EC2X&AG35-QuecOpen

SIM API MANUAL

LTE Module Series

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About the Document

History

Revision	Date	Author	Description
1.0	2018-03-02	Laurence Yin	Initial
1.1	2018-03-17	Laurence Yin	Modification

Contents

1 Introduction

This document mainly introduces how to use the SIM API function of Quectel Open module. SIM API function is only supported by the special software version.

SIM API

2 QL_MCM_SIM_Client_Init

2.1.

(1) Function prototype:

```
int QL_MCM_SIM_Client_Init(sim_client_handle_type    *ph_sim);
```

(2) Parameter description:

1) ph_sim:OUT the pointer of sim handle

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS,Less than 0- FAILURE

(4) Functional description:

Init SIM function handle.

2.2. QL_MCM_SIM_Client_Deinit

(1) Function prototype:

```
int QL_MCM_SIM_Client_Deinit(sim_client_handle_type h_sim);
```

(2) Parameter description:

1) h_voice:IN voice handle

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS,Less than 0- FAILURE

(4) Functional description:

Destroy related SIM feature resources

2.3.

QL_MCM_SIM_GetIMSI

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_GetIMSI
(
    sim_client_handle_type          h_sim,
    QL_SIM_APP_ID_INFO_T            *pt_info,    ///< [IN] The SIM identifier info.
    char                            *imsi,       ///< [OUT] IMSI buffer
    size_t                          imsiLen      ///< [IN] IMSI buffer length
);
```

(2) Parameter description:
1) h_sim:INsim handle
2) pt_info IN The SIM identifier info
3) imsi: IN IMSI buffer
4) imsiLen: IN IMSI buffer length
(3) Return description:int,0-SUCCESS, greater than 0- partial SUCCESS, less than 0- FAILURE
(4) Functional description:
Get the imsi from the sim card.

2.4. QL_MCM_SIM_GetICCID

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_GetICCID
(
    sim_client_handle_type          h_sim,
    E_QL_MCM_SIM_SLOT_ID_TYPE_T     simId,      ///< [IN] The SIM identifier.
    char                            *iccid,     ///< [OUT] ICCID
    size_t                          iccidLen    ///< [IN] ICCID buffer length
)
```

(2) Parameter description:
1) h_sim: IN sim handle
2) simId: IN The SIM identifier.
3) Iccid: IN ICCID
4) iccidLen: OUT ICCID buffer length
(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS,Less than 0- FAILURE
(4) Functional description:
Get the iccid.

2.5. QL_MCM_SIM_GetPhoneNumber

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_GetPhoneNumber
(
    sim_client_handle_type          h_sim,
    QL_SIM_APP_ID_INFO_T            *pt_info,     ///< [IN] The SIM identifier.
    char                            *phone_num, ///< [OUT] phone number
    size_t                          phoneLen      ///< [IN] phone number buffer length
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN The SIM identifier.
3) phone_num: OUT phone number
4) phoneLen: IN phone number buffer length

(3) Return description:int,0-SUCCESS, greater than 0- partial SUCCESS, less than 0- FAILURE

(4) Functional description:

Get the phone number from the sim EF（3GPP-EF:6F40;3GPP2-EF:6F44）;

QL_MCM_SIM_GetOperatorPlmnList

2.6.

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_GetOperatorPlmnList
(
    sim_client_handle_type                  h_sim,
    E_QL_MCM_SIM_SLOT_ID_TYPE_T             simId,      ///< [IN] The SIM identifier.
    QL_SIM_PREFERRED_OPERATOR_LIST_T        *pt_info    ///<  [OUT]  Preferred
operator list
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) simId: IN The SIM identifier
3) pt_info: OUT Preferred operator list

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS,Less than 0- FAILURE

(4) Functional description:

Get preferred operator list from the sim ef:6f61（only 3GPP work）

2.7.

QL_MCM_SIM_VerifyPIN

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_VerifyPIN
(
    sim_client_handle_type          h_sim,
    QL_SIM_VERIFY_PIN_INFO_T        *pt_info    ///< [IN] Verify PIN infor
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN Verify PIN infor

(3) Return description: int, 0-SUCCESS, Greater than 0- partial SUCCESS, Less than 0- FAILURE

(4) Functional description:

Verify PIN, the func should be called after QL_MCM_SIM_EnablePIN

QL_MCM_SIM_ChangePin

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_ChangePin
(
    sim_client_handle_type          h_sim,
    QL_SIM_CHANGE_PIN_INFO_T        *pt_info     ///< [IN] Change PIN infor
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN Change PIN infor

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS, Less than 0- FAILURE

(4) Functional description:

Change PIN, the func should be called after QL_MCM_SIM_EnablePIN

2.9. QL_MCM_SIM_UnblockPIN

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_UnblockPIN
(
    sim_client_handle_type          h_sim,
    QL_SIM_UNBLOCK_PIN_INFO_T     *pt_info     ///< [IN] Unblock PIN infor
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN Unblock PIN infor

(3) Return description: int, 0-SUCCESS, Greater than 0- partial SUCCESS, Less than 0- FAILURE

(4) Functional description:

2.10. Unblock PIN

QL_MCM_SIM_EnablePIN

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_EnablePIN
(
    sim_client_handle_type          h_sim,
```

```
    QL_SIM_ENABLE_PIN_INFO_T      *pt_info     ///< [IN] Enable PIN infor
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN Enable PIN infor

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS, Less than 0- FAILURE

(4) Functional description:

Enable PIN.

2.11. QL_MCM_SIM_ChangePin

(1) Function prototype:

```
E_QL_ERROR_CODE_T QL_MCM_SIM_DisablePIN
(
    sim_client_handle_type        h_sim,
    QL_SIM_DISABLE_PIN_INFO_T     *pt_info     ///< [IN] Disable PIN infor
)
```

(2) Parameter description:

1) h_sim: IN sim handle
2) pt_info: IN Disable PIN infor

(3) Return description:int,0-SUCCESS, Greater than 0- partial SUCCESS, Less than 0- FAILURE

(4) Functional description:

Disable PIN,

3 Program Steps Of The Demo

Please refer to **example/ecall/example_ecall.c**

Description:

step1: QL_MCM_SIM_Client_Init------ register voice client

step2: Call related function

step3: QL_MCM_SIM_Client_Deinit----- destroy client

Execution of the demo

4 Execute the command

```
/usrdata # ./example_sim
```

4.1.

Get IMSI

4.2

```
Supported test cases:
0:      print_help
1:      QL_MCM_SIM_GetIMSI
2:      QL_MCM_SIM_GetICCID
3:      QL_MCM_SIM_GetPhoneNumber
4:      QL_MCM_SIM_GetOperatorPlmnList
5:      QL_MCM_SIM_VerifyPIN
6:      QL_MCM_SIM_ChangePin
7:      QL_MCM_SIM_UnblockPIN
8:      QL_MCM_SIM_EnablePIN
9:      QL_MCM_SIM_DisablePIN
10:     QL_MCM_SIM_GetCardStatus
11:     QL_MCM_SIM_Depersonalization
12:     QL_MCM_SIM_Personalization
13:     QL_MCM_SIM_WriteFile
14:     QL_MCM_SIM_ReadFile
15:     QL_MCM_SIM_GetFileSize

please input cmd index(-1 exit): 1
QL_MCM_SIM_GetIMSI ret = 0, IMSI: 460028055129201
please input cmd index(-1 exit):
```

4.3.

Verify PIN

```
please input cmd index(-1 exit): 10
sim card status:
card type(0x01-ICC 0x02-UICC): 0b02
app_3gpp info---subscription:2817,app_state:2826,perso_feature:2816,perso_retries:0,perso_unblock_retries:0,pin1_state:804,pin1_num_retries:3,p
s:3,puk2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unblock_retries:0,pin1_state:000,pin1_num_retries:0,puk1_num_
_retries:0
 ret = 0
please input cmd index(-1 exit): 5
please input pin:
1234
[QL_MCM_SIM_VerifyPIN  398]: ret_val=0, resp_code= 1, error_code=86
QL_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit):
```

When the PIN is disable, Verify PIN will return error code 86.

When the PIN is enable, Verify PIN will return ok with no error code.

4.4 Unblock PIN

When three consecutive PIN1 errors, the sim card will be block. After enter the correct PUK and new PIN1, the sim card will be unblock.

5 SIM Build Instructions

Description:

1. Unzip file ql-ol-sdk.tar.bz2:tar -jxvf ql-ol-sdk.tar.bz2
2. Enter the ql-ol-sdk directory:cd ql-ol-sdk
3. source ql-ol-crosstool/ql-ol-crosstool-env-init (Ensure that the SDK version is consistent with the module version, or there may be an error)
4. Execute the command: cd ql-ol-extsdk/example/sim
5. Execute the command: make clean; make;