USB E7umf Library

Function manual

Contents

1. uhf_connect

int uhf_connect(int port, long baud)

Description

Connect reader.

Parameters

port：

100: USB interface
0: Serial port(COM1)
1: Serial port(COM2)
2: Serial port(COM3)
...

baud: Baud rate(9600-115200)

Return Value

>0 is device handle, otherwise connect failed

Example

```
int icdev;
icdev = uhf_connect(100, 115200);// USB port
```

2. uhf_disconnect

int uhf_disconnect(int icdev)

Description

Disconnect reader.

Parameters

icdev：Handle of reader.

Return Value

=0 correct
other error

Example

```
int st;
```

st = uhf_disconnect(icdev);

3. uhf_read

int uhf_read (int icdev, unsigned char infoType, unsigned char address, unsigned int rlen, unsigned char* pData)

Description

Read data from UHF tag, read data according to the infoType, address, rlen and other parameters.

Parameters

icdev：Handle of reader.

infoType: 1: EPC
2: TID
3: USER
4: reserved

address: start address

rlen: length of the data to read(will get rlen*4 bytes data)

pData: Data read

Return Value

<>0 error, the absolute value is error code

= 0 read data correctly

Example

unsigned char[50] DataBuffer;

int st;

st = uhf_read(icdev, 1, 0, 8, DataBuffer);

/* Read EPC 8 words data to DataBuffer start from address 0(will get 32 bytes data)*/

4. uhf_write

int uhf_write (int icdev, unsigned char infoType, unsigned char address, unsigned int wlen, unsigned char* pData)

Description

Write UHF tag

Parameters

icdev：Handle of reader.

infoType: 1: EPC
2: TID
3: USER
4: reserved

address: start address

wlen: length of the data to write(will write wlen*4 bytes data)

pData: Data for write

Return Value

<>0 error, the absolute value is error code

= 0 write data correctly

Example

```
unsigned char[50] DataBuffer;

int st;

int i;


for(i=0;i<50;i++)

   DataBuffer[i] = 0x35;

st = uhf_write(icdev, 1, 2, 6, DataBuffer);

/* Write 6 words data to EPC start from address 2(will write 24 bytes data)*/
```

5. uhf_action

int uhf_action (int icdev, unsigned char action, unsigned char time)

Description

Control buzzer and led

Parameters

icdev：Handle of reader.

action:　1: Beep

2: Red led on

4: Green led on

8: Yellow led on

time:　Unit: 10ms

Return Value

<>0　error, the absolute value is error code

= 0　Correct execution

Example

```
int st;


st = uhf_action(icdev, (1 | 4), 50);
/* beep and green led on 500ms*/
```

6. uhf_setAccessPassword

int uhf_setAccessPassword (int icdev, unsigned char* AccessPassword)

Description

Set Access Password

Parameters

icdev：Handle of reader.

AccessPassword:　Access password of tag

Return Value

<>0 error, the absolute value is error code

= 0 Correct execution

Example

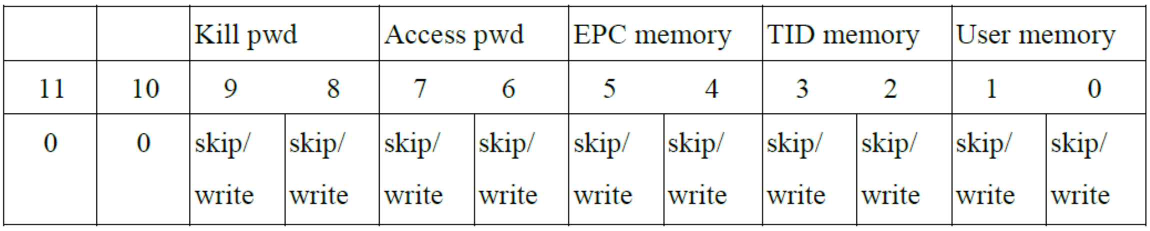
```
int st;
unsigned char password[10]={0x31,0x32, 0x33,0x34, 0x35,0x36,
0x37,0x38};
st = uhf_setAccessPassword(icdev, password);
```

7. uhf_lockMemory

Lock function is used to:

- Lock individual passwords (Kill pwd & Access pwd) – preventing or allowing subsequent reads and writes of that password
- Lock individual memory banks(EPC, TID, USER) – preventing or allowing subsequent writes to that memory bank
- Permalock – make the lock status permanently unchangeable for a password or memory bank

mask field bits

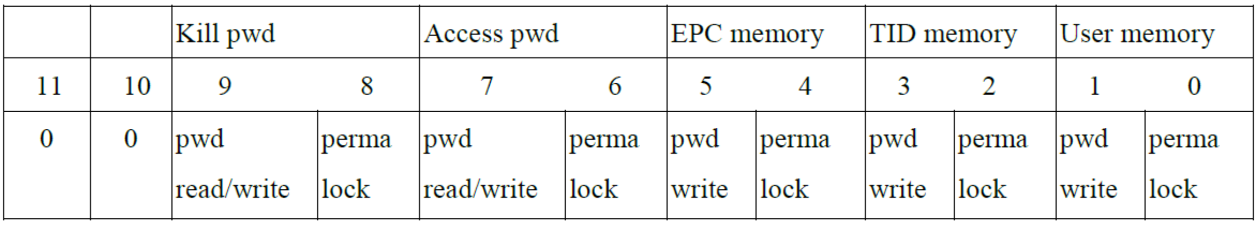


		Kill pwd		Access pwd		EPC memory		TID memory		User memory	
11	10	9	8	7	6	5	4	3	2	1	0
0	0	skip/write	skip/write	skip/write	skip/write	skip/write	skip/write	skip/write	skip/write	skip/write	skip/write

bit = 0: Ignore the associated Action field and retain the current lock setting.

bit = 1: Implement the associated Action field and overwrite the current lock setting.

action field bits

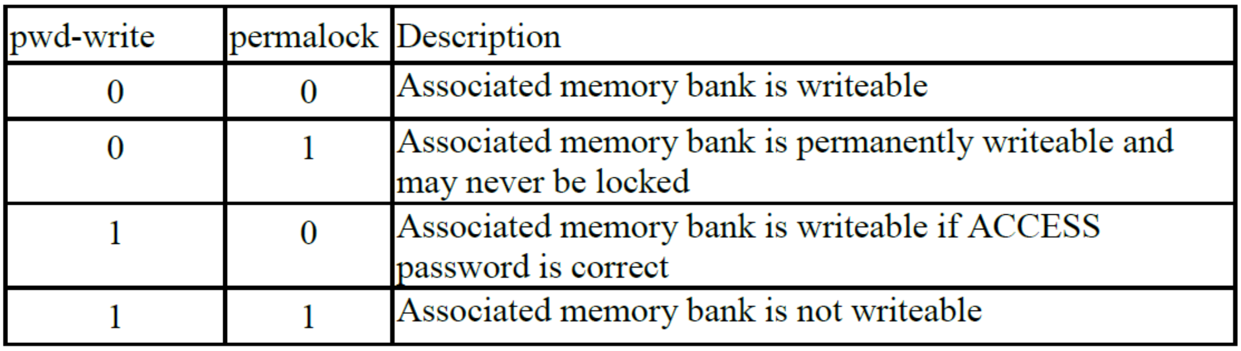


		Kill pwd		Access pwd		EPC memory		TID memory		User memory	
11	10	9	8	7	6	5	4	3	2	1	0
0	0	pwd read/write	perma lock	pwd read/write	perma lock	pwd write	perma lock	pwd write	perma lock	pwd write	perma lock

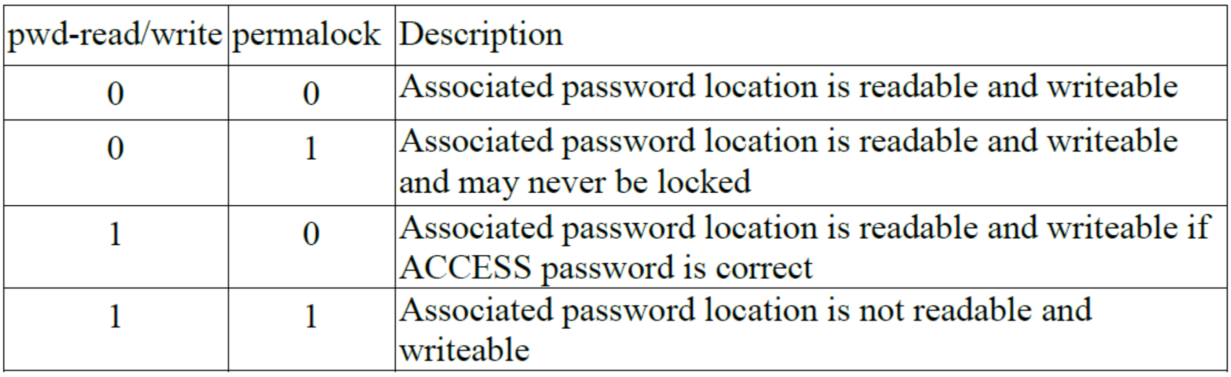
bit = 0: Deassert lock for the associated memory location.

bit = 1: Assert lock or permalock for the associated memory location.

Action-field functionality



pwd-write	permalock	Description
0	0	Associated memory bank is writeable
0	1	Associated memory bank is permanently writeable and may never be locked
1	0	Associated memory bank is writeable if ACCESS password is correct
1	1	Associated memory bank is not writeable



pwd-read/write	permalock	Description
0	0	Associated password location is readable and writeable
0	1	Associated password location is readable and writeable and may never be locked
1	0	Associated password location is readable and writeable if ACCESS password is correct
1	1	Associated password location is not readable and writeable

In memory lock operation, need ACCESS pwd to protect writable or readable/writable, we need uhf_setAccessPassword function to set ACCESS operation, please refer to uhf_setAccessPassword function.

int uhf_lockMemory (int icdev, unsigned char* lockSetting)

Description

Lock Memory

Parameters

icdev：Handle of reader.

lockSetting: Lock setting, 6 bytes ASCII character

Return Value

<>0 error, the absolute value is error code

= 0 Correct execution

Example

```
int st;
unsigned char lockSetting[10]={0x30,0x30, 0x32,0x30, 0x30,0x32}; //002, 002, lock user bank

st = uhf_lockMemory(icdev, lockSetting);
```

8. uhf_inventory

int uhf_invertory (int icdev, unsigned int *tagCount, unsigned int *dataLen, unsigned char *pData)

Description

Multiple EPC reads.

Parameters

icdev：Handle of reader.

tagCount: EPC count read

dataLen: length of the pData

pData: Data read (data1_length(1 byte), EPC1_readcount(1 byte), EPC1(data1_length-1 bytes), data2_length(1 byte), EPC2_readcount(1 byte), EPC2(data2_length-1 bytes)...)

Return Value

<>0 error, the absolute value is error code

= 0 read data correctly

Example

```
unsigned char[2] tagCount;
unsigned char[2] dataLen;
unsigned char[50] DataBuffer;
int st;

st = uhf_read(icdev, tagCount, dataLen, DataBuffer);
```