

EC2X&AG35-QuecOpen

SIM API MANUAL

LTE Module Series

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About the Document

History

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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.

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SIM API

2 QL_MCM_SIM_Client_Init

(1) Function prototype:

2.1. `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_sim`: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.

QL_MCM_SIM_GetICCID

2.4. (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:

2.8. 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.

## QL\_MCM\_SIM\_ChangePin

- 2.11.** (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,

Program Steps Of The Demo

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

3 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(0x801-icc 0x802-uicc): 0b02
app_3gpp info---subscription:2817,app_state:2826,perso_feature:2816,perso_retries:0,perso_unblock_retries:0,pin1_state:604,pin1_num_retries:3,
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.

```

please input cmd index(-1 exit): 10
sim card status:
card type(0x001-ICC 0x002-UICC): 0602
app_3gpp info---subscription:2617,app_state:2626,perso_feature:2616,perso_retries:0,perso_unlock_retries:0,pind_state:804,pind_num_retries:3,puk1_num_retries:10,pind2_state:2618,pind2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unlock_retries:0,pind_state:000,pind_num_retries:0,puk1_num_retries:0,pind2_state:0,pind2_num_retries:0,puk2_num_retries:0
ret = 0
please input cmd index(-1 exit): 5
please input pin:
1234
[Q_MCM_SIM_VerifyPIN 598]: ret_val=0, resp_code= 1, error_code=89
[Q_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit): 8
please input pin:
1234
[Q_MCM_SIM_EnablePIN ret = 0
please input cmd index(-1 exit): 10
sim card status:
card type(0x001-ICC 0x002-UICC): 0602
app_3gpp info---subscription:2617,app_state:2626,perso_feature:2616,perso_retries:0,perso_unlock_retries:0,pind_state:803,pind_num_retries:3,puk1_num_retries:10,pind2_state:2618,pind2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unlock_retries:0,pind_state:000,pind_num_retries:0,puk1_num_retries:0,pind2_state:0,pind2_num_retries:0,puk2_num_retries:0
ret = 0
please input cmd index(-1 exit): 5
please input pin:
1234
[Q_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit):

```

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

Unlock PIN

4.4

```

please input cmd index(-1 exit): 10
sim card status:
card type(0x001-ICC 0x002-UICC): 0602
app_3gpp info---subscription:2617,app_state:2626,perso_feature:2616,perso_retries:0,perso_unlock_retries:0,pind_state:803,pind_num_retries:3,puk1_num_retries:10,pind2_state:2618,pind2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unlock_retries:0,pind_state:000,pind_num_retries:0,puk1_num_retries:0,pind2_state:0,pind2_num_retries:0,puk2_num_retries:0
ret = 0
please input cmd index(-1 exit): 5
please input pin:
1111
[Q_MCM_SIM_VerifyPIN 598]: ret_val=0, resp_code= 1, error_code=118
[Q_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit): 5
please input pin:
1111
[Q_MCM_SIM_VerifyPIN 598]: ret_val=0, resp_code= 1, error_code=116
[Q_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit): 5
please input pin:
1111
[Q_MCM_SIM_VerifyPIN 598]: ret_val=0, resp_code= 1, error_code=114
[Q_MCM_SIM_VerifyPIN ret = 0
please input cmd index(-1 exit): 10
sim card status:
card type(0x001-ICC 0x002-UICC): 0602
app_3gpp info---subscription:2617,app_state:2626,perso_feature:2616,perso_retries:0,perso_unlock_retries:0,pind_state:805,pind_num_retries:0,puk1_num_retries:10,pind2_state:2618,pind2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unlock_retries:0,pind_state:000,pind_num_retries:0,puk1_num_retries:0,pind2_state:0,pind2_num_retries:0,puk2_num_retries:0
ret = 0
please input cmd index(-1 exit): 7
please input puk1:
40346336
please input new pind:
1234
[Q_MCM_SIM_UnblockPIN ret = 0
please input cmd index(-1 exit): 10
sim card status:
card type(0x001-ICC 0x002-UICC): 0602
app_3gpp info---subscription:2617,app_state:2626,perso_feature:2616,perso_retries:0,perso_unlock_retries:0,pind_state:803,pind_num_retries:3,puk1_num_retries:10,pind2_state:2618,pind2_num_retries:10
app_3gpp2 info---subscription:0,app_state:0,perso_feature:0,perso_retries:0,perso_unlock_retries:0,pind_state:000,pind_num_retries:0,puk1_num_retries:0,pind2_state:0,pind2_num_retries:0,puk2_num_retries:0
ret = 0
please input cmd index(-1 exit):

```

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.

SIM Build Instructions

Description:

- 5** 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;