR_SEND send command failed

-NLRF_ERR_RECV receive response failed

4.1.1.6 int nlrf_readblock (int *fd*, int *sector*, int *block*, unsigned char ∗ *data*, int *length*)

read data

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

← ***sector*** sector id

← ***block*** block id (when read whole sector: id = total blocks in one sector)

→ ***data*** data buffer

← ***length*** data length

Return values:

0 success

-NLRF_ERR_INVALID invalid parameter

-NLRF_ERR_SEND send command failed

-NLRF_ERR_RECV receive response failed

Attention:

will block on unset/bad access password, please remove card from card reader and wait 3+ seconds

4.1.1.7 int nlrf_send_querycardinfo (int *fd*)

asynchronous query card information

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

Return values:

0 success

-NLRF_ERR_SEND send command failed

4.1.1.8 int nlrf_setkey (int *fd*, int *sector*, const unsigned char ∗ *oldkey*, const unsigned char ∗ *newkey*, int *length*)

change access password

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

← ***sector*** sector id

← ***oldkey*** old password

← ***newkey*** new password

← ***length*** password length

Return values:

0 command send success

-NLRF_ERR_INVALID invalid parameter

-NLRF_ERR_SEND send command failed

-NLRF_ERR_RECV receive response failed

Attention:

each sector has different access password

4.1.1.9 int nlrf_writeblock (int *fd*, int *sector*, int *block*, const unsigned char ∗ *data*, int *length*)

write data

Parameters:

← ***fd*** file descriptor returned by function nlrf_open

← ***sector*** sector id

← ***block*** block id (can't write whole sector)

← ***data*** data buffer

← ***length*** data length

Return values:

0 success

-NLRF_ERR_INVALID invalid parameter

-NLRF_ERR_SEND send command failed

-NLRF_ERR_RECV receive response failed

Attention:

will block on unset/bad access password, please remove card from card reader and wait 3+ seconds

4.2 Example files

Files

- file async.c

  example for asynchronous query card information

- file chkey.c

  example for changing access password

- file read.c

  example for reading data

- file write.c

  example for writing data

Chapter 5

Data Structure Documentation

5.1 nlrf_cardinfo Struct Reference

Card information.

```
#include <nlrf.h>
```

Data Fields

- int nsector

  Total sector number.

- int nblock

  block number in one sector

- int blocksize

  block storage size

- char cardnum [NLRF_CARDNUM_LENGTH]

  card id

5.1.1 Detailed Description

Card information.

Definition at line 42 of file nlrf.h.

The documentation for this struct was generated from the following file:

- nlrf.h

Chapter 6

File Documentation

6.1 async.c File Reference

example for asynchronous query card information

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>
#include <unistd.h>
#include <assert.h>
#include "nlrf.h"
```

Functions

- int **main** (int argc, char **argv)

6.1.1 Detailed Description

example for asynchronous query card information

Version:

1.0.0

Author:

Lin Yuning

Date:

2009-12-4

Definition in file async.c.

6.2 chkey.c File Reference

example for changing access password

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>
#include <unistd.h>
#include "nlrf.h"
```

Functions

- int **main** (int argc, char $**$argv)

6.2.1 Detailed Description

example for changing access password

Version:

1.0.0

Author:

Lin Yuning

Date:

2009-07-21

Definition in file chkey.c.

6.3 nlrf.h File Reference

Data Structures

- struct nlrf_cardinfo

  Card information.

Defines

- #define **NLRF_ERR_NODEV** 1
- #define **NLRF_ERR_SETTTY** 2
- #define **NLRF_ERR_BACKUPTTY** 3
- #define **NLRF_ERR_RESTORETTY** 4
- #define **NLRF_ERR_SEND** 5
- #define **NLRF_ERR_RECV** 6
- #define **NLRF_ERR_INVALID** 7
- #define **NLRF_ERR_IGNORE_ME** 8
- #define **NLRF_CARDNUM_LENGTH** 4
- #define **NLRF_KEY_LENGTH** 12
- #define **NLRF_BLOCK_NR** 3
- #define **NLRF_SECTOR_NR** 16
- #define **NLRF_BLOCK_SIZE** 16
- #define **NLRF_SECTOR_SIZE** (NLRF_BLOCK_SIZE ∗ NLRF_BLOCK_NR)

Functions

- int nlrf_open (const char ∗dev_name)

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  get card information

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- int nlrf_fetch_querycardinfo (int fd, struct nlrf_cardinfo ∗info)

  asyhchronous fetch card information

- int nlrf_chkkey (int fd, const unsigned char ∗key, int length)

  set access password

- int nlrf_setkey (int fd, int sector, const unsigned char ∗oldkey, const unsigned char ∗newkey, int length)

  change access password

- int nlrf_readblock (int fd, int sector, int block, unsigned char ∗data, int length)

  read data

- int nlrf_writeblock (int fd, int sector, int block, const unsigned char ∗data, int length)

  write data

6.3.1 Detailed Description

Version:

1.0.0

Author:

Lin Yuning

Date:

2009-07-21

Definition in file nlrf.h.

6.4 read.c File Reference

example for reading data

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>
#include <unistd.h>
#include "nlrf.h"
```

Functions

- int **main** (int argc, char **argv)

6.4.1 Detailed Description

example for reading data

Version:

1.0.0

Author:

Lin Yuning

Date:

2009-07-21

Definition in file read.c.

6.5 write.c File Reference

example for writing data

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <fcntl.h>
#include <unistd.h>
#include "nlrf.h"
```

Functions

- int **main** (int argc, char **argv)

6.5.1 Detailed Description

example for writing data

Version:

1.0.0

Author:

Lin Yuning

Date:

2009-07-21

Definition in file write.c.