



## **MSR600U Linux SDK**

Dongguan Yixin Technology Co., Ltd. <http://www.kprinter.cn>

# **MSR600 Magnetic Card Reader SDK Specification (for Linux)**

V1.00



## MSR600U Linux SDK

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# **1.**

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## 2.Product

### 1. 1. Product description

#### 1. 1. 1 brief

MS600U is a usb interface magnetic card reader, The special decoding IC with excellent performance is adopted, which has the characteristics of low power consumption, strong anti-interference ability, high decoding success rate and strong decoding ability for weak magnetic card. The card reader complies with ISO and aamva standards, and can swipe the card in two directions. The card reader does not need external power adapter to take power from the computer host.

#### 1. 2. classification

The products are divided into two categories:

##### 1. 1. 2 Without iButton card reader

As shown in figure 1



figure 1 with out iButton card reader



### 1. 1. 3 With iButton card reader

As shown in figure 2



figure 2 with iButton card reader

## 1. 3. Data upload mode

### 1. 3. 1 HID Keyboard

Analog keyboard. In this mode, it is equivalent to an external keyboard device. When swiping card directly or the status of iButton changes, the data can be displayed directly in the text editor. Reference resources [iButton status](#).

### 1. 3. 2 HID Custom

In this mode, the card reading data needs to be processed and displayed by computer software, that is, calling "[MSR600 DecodeAutoTransData](#)" repeatedly in the thread for data analysis and processing, and the detailed development process refers to the [development process](#) part.

#### Remarks:

1、The card reader's data upload mode can be set by calling [MRS600 MagMode](#),



and the processing mode can refer to the [data upload mode](#).

2、The iButton data upload mode can be set by calling MSR600\_iBtnMode, and the processing mode can refer to the [data upload mode](#).

3、If card reader with iButton, all call [MSR600\\_iBtn\\*](#) function will failed.

## 1. 4. iButton Status

### 1. 4. 1 closed state

As shown in figure 3



figure 3 iButton close state

### 1. 4. 2 Removed state

As shown in figure 4



figure 4 iButton removed state



### 1. 4. 3 Data upload trigger

When the status of iButton changes, data upload will be triggered.

#### 1. 4. 3. 1 Close state ---> removed status

Upload iButton Status: 0x062, and upload withDraw information of iButton, if you not call "[MSR600 iBtnWithDraw](#)", the default withDraw data='remove'

#### 1. 4. 3. 2 removed status ---> Close state

Upload iButton Status: 0x062, upload Data format= prefix string + iButton's card number + suffix string will be uploaded, if you not call "[MSR600 iBtnPrefixSuffix](#)", the default prefix and suffix are is null string.

**Remark:**

The iButton data upload mode can be set by calling [MSR600 iBtnMode](#). The processing mode can refer to the [data upload mode](#).

## 3.Directory structure

Directory structure as shown in figure 5:

msr600_SDK > linux > demo			
名称	修改日期	类型	大小
x86_32	2019/10/26 16:39	文件夹	
x86_64	2019/10/26 16:41	文件夹	

figure 5 Directory structure

X86\_32: Linux32 demo program

X86\_64: Linux64 demo program





## 2. 1. demo directory

Under Linux, the source code of calling demo program and demo program of msr600 dynamic library is as shown in figure 6 below.:

msr600_SDK > linux > demo				
名称	修改日期	类型	大小	
hidapi.h	2019/10/16 17:02	C/C++ Header	16 KB	
libmsr600.h	2019/10/16 17:02	C/C++ Header	12 KB	
readme	2019/10/16 17:02	文件	1 KB	
testauto	2019/10/16 17:02	文件	8 KB	
testauto.cpp	2019/10/16 17:02	C++ Source	2 KB	
testibtn	2019/10/16 17:02	文件	12 KB	
testibtn.cpp	2019/10/16 17:02	C++ Source	4 KB	
testmsr	2019/10/16 19:49	文件	12 KB	
testmsr.cpp	2019/10/16 17:02	C++ Source	3 KB	

figure 6 demo directory

### 2. 1. 1 testmsr

`testmsr.cpp` Corresponding source code of demo program of magnetic card reader

### 2. 1. 2 testibtn

`testibtn.cpp` Source code of demo program, which show use of iButton.

### 2. 1. 3 testauto

`testauto.cpp` Source code of demo program of magnetic card reader in HID Custom mode.

Explain:

Hid Custom mode: In this mode, when the user swipes the card, moves the



ibtn away, or recovers the ibtn and the MSR600 device will upload the track data of the magnetic card, the 'withDraw data' by the iButton, the card number by the iButton actively. Testauto.cpp demonstrates how to process the data in the HID custom mode.

You can refer to the [data upload mode](#), [development process](#) and other instructions for development.

## 2.2. Library directory

The required library files for secondary development (the dependency directory must be installed before using), as shown in Figure 8

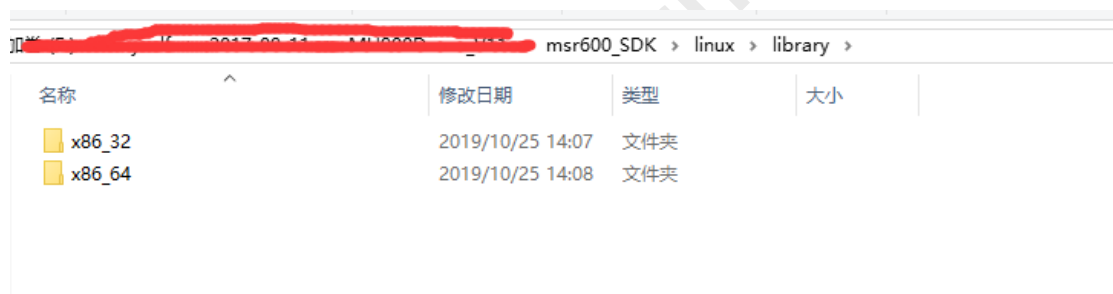


figure 7 Librarydirectory

According to the number of Linux system bits, please select different libraries for secondary development

# 4. Development environment installation

## 3.1. Dependency package installation

Prerequisite:

In the 'root' environment, run the relevant commands



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1. Ensure that GCC is installed in Linux. Refer to [GCC installation](#) for details.
2. Install libudev, in ubuntu use command: `sudo apt-get install libudev-dev`  
centOS: `yum provides */libudev.so`

### 3. 2. Copy library file

In window mode, login in as 'root', copy `libmsr600.so` into `/usr/lib` directory, As shown in figure 8:

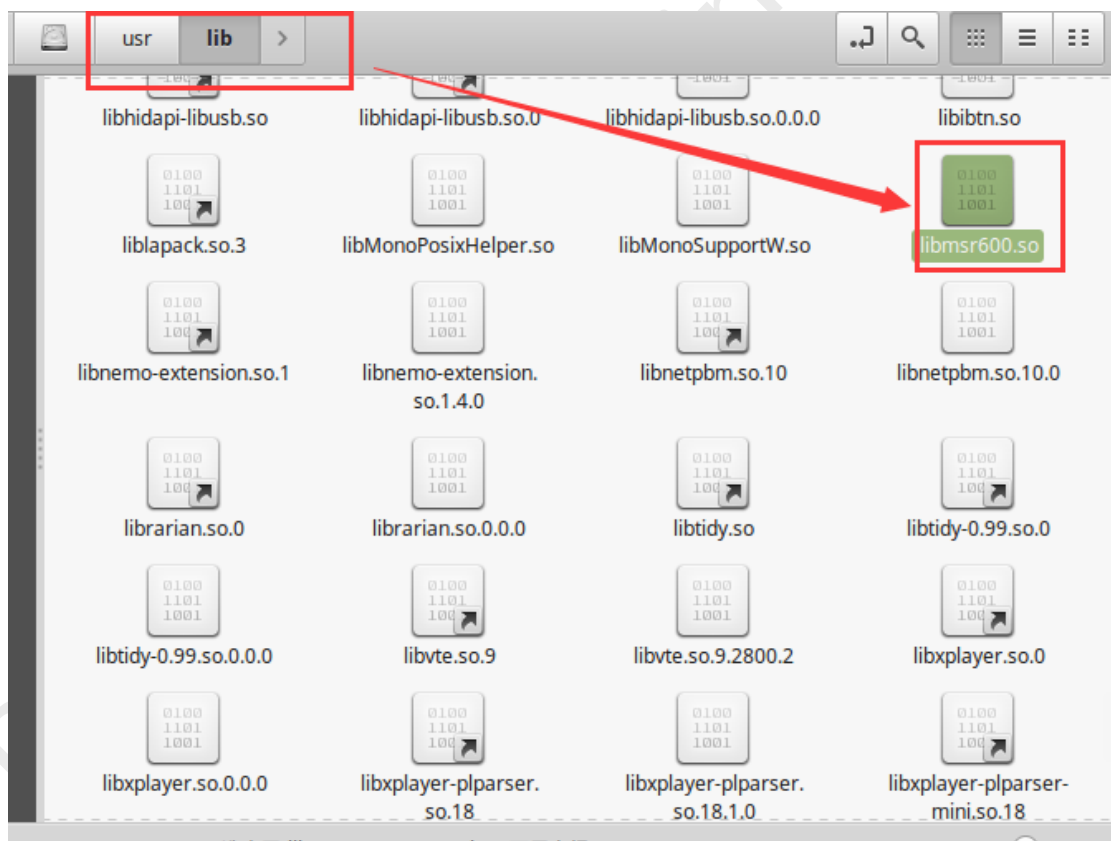


figure 8 Copy library file

In command mode, you can run command as below:

Run: `cd library`, th change the directory to library.

Then run `cp libmsr600.so /usr/lib`



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### Note:

for a 64 bit Linux system, you need to copy the files to the directory /usr/lib64.

Under the /usr/lib directory, establish soft links (which may be required)

Ln-S /usr/lib64/libudev.so.1.6.2 libudev.so

## 3.3. Demos

After successfully completing the operation of [3.1](#) and [3.2](#), you can test the Linux library:

### 3.6.1 demonstration of magnetic card setting

1、Switch to the demo directory

2、Run `./testmsr`, execute the corresponding program, and the result is as

shown in figure 9 below:

```
root@zhang-virtual-machine /home/zhang/linux_ibtn/libmsr600
文件(F) 编辑(E) 查看(V) 搜索(S) 终端(T) 帮助(H)
====end MSR600_MagGetOption()=====
zhang-virtual-machine libmsr600 # gcc testmsr.cpp -L. -lmsr600 -ludev -o testmsr
zhang-virtual-machine libmsr600 # gcc testmsr.cpp -L. -lmsr600 -ludev -o testmsr
zhang-virtual-machine libmsr600 # ./testmsr
open MSR success
E
====start get MSR version=====
version: MSR600U C2_V20.00 beta1
====end get MSR version=====

====start MSR600_MagMode()=====
MSR600_MagMode() success, transProtocol = 1
====end MSR600_MagMode()=====

E
====start MSR600_MagDataFormat()=====
MSR600_MagDataFormat() success, t1SS=% t1ES=? t2SS=? t2ES=? t3SS=? t3ES=? output
tT1=1 outputT2=1 outputT3=1 endChar=0x00
====end MSR600_MagDataFormat()=====

====start MSR600_MagGetOption()=====
MSR600_MagGetOption() success, protocol= 1 t1SS=% t1ES=? t2SS=? t2ES=? t3SS=? t3
ES=? outputT1=1 outputT2=1 outputT3=1 endChar=0x00
====end MSR600_MagGetOption()=====
zhang-virtual-machine libmsr600 #
```

figure 9 Demonstration of related commands of magnetic card



### 3. 6. 2 iBtn setting demo

- 1、Switch to the demo directory
- 2、Run `./testibtn`, execute the corresponding program, and the result is as shown in figure 10 below:

```
root@zhang-virtual-machine /home/zhang/linux_ibtn/libmsr600
文件(F) 编辑(E) 查看(V) 搜索(S) 终端(T) 帮助(H)
====end MSR600_MagGetOption()=====
zhang-virtual-machine libmsr600 # gcc testibtn.cpp -L. -lmsr600 -ludev -o testibtn
zhang-virtual-machine libmsr600 # ./testibtn
open MSR success

====start MSR600_iBtnMode()=====
MSR600_iBtnMode() success, transProtocol= 1, dataFormat=0
====end MSR600_iBtnMode()=====

====start MSR600_iBtnEndChar()=====
MSR600_iBtnEndChar() success, endChar=0x2b
====end MSR600_iBtnEndChar()=====

====start MSR600_iBtnWithdraw()=====
MSR600_iBtnWithdraw() success, withdraw=withdraw
====end MSR600_iBtnWithdraw()=====

====start MSR600_iBtnPrefixSuffix()=====
MSR600_iBtnPrefixSuffix() success: prefix=preFix, suffix=surFix
====end MSR600_iBtnPrefixSuffix()=====

====start MSR600_iBtnGetOption()=====
MSR600_iBtnGetOption() success: transProtocol=1, dataFormat=0,EndChar=0x2B,WithdrawLen=8, Withdraw=withdraw,PrefixLen=6,SubffixLen=6,PreFix=preFix,Suffix=surFix
====end MSR600_iBtnGetOption()=====
zhang-virtual-machine libmsr600 #
```

figure 10 iButton demo result

### 3. 6. 3 Hid Custom Auto upload demo

- 1、Switch to the demo directory
  - 2、Run `./testauto`, execute the corresponding program
  - 3、By swiping card or withdrawing iButton or closing iButton, you can see upload magnetic card data or iButton whitDraw data or iButton card number.
- the result is as shown in figure 11



figure 11 Hid Custom demo

The overall development process is shown in figure 12:

The overall development process is shown in figure 12:

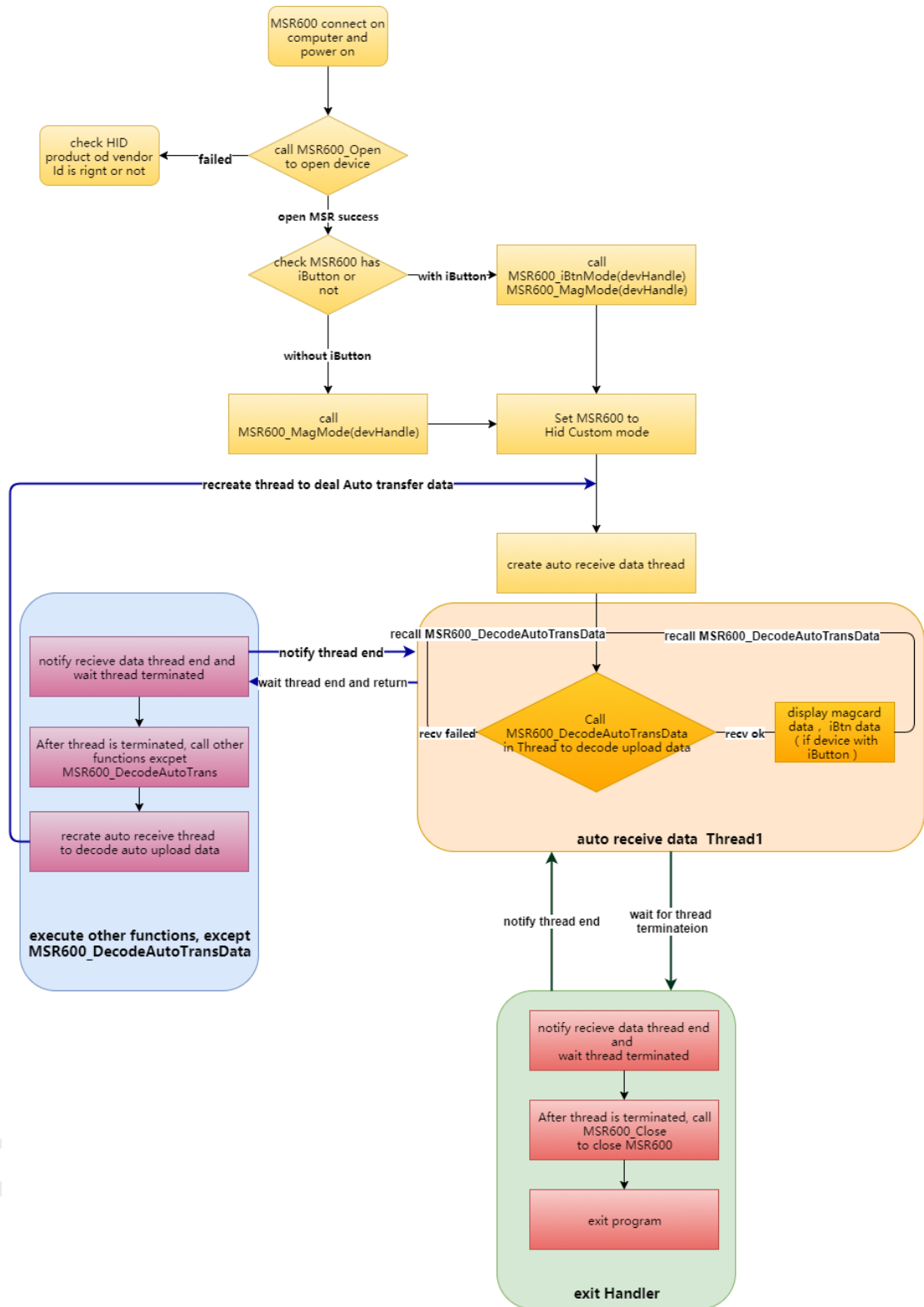


figure 12 Development process

Explain:

- 1、Call [MSR600\\_MagMode\(\)](#) or [MSR600\\_iBtnMode\(\)](#) to set the device data upload mode to hid custom mode.



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2、Start the thread, call [MSR600 DecodeAutoTransData\(\)](#), if it called successfully, then display the magnetic card information or withdraw data or card number of iButton. If you want [MSR600 DecodeAutoTransData\(\)](#) called successfully, you should swipe card or remove iButton or close iButton.

3、Before executing other command functions, make sure the thread in step 2 is ended. Once other command was executed, you should restart thread in step 2.

4、When the device needs to be shut down or the program needs to exit, first stop the thread in step 2 , then close the corresponding device by calling [MSR600 Close\(\)](#).

## 6.Function specification

### 6.1. macro and self-definition variable

#### 6.1.1 macro

```
#define CMD_OK 0
#define CMD_WRONG_PARAM 1
#define CMD_TIME_OUT 2
#define CMD_FAILED 3

#define PID 0x572B
#define VID 0x0483
```

#### 6.1.2 self-definition variable

```
typedef unsigned char BYTE;
```





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```
typedef hid_device* HANDLE;
```

## 6. 2. Device operation function

### 6. 2. 1 MSR600\_Open

**name:** MSR600\_Open

**description:** Open MSR600 device, you should know product id and vendor id by [Linux look up Hid details](#)

**params:** [in] nProductId product id of MSR600  
[in] nVendorId vendor id of MSR600

**return:** success: the [handle](#) of MSR600  
fail: NULL

```
HANDLE MSR600_Open(  
    int nProductId,  
    int nVendorId);
```

### 6. 2. 2 MSR600\_Close

**name:** MSR600\_Close

**description:** Close MSR600 device. If you call [MSR600\\_Open](#) successfully, by calling this function to close MSR600 device. After closing MSR600, set handle variable is NULL.

**params:** [in] devHandle Handle to the device, by calling [MSR600\\_Open](#) successfully

**return:** success: CMD\_OK  
fail: other value

```
int MSR600_Close(  
    HANDLE devHandle  
);
```



### 6. 2. 3 MSR600\_FwVer

**name:** MSR600\_FwVer

**description:** get MSR600's fire ware version

**params:** [in] devHandle Handle to the device, by calling [MSR600\\_Open](#) successfully  
[out]pVersionInfo store version string  
[in] nWaitTimeOut timeout waiting for command response

**return:** success: CMD\_OK  
fail: other value

```
int MSR600_FwVer(  
    HANDLE devHandle,  
    char *pVersionInfo,  
    int nWaitTimeOut=2500);
```

## 6. 3. Hid Custom Mode data Decode

### 6. 3. 1 MSR600\_DecodeAutoTransData

**name:** MSR600\_DecodeAutoTransData

**description:** get MRS600 auto upload data, then decode it. Before using this function, you should call [MSR600\\_MagMode\(\)](#), to set transProtocol = 1, to let MSR600 is HidCustom mode;  
If MR600 has iButton device, you should call [MSR600\\_iBtnMode\(\)](#) at the same time, set transProtocol=1, dataFormat=0, to let iButton is HidCustom mode, or else you can't get auto upload data.



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In Hid Custom mode, swiping card or withdrawing iButton or closing iButton, data auto upload will be triggered.

<b>params:</b>	[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
	[out]pD_Type	magnetic card data format, Refer to MRS600 communication protocol for details
	[out]pEncrypMode	magnetic card encrypt mode, Refer to MRS600 communication protocol for details
	[out]pDeviceId	device id
	[out]pT1_Status	Y: read track1 successfully; other: failed
	[out]pT1_Len	the length of track1
	[out]pT1_Data	the data of track1
	[out]pT2_Status	Y: read track2 successfully; other: failed
	[out]pT2_Len	the length of track2
	[out]pT2_Data	the data of track2
	[out]pT3_Status	Y: read track3 successfully; other: failed
	[out]pT3_Len	the length of track3
	[out]pT3_Data	the data of track3
	[out]piBtnStatus	iButton status  0x62: iButton was withdraw  0x61: iButton was closed
	[out]pCardNo	store ibutton card number or withdraw data
	[out]pCardNoLen	iButton card number length or withdraw data length
	[in] nWaitTimeOut	timeout waiting for command response



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```

return:      success:      CMD_OK;
               fail:         other value

```

```
int MSR600_DecodeAutoTransData(  
    HANDLE devHandle,  
    BYTE *pD_Type,  
    BYTE *pEncrypMode,  
    int *pDeviceId,  
    BYTE *pT1_Status, BYTE *pT1_Len, BYTE *pT1_Data,  
    BYTE *pT2_Status, BYTE *pT2_Len, BYTE *pT2_Data,  
    BYTE *pT3_Status, BYTE *pT3_Len, BYTE *pT3_Data,  
    BYTE *piBtnStatus, BYTE *pCardNo, BYTE *pCardNoLen,  
    int nWaitTimeOut = 1500);
```

#### 6.4. Reader operation function

### 6.4.1 MSR600\_MagMode

<b>name:</b>	MSR600_MagMode		
<b>description:</b>	MSR600 magnetic data transmit mode control		
<b>params:</b>	[in] devHandle	Handle to the device, by calling	<a href="#">MSR600_Open</a> successfully
	[in]transProtocol	<b>0=HID Keyboard</b> , Analog keyboard. In this mode, it is equivalent to an external keyboard device. When swiping the card directly, the data can be displayed directly in the text editor;	<b>1=HID Custom</b> In this mode, card reading data needs to be processed by computer program, by calling



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[MSR600 DecodeAutoTransData](#) to

display data

[in]nWaitTimeOut timeout waiting for command response

**return:** success: CMD\_OK

fail: other value

```
int MSR600_MagMode(  
    HANDLE devHandle,  
    BYTE transProtocol = 1,  
    int nWaitTimeOut = 2500  
);
```

### 6. 4. 2 MSR600\_MagDataFormat

**name:** MSR600\_MagDataFormat

**description:** MSR600 magnetic card data format setting

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600 Open</a> successfully
[in] t1SS	start sentinel of track1, default value '%'
[in] t1ES	end sentinel of track1, default value '?'
[in] t2SS	start sentinel of track2, default value ';'
[in] t2ES	end sentinel of track2, default value '?'
[in] t3SS	start sentinel of track3, default value '+'
[in] t3ES	end sentinel of track3, default value '?'
[in] outputT1	out put track1: true=output, false=no
[in] outputT2	out put track2: true=output, false=no
[in] outputT3	out put track3: true=output, false=no
[in] endChar	After whole packet was uploaded, the end char of packet

0X58: Enter

0X2B: Tab



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0: NULL

others: the Ascii value of character

[in] nWaitTimeOut timeout waiting for command response

**return:** success: CMD\_OK

fail: other value

int MSR600\_MagDataFormat(

HANDLE devHandle,

BYTE t1SS = '%', BYTE t1ES = '?',

BYTE t2SS = ';', BYTE t2ES = '?',

BYTE t3SS = '+', BYTE t3ES = '?',

bool outputT1 = true,

bool outputT2 = true,

bool outputT3 = true,

BYTE endChar = 0,

int nWaitTimeOut = 2500

);

### 6. 4. 3 MSR600\_MagReset

**name:** MSR600\_MagReset

**description:** MSR600 magnetic card reader reset to default option

Default option: transMode = **HID Keyboard**, analog keyboard

start sentinel of track1, default value '%'

end sentinel of track1, default value '?'

start sentinel of track2, default value ';'

end sentinel of track2, default value '?'

start sentinel of track3, default value '+'

end sentinel of track3, default value '?'



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out put track1: true

out put track2: true

out put track3: true

Package end char: 0X58 = Enter

**params:** [in] devHandle Handle to the device, by calling  
[MSR600\\_Open](#) successfully  
[in] nWaitTimeOut timeout waiting for command response

**return:** success: CMD\_OK;  
fail: other value

```
int MSR600_MagReset(  
    HANDLE devHandle,  
    int nWaitTimeOut = 2500  
);
```

### 6. 4. 4 MSR600\_MagGetOption

**name:** MSR600\_MagGetOption

**description:** Get MSR600 magnetic card reader current option

**params:** [in] devHandle Handle to the device, by calling  
[MSR600\\_Open](#) successfully  
[out] pTransProtocol **0=HID Keyboard** , Analog keyboard. In  
this mode, it is equivalent to an  
external keyboard device. When swiping  
the card directly, the data can be  
displayed directly in the text editor;  
**1=HID Custom** In this mode, card reading  
data needs to be processed by computer  
program, by calling  
[MSR600\\_DecodeAutoTransData](#) to  
display data



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[out]pT1SS	start sentinel of track1
[out]pT1ES	end sentinel of track1
[out]pT2SS	start sentinel of track2
[out]pT2ES	end sentinel of track2
[out]pT3SS	start sentinel of track3
[out]pT3ES	end sentinel of track3
[out]pOutputT1	flag output for track1: 1=output, 0=not output
[out]pOutputT2	flag output for track2: 1=output, 0=not output
[out]pOutputT3	flag output for track3: 1=output, 0=not output
[out]pEndChar	After whole packet was uploaded, the end char of packet  0X58: Enter  0X2B: Tab  0: NULL  others: the Ascii value of character
[out]nWaitTimeOut	timeout waiting for command response
<b>return:</b>	success: CMD_OK; fail: other value

```
int MSR600_MagGetOption(  
    HANDLE devHandle,  
    BYTE* pTransProtocol,  
    BYTE* pT1SS, BYTE *pT1ES,  
    BYTE* pT2SS, BYTE *pT2ES,  
    BYTE* pT3SS, BYTE *pT3ES,  
    BYTE* pOutputT1,  
    BYTE* pOutputT2,
```





```
BYTE* pOutputT3,  
BYTE* pEndChar,  
int nWaitTimeOut = 2500  
);
```

## 6. 5. iButton operation function

### 6. 5. 1 MSR600\_iBtnMode

**name:** MSR600\_iBtnMode

**description:** MSR600 iButton data transfer mode

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
[in] transProtocol	<b>0=HID Keyboard</b> , Analog keyboard. In this mode, it is equivalent to an external keyboard device. When swiping the card directly, the data can be displayed directly in the text editor; <b>1=HID Custom</b> In this mode, card reading data needs to be processed by computer program, by calling <a href="#">MSR600_DecodeAutoTransData</a> to display data
[in] dataFormat	0: transfer data as hex, 1: transfer data as decimal
[in] nWaitTimeOut	timeout waiting for command response

**return:**

success:	CMD_OK;
fail:	other value

```
int MSR600_iBtnMode(  
HANDLE devHandle,
```



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```
BYTE transProtocol=1,  
BYTE dataFormat=0,  
int nWaitTimeOut = 2500  
);
```

### 6. 5. 2 MSR600\_iBtnEndChar

**name:** MSR600\_iBtnEndChar

**description:** set MSR600 iButton's package end char

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
[in] endChar	package end char 0X58: Enter 0X2B: Tab 0: null string Other char: ASCII value of char
[in] nWaitTimeOut	timeout waiting for command response

**return:**

success:	CMD_OK;
fail:	other value

```
int MSR600_iBtnEndChar(  
HANDLE devHandle,  
BYTE endChar=0,  
int nWaitTimeOut = 2500  
);
```

### 6. 5. 3 MSR600\_iBtnWithdraw

**name:** MSR600\_iBtnWithdraw



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**description:** Set MSR600 iBtn's withDraw data, when iBtn removed from device, iBtn will upload 'withDraw data'. default withdraw data is 'remove'.

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
[in] pDrawData	withdraw data string , max length = 15
[in] drawLen	the length of withdraw data, max value = 15
[in] nWaitTimeOut	timeout waiting for command response

**return:**

success:	CMD_OK;
fail:	other value

```
int MSR600_iBtnWithDraw(  
    HANDLE devHandle,  
    BYTE *pDrawData,  
    int drawLen,  
    int nWaitTimeOut = 2500  
);
```

### 6. 5. 4 MSR600\_iBtnPrefixSuffix

**name:** MSR600\_iBtnPrefixSuffix

**description:** Set MSR600 iBtn's prefix string and suffix string. Whne iBtn was attached to device, card number was upload by device.  
Data format: prefix string + card number + suffix string

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
[in] pPreFix	prefix string, max length = 15
[in] preFixLen	the length of prefix string
[in] pSurfix	suffix string, max length = 15
[in] surFixLen	the length of suffix string



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[in] nWaitTimeOut    timeout waiting for command response

**return:**            success:            CMD\_OK;  
                 fail:            other value

```
int MSR600_iBtnPrefixSuffix(  
    HANDLE devHandle,  
    BYTE* pPrefix, int preFixLen,  
    BYTE* pSurfix, int surFixLen,  
    int nWaitTimeOut = 2500  
);
```

### 6. 5. 5 MSR600\_iBtnReset

**name:**            MSR600\_iBtnReset

**description:**    MSR600 iButton reset to default state

iButton default: data transfer mode is **0: HID Keyboard**,

Analog keyboard. In this mode, it is  
equivalent to an external keyboard device.

When swiping the card directly, the data can  
be displayed directly in the text editor

Data format = hex mode

Package end char: Enter(0x58)

Withdraw data : 'remove'

Prefix string = null string

suffix string = null string

**params:**            [in] devHandle            Handle to the device, by calling  
[MSR600\\_Open](#) successfully

[in] nWaitTimeOut    timeout waiting for command response

**return:**            success:            CMD\_OK;  
                 fail:            other value

```
int MSR600_iBtnReset(  

```



```
HANDLE devHandle,  
int nWaitTimeOut = 2500);
```

## 6. 5. 6 MSR600\_iBtnGetOption

**name:** MSR600\_iBtnGetOption

**description:** MSR600 get iBtn current option

**params:**

[in] devHandle	Handle to the device, by calling <a href="#">MSR600_Open</a> successfully
[out]pTransProtocol	<b>0=HID Keyboard</b> , Analog keyboard. In this mode, it is equivalent to an external keyboard device. When swiping the card directly, the data can be displayed directly in the text editor; <b>1=HID Custom</b> In this mode, card reading data needs to be processed by computer program, by calling <a href="#">MSR600_DecodeAutoTransData</a> to display data
[out]pDataFormat	0: transfer hex data 1: transfer decimal data
[out]pEndChar	package end char 0X58: Enter 0X2B: Tab 0: null string Other char: ASCII value of char
[out]pWithdrawLen	the length of withdraw data
[out]pWithdraw	withdraw data
[out]pPreFixLen	the length of prefix



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[out]pSubffixLen	the length of suffix
[out]pPreFix	prefix string
[out] pSuffix	suffix string
[in] nWaitTimeOut	timeout waiting for command response

**return:** success: CMD\_OK;  
fail: other value

```
int MSR600_iBtnGetOption(  
    HANDLE devHandle,  
    BYTE *pTransProtocol,  
    BYTE *pDataFormat,  
    BYTE *pEndChar,  
    BYTE *pWithDrawLen,  
    BYTE *pWithDraw,  
    BYTE *pPreFixLen,  
    BYTE *pSubffixLen,  
    BYTE *pPreFix,  
    BYTE *pSuffix,  
    int nWaitTimeOut = 2500  
);
```

## 7. Other problem

### 6. 1. GCC installation

Reference to: <https://gcc.gnu.org/install/>

### 6. 2. Linux look up Hid details

Run the command as 'root':



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```
cat /proc/bus/input/devices
```

### 6.3. Viewing the number of digits in the operating system

```
getconf LONG_BIT
```

If the returned result is 64, the Linux system belongs to 64 bit.

If the returned result is 32, the Linux system belongs to 32 bit.

<http://www.kprinter.cn>