A76xx Series Open SDK_应用 demo

LTE 模组

芯讯通无线科技(上海)有限公司
上海市长宁区临虹路289号3号楼芯讯通总部大楼
电话：86-21-31575100
技术支持邮箱：support@simcom.com
官网：www.simcom.com

名称：	A76xx Series Open SDK_应用demo
版本：	V1.00
类别：	应用文档
状态：	初始文件

版权声明

本手册包含芯讯通无线科技（上海）有限公司（简称：芯讯通）的技术信息。除非经芯讯通书面许可，任何单位和个人不得擅自摘抄、复制本手册内容的部分或全部，并不得以任何形式传播，违反者将被追究法律责任。对技术信息涉及的专利、实用新型或者外观设计等知识产权，芯讯通保留一切权利。芯讯通有权在不通知的情况下随时更新本手册的具体内容。

本手册版权属于芯讯通，任何人未经我公司书面同意进行复制、引用或者修改本手册都将承担法律责任。

芯讯通无线科技(上海)有限公司
上海市长宁区临虹路289号3号楼芯讯通总部大楼
电话：86-21-31575100
邮箱：simcom@simcom.com
官网：www.simcom.com

了解更多资料，请点击以下链接：
http://cn.simcom.com/download/list-230-cn.html

技术支持，请点击以下链接：
http://cn.simcom.com/ask/index-cn.html 或发送邮件至 support@simcom.com

Version History

Version	Date	Owner	What is new
V1.00	2022-11-17		第一版

About this Document

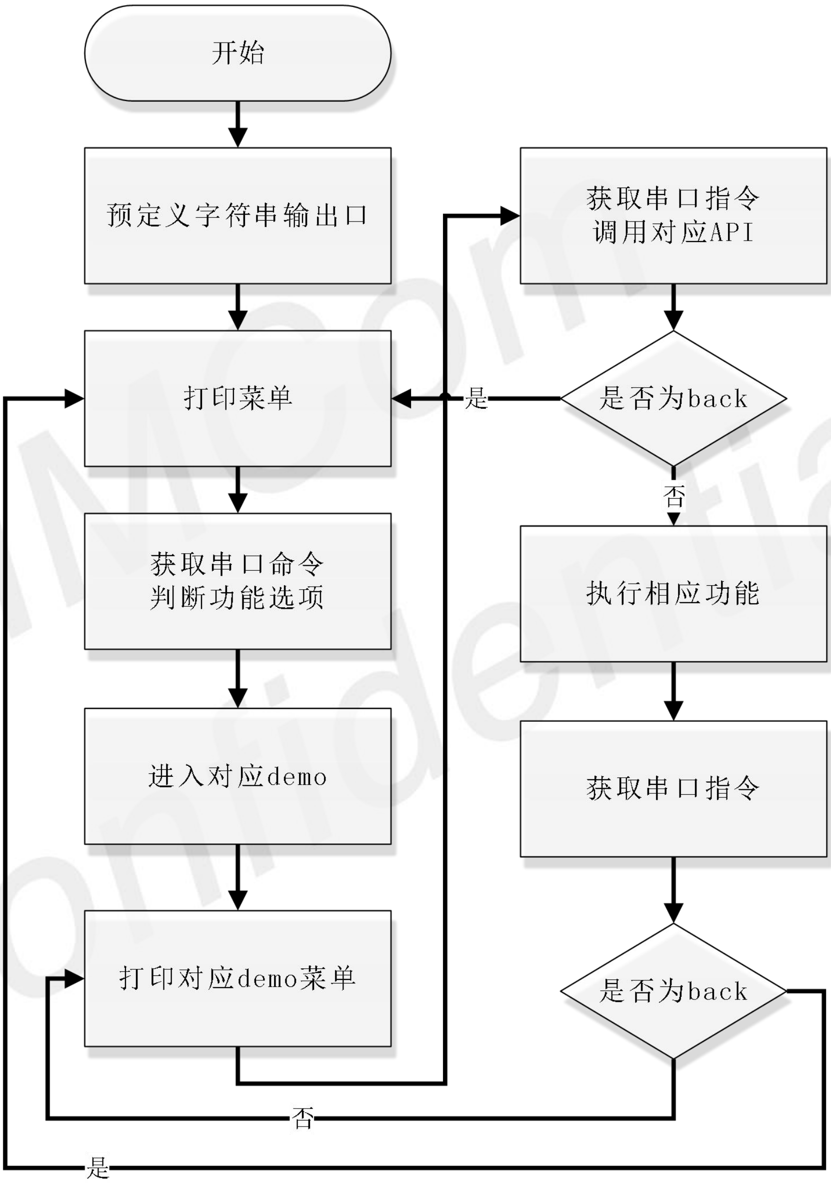
本文档适用于 A1803S open 系列、A1603 open 系列、A1606 open 系列。

目录

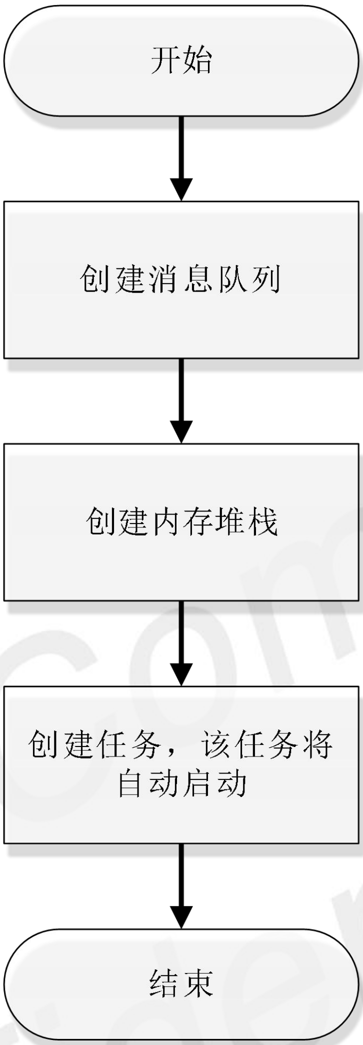
缩略语

API	application program interface

1Demo 介绍



源代码所有 OpenSDK 演示任务管理与 UI 流程图



基于消息队列和阻塞方法的 UI demo 任务创建流程图

Demo 主要实现了采用消息队列和阻塞方法创建 UI demo ，打印功能菜单，判断串口命令，跳转对应 demo ，调用具体 API 等功能。在这个板块中可以对所有 OpenSDK API 进行测试。

sAPP_SimcomUIDemo 将基于消息队列和阻塞方法创建 UI demo 任务，该任务将自动启动。客户需要 SIMCOM_UI_DEMO_TO_UART1_PORT 选择硬件接口，才可执行后续操作。

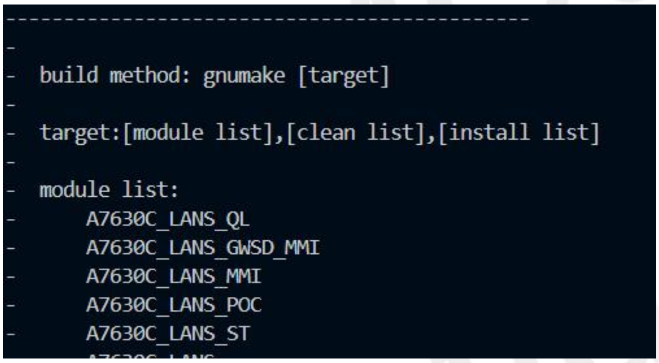
2 编译运行 demo

Demo 文件名：simcom_demo.c

2.1 编译 demo

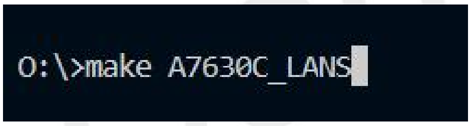
1） 以 1606 为例，在 Windows 上进入 SDK 根目录，打开 CMD 命令行（详见 A76xx Series Open SDK_SDK 编译下载及调试方法）

2） 输入 gnumake/make 并回车，会打印帮助信息



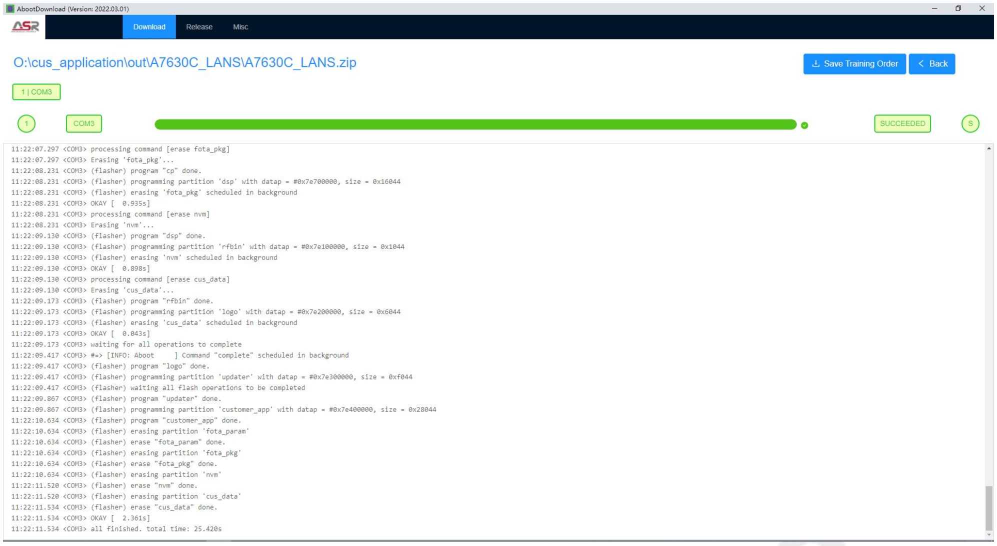
```
---------------------------------------------
-
-  build method: gnumake [target]
-
-  target:[module list],[clean list],[install list]
-
-  module list:
-      A7630C_LANS_QL
-      A7630C_LANS_GWSD_MMI
-      A7630C_LANS_MMI
-      A7630C_LANS_POC
-      A7630C_LANS_ST
```

3） 根据帮助提示，输入编译指令，即可完成编译



```
O:\>make A7630C_LANS
```

4） 烧录 O:\cus_application\out 目录下的固件包到模块中

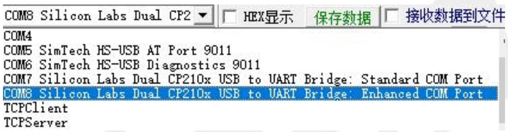


O:\cus_application\out\A7630C_LANS\A7630C_LANS.zip

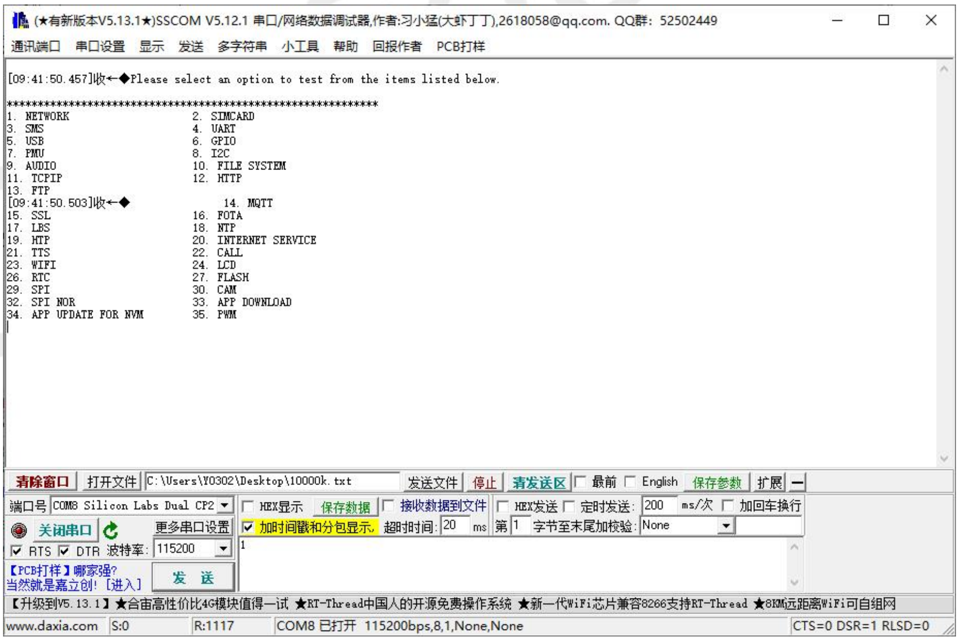
```
11:22:07.297 <COM3> processing command [erase fota_pkg]
11:22:07.297 <COM3> Erasing 'fota_pkg'...
11:22:08.231 <COM3> (flasher) program "cp" done.
11:22:08.231 <COM3> (flasher) programming partition 'dsp' with datap = #0x7e700000, size = 0x16044
11:22:08.231 <COM3> (flasher) erasing 'fota_pkg' scheduled in background
11:22:08.231 <COM3> OKAY [  0.935s]
11:22:08.231 <COM3> processing command [erase nvm]
11:22:08.231 <COM3> Erasing 'nvm'...
11:22:09.130 <COM3> (flasher) program "dsp" done.
11:22:09.130 <COM3> (flasher) programming partition 'rfbin' with datap = #0x7e100000, size = 0x1044
11:22:09.130 <COM3> (flasher) erasing 'nvm' scheduled in background
11:22:09.130 <COM3> OKAY [  0.898s]
11:22:09.130 <COM3> processing command [erase cus_data]
11:22:09.130 <COM3> Erasing 'cus_data'...
11:22:09.173 <COM3> (flasher) program "rfbin" done.
11:22:09.173 <COM3> (flasher) programming partition 'logo' with datap = #0x7e200000, size = 0x6044
11:22:09.173 <COM3> (flasher) erasing 'cus_data' scheduled in background
11:22:09.173 <COM3> OKAY [  0.043s]
11:22:09.173 <COM3> waiting for all operations to complete
11:22:09.417 <COM3> #=> [INFO: Aboot     ] Command "complete" scheduled in background
11:22:09.417 <COM3> (flasher) program "logo" done.
11:22:09.417 <COM3> (flasher) programming partition 'updater' with datap = #0x7e300000, size = 0xf044
11:22:09.417 <COM3> (flasher) waiting all flash operations to be completed
11:22:09.867 <COM3> (flasher) program "updater" done.
11:22:09.867 <COM3> (flasher) programming partition 'customer_app' with datap = #0x7e400000, size = 0x28044
11:22:10.634 <COM3> (flasher) program "customer_app" done.
11:22:10.634 <COM3> (flasher) erasing partition 'fota_param'
11:22:10.634 <COM3> (flasher) erase "fota_param" done.
11:22:10.634 <COM3> (flasher) erasing partition 'fota_pkg'
11:22:10.634 <COM3> (flasher) erase "fota_pkg" done.
11:22:10.634 <COM3> (flasher) erasing partition 'nvm'
11:22:11.520 <COM3> (flasher) erase "nvm" done.
11:22:11.520 <COM3> (flasher) erasing partition 'cus_data'
11:22:11.534 <COM3> (flasher) erase "cus_data" done.
11:22:11.534 <COM3> OKAY [  2.361s]
11:22:11.534 <COM3> all finished. total time: 25.420s
```

2.2 运行 demo

烧录完成后重启模块，在 Windows 上打开串口/网络数据调试器，使用开发板上的 Enhanced 口（模块主串口），开机后即可接收到模块打印的 demo 菜单。



```
COM4
COM5 SimTech HS-USB AT Port 9011
COM6 SimTech HS-USB Diagnostics 9011
COM7 Silicon Labs Dual CP210x USB to UART Bridge: Standard COM Port
COM8 Silicon Labs Dual CP210x USB to UART Bridge: Enhanced COM Port
TCPClient
TCPServer
```


(★有新版本V5.13.1★)SSCOM V5.12.1 串口/网络数据调试器,作者:习小猛(大虾丁丁),2618058@qq.com. QQ群：52502449
通讯端口
串口设置
显示
发送
多字符串
小工具
帮助
回报作者
PCB打样
清除窗口
打开文件
发送文件
停止
清发送区
最前
English
保存参数
扩展
HEX显示
保存数据
接收数据到文件
HEX发送
加回车换行
关闭串口
更多串口设置
发 送
【PCB打样】哪家强?
当然就是嘉立创! [进入]
【升级到V5.13.1】★合宙高性价比4G模块值得一试 ★RT-Thread中国人的开源免费操作系统 ★新一代WiFi芯片兼容8266支持RT-Thread ★8KM远距离WiFi可自组网

```
[09:41:50.457]收←◆Please select an option to test from the items listed below.

************************************************************
1. NETWORK                         2. SIMCARD
3. SMS                             4. UART
5. USB                             6. GPIO
7. PMU                             8. I2C
9. AUDIO                           10. FILE SYSTEM
11. TCPIP                          12. HTTP
13. FTP
[09:41:50.503]收←◆                     14. MQTT
15. SSL                            16. FOTA
17. LBS                            18. NTP
19. HTP                            20. INTERNET SERVICE
21. TTS                            22. CALL
23. WIFI                           24. LCD
26. RTC                            27. FLASH
29. SPI                            30. CAM
32. SPI NOR                        33. APP DOWNLOAD
34. APP UPDATE FOR NVM             35. PWM
```

C:\Users\Y0302\Desktop\10000k.txt

端口号 COM8 Silicon Labs Dual CP2

☑ 加时间戳和分包显示, 超时时间: 20 ms 第 1 字节至末尾加校验: None

□ 定时发送: 200 ms/次

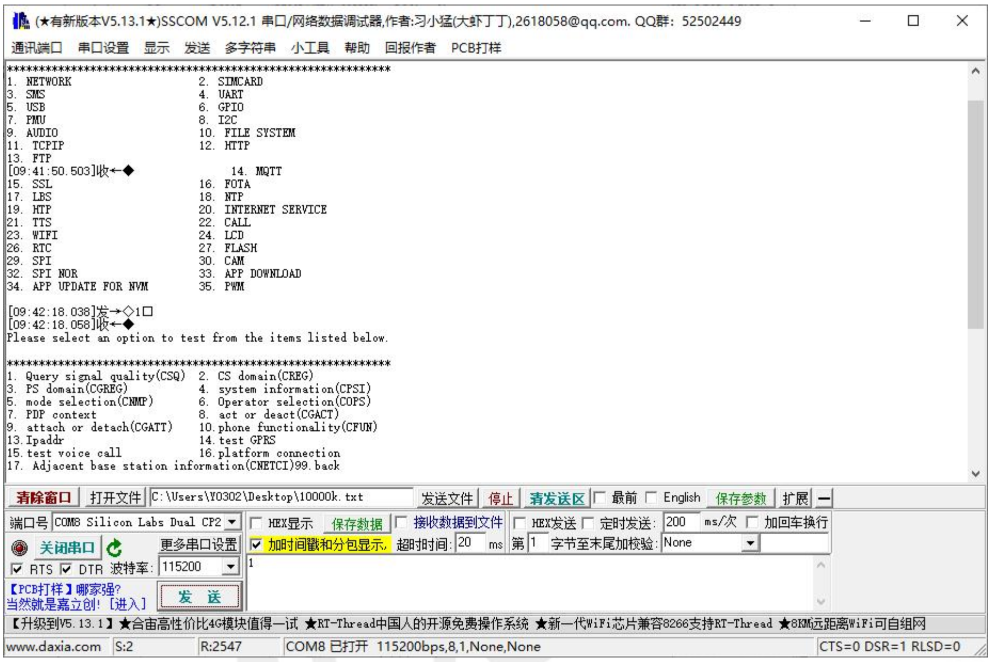
☑ RTS ☑ DTR 波特率: 115200

1

www.daxia.com S:0 R:1117 COM8 已打开 115200bps,8,1,None,None CTS=0 DSR=1 RLSD=0

2.3 串口发送命令

在串口/网络数据调试器中按各个功能模块发送对应数字，即可进入对应 demo 。以 NETWORK 为例，串口发送数字 1（取消回车换行符），进入网络相关功能 demo 。


(★有新版本V5.13.1★)SSCOM V5.12.1 串口/网络数据调试器,作者:习小猛(大虾丁丁),2618058@qq.com. QQ群: 52502449
通讯端口 串口设置 显示 发送 多字符串 小工具 帮助 回报作者 PCB打样
清除窗口 打开文件 C:\Users\Y0302\Desktop\10000k.txt 发送文件 停止 清发送区 □ 最前 □ English 保存参数 扩展 —
端口号 COM8 Silicon Labs Dual CP2
□ HEX显示 保存数据 □ 接收数据到文件 □ HEX发送 □ 定时发送: 200 ms/次 □ 加回车换行
关闭串口 更多串口设置 ☑ 加时间戳和分包显示, 超时时间: 20 ms 第 1 字节至末尾加校验: None
☑ RTS ☑ DTR 波特率: 115200
1
【PCB打样】哪家强? 当然就是嘉立创! [进入] 发 送
【升级到V5.13.1】★合宙高性价比4G模块值得一试 ★RT-Thread中国人的开源免费操作系统 ★新一代WiFi芯片兼容8266支持RT-Thread ★8KM远距离WiFi可自组网
www.daxia.com S:2 R:2547 COM8 已打开 115200bps,8,1,None,None CTS=0 DSR=1 RLSD=0

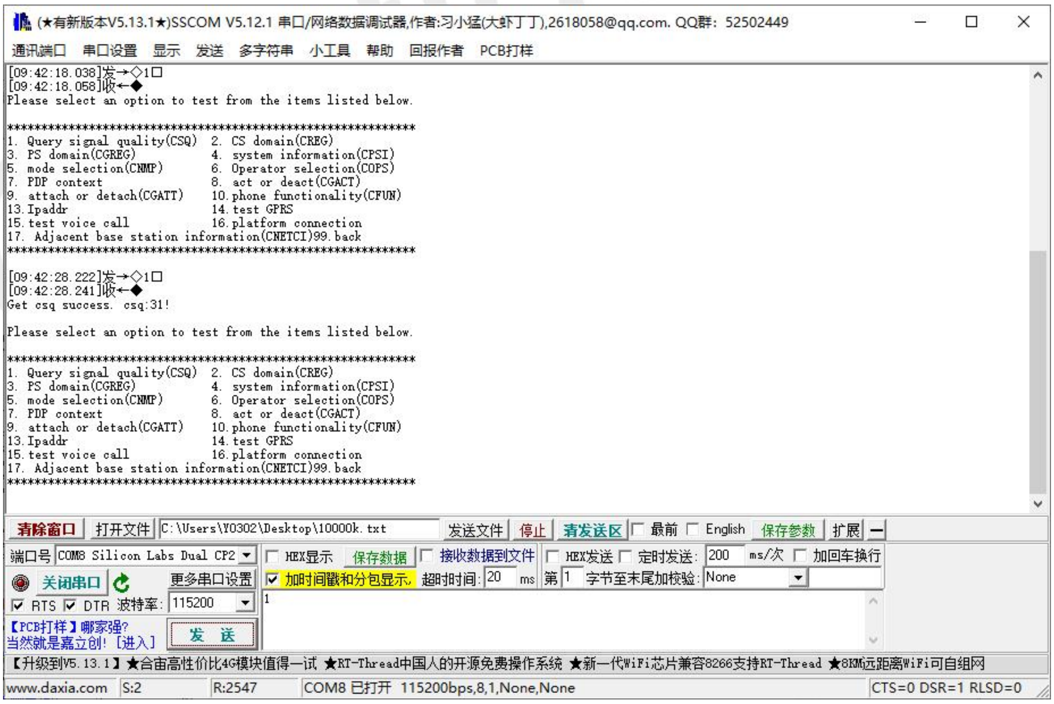
```
************************************************************
1.  NETWORK                     2.  SIMCARD
3.  SMS                         4.  UART
5.  USB                         6.  GPIO
7.  PMU                         8.  I2C
9.  AUDIO                       10.  FILE SYSTEM
11.  TCPIP                      12.  HTTP
13.  FTP
[09:41:50.503]收←◆                  14.  MQTT
15.  SSL                        16.  FOTA
17.  LBS                        18.  NTP
19.  HTP                        20.  INTERNET SERVICE
21.  TTS                        22.  CALL
23.  WIFI                       24.  LCD
26.  RTC                        27.  FLASH
29.  SPI                        30.  CAM
32.  SPI NOR                    33.  APP DOWNLOAD
34.  APP UPDATE FOR NVM         35.  PWM

[09:42:18.038]发→◇1□
[09:42:18.058]收←◆
Please select an option to test from the items listed below.

************************************************************
1.  Query signal quality(CSQ)  2.  CS domain(CREG)
3.  PS domain(CGREG)           4.  system information(CPSI)
5.  mode selection(CNMP)       6.  Operator selection(COPS)
7.  PDP context                8.  act or deact(CGACT)
9.  attach or detach(CGATT)    10.phone functionality(CFUN)
13.Ipaddr                      14.test GPRS
15.test voice call             16.platform connection
17.  Adjacent base station information(CNETCI)99.back
```

2.4 执行对应功能

在串口/网络数据调试器中发送需要测试的功能对应数字，相关功能 demo 中将调用具体 API 执行对应功能。以 CSQ 查询信号质量功能为例，在串口中发送数字 1，调用 sAPI_NetworkGetCsq 执行信号质量查询功能，此处“Get csq success. csq=31”即为输出结果。


(★有新版本V5.13.1★)SSCOM V5.12.1 串口/网络数据调试器,作者:习小猛(大虾丁丁),2618058@qq.com. QQ群: 52502449
通讯端口 串口设置 显示 发送 多字符串 小工具 帮助 回报作者 PCB打样
清除窗口 打开文件 C:\Users\Y0302\Desktop\10000k.txt 发送文件 停止 清发送区 □ 最前 □ English 保存参数 扩展 —
端口号 COM8 Silicon Labs Dual CP2
□ HEX显示 保存数据 □ 接收数据到文件 □ HEX发送 □ 定时发送: 200 ms/次 □ 加回车换行
关闭串口 更多串口设置 ☑ 加时间戳和分包显示, 超时时间: 20 ms 第 1 字节至末尾加校验: None
☑ RTS ☑ DTR 波特率: 115200
1
【PCB打样】哪家强? 当然就是嘉立创! [进入] 发 送
【升级到V5.13.1】★合宙高性价比4G模块值得一试 ★RT-Thread中国人的开源免费操作系统 ★新一代WiFi芯片兼容8266支持RT-Thread ★8KM远距离WiFi可自组网
www.daxia.com S:2 R:2547 COM8 已打开 115200bps,8,1,None,None CTS=0 DSR=1 RLSD=0

```
[09:42:18.038]发→◇1□
[09:42:18.058]收←◆
Please select an option to test from the items listed below.

************************************************************
1.  Query signal quality(CSQ)  2.  CS domain(CREG)
3.  PS domain(CGREG)           4.  system information(CPSI)
5.  mode selection(CNMP)       6.  Operator selection(COPS)
7.  PDP context                8.  act or deact(CGACT)
9.  attach or detach(CGATT)    10.phone functionality(CFUN)
13.Ipaddr                      14.test GPRS
15.test voice call             16.platform connection
17.  Adjacent base station information(CNETCI)99.back
************************************************************

[09:42:28.222]发→◇1□
[09:42:28.241]收←◆
Get csq success. csq:31!

Please select an option to test from the items listed below.

************************************************************
1.  Query signal quality(CSQ)  2.  CS domain(CREG)
3.  PS domain(CGREG)           4.  system information(CPSI)
5.  mode selection(CNMP)       6.  Operator selection(COPS)
7.  PDP context                8.  act or deact(CGACT)
9.  attach or detach(CGATT)    10.phone functionality(CFUN)
13.Ipaddr                      14.test GPRS
15.test voice call             16.platform connection
17.  Adjacent base station information(CNETCI)99.back
************************************************************
```

3Demo

```
#include "simcom_os.h"
#include "string.h"
#include "stdlib.h"
#include "stdio.h"
#include "simcom_uart.h"
#include "simcom_debug.h"
#include "simcom_common.h"

#ifdef FEATURE_SIMCOM_MQTT
sMsgQRef urc_mqtt_msgq_1;
#endif

typedef enum
{
    SC_DEMO_FOR_NETWORK                 =   1,   //API test for network
    SC_DEMO_FOR_SIMCARD                 =   2,   //API test for SIM Card
    SC_DEMO_FOR_SMS                     =   3,   //API test for SMS
    SC_DEMO_FOR_UART                    =   4,   //API test for UART
    SC_DEMO_FOR_USB                     =   5,   //API test for USB
    SC_DEMO_FOR_GPIO                    =   6,   //API test for GPIO
    SC_DEMO_FOR_PMU                     =   7,   //API test for PMU
    SC_DEMO_FOR_I2C                     =   8,   //API test for I2C
#ifdef FEATURE_SIMCOM_AUDIO
    SC_DEMO_FOR_AUDIO                   =   9,   //API test for audio
#endif
    SC_DEMO_FOR_FILE_SYSTEM             =   10,  //API test for File System
    SC_DEMO_FOR_TCP_IP                  =   11,  //API test for TCP/IP
    SC_DEMO_FOR_HTTP_HTTPS              =   12,  //API test for HTTP(s)
#ifdef FEATURE_SIMCOM_FTPS
    SC_DEMO_FOR_FTP_FTPS                =   13,  //API test for FTP(s)
#endif
#ifdef FEATURE_SIMCOM_MQTT
    SC_DEMO_FOR_MQTT_MQTTS              =   14,  //API test for MQTT(s)
#endif
#ifdef FEATURE_SIMCOM_MSSL
    SC_DEMO_FOR_SSL                     =   15,  //API test for SSL
#endif
    SC_DEMO_FOR_OTA                     =   16,  //API test for OTA
    SC_DEMO_FOR_LBS                    =  17,   //API test for LBS
#ifdef FEATURE_SIMCOM_NTP
    SC_DEMO_FOR_NTP                   =  18,   //API test for NTP
#endif
#ifdef FEATURE_SIMCOM_HTP
    SC_DEMO_FOR_HTP                   =  19,   //API test for HTP
#endif
    SC_DEMO_FOR_INTERNET_SERVICE   =  20,   //API test for Internet service
#ifdef FEATURE_SIMCOM_TTS
    SC_DEMO_FOR_TTS                    =  21,   //API test for TTS
#endif
    SC_DEMO_FOR_CALL                   =  22,   //API test for CALL
    SC_DEMO_FOR_WIFI                    =  23,   //API test for WIFI
#if defined(FEATURE_SIMCOM_GPS) || defined(JACANA_GPS_SUPPORT)
    SC_DEMO_FOR_GNSS                   =  24,   //API test for GNSS
    SC_DEMO_FOR_LCD                    =  25,   //API test for LCD
#else
    SC_DEMO_FOR_LCD                    =  24,   //API test for LCD
#endif
    SC_DEMO_FOR_RTC                    =  26,   //API test for RTC
    SC_DEMO_FOR_FLASH                   =  27,   //API test for flash
#ifdef FEATURE_SIMCOM_FS_OLD
    SC_DEMO_FOR_FILE_SYSTEM_OLD     =  28,   //API test for File System of 1601
#endif
    SC_DEMO_FOR_SPI                    =  29,   //API test for SPI
    SC_DEMO_FOR_CAM                     =  30,   //API test for CAM
#ifdef BT_SUPPORT
    SC_DEMO_FOR_BLE                    =  31,   //API test for BLE
#endif
    SC_DEMO_FOR_SPI_NOR                =  32,   //API test for SPI
    SC_DEMO_FOR_APP_DOWNLOAD          =  33,   //API test for APP DOWNLOAD
    SC_DEMO_FOR_APP_UPDATE_FOR_NVM   =  34,   //API test for APP UPDATE FOR NVM
    SC_DEMO_FOR_PWM                    =  35,   //API test for PWM
#ifdef FEATURE_SIMCOM_POC
    SC_DEMO_FOR_POC                   =  36,   //API test for POC
#endif
}SC_DEMO_TYPE;

sMsgQRef simcomUI_msgq;
sTaskRef simcomUIProcesser;
#ifdef FEATURE_SIMCOM_MQTT
extern void MqttDemo(void);
#endif
#ifdef FEATURE_SIMCOM_NTP
extern void NtpDemo(void);
#endif
```

```
#ifdef FEATURE_SIMCOM_HTP
extern void HtpDemo(void);
#endif
extern void NetWorkDemo(void);
extern void FsDemo(void);
extern void TcpipDemo(void);
#if 0
extern void NtpDemo(void);
extern void HtpDemo(void);
extern void FsDemo(void);
extern void CALLDemo(void);
extern void WIFIDemo(void);
extern void Fs2Demo(void);
#endif
#ifdef SIMCOM_LCD_SUPPORT
extern void LcdDemo(void);
#endif
#ifdef SIMCOM_CAMERA_SUPPORT
extern void CamDemo(void);
#endif
#ifdef FEATURE_SIMCOM_AUDIO
extern void AudioDemo(void);
#endif
#ifdef FEATURE_SIMCOM_TTS
extern void TTSDemo(void);
#endif
extern void FlashRWdemo(void);
extern void SpiDemo(void);
extern void SpiNorDemo(void);
extern void GNSSDemo(void);
extern void UartDemo(void);
extern void I2cDemo(void);
extern void GpioDemo(void);
#ifdef FEATURE_SIMCOM_CALL
extern void CALLDemo(void);
#endif
extern void SMSDemo(void);
extern void SimcardDemo(void);
extern void PMUDemo(void);
extern void FotaDemo(void);
extern void SslDemo(void);
extern void AppDownloadDemo(void);
extern void FtpsDemo(void);
extern void HttpsDemo(void);
extern void AppUpdateDemo(void);
extern void PwmDemo(void);
extern void WIFIDemo(void);
#ifdef BT_SUPPORT
extern void BLEDemo(void);
#endif
#ifdef FEATURE_SIMCOM_POC
extern void POCDemo(void);
#endif
extern void LbsDemo(void);
extern void RTCDemo(void);

void PrintfResp(char* format)
{
    UINT32 length = strlen(format);
#ifdef SIMCOM_UI_DEMO_TO_UART1_PORT
#if (defined SIMCOM_A7680C_V5_01) || (defined SIMCOM_A7670C_V7_01)
    sAPI_UartWrite(SC_UART4,(UINT8*)format,length);
#else
    sAPI_UartWrite(SC_UART,(UINT8*)format,length);
#endif
#else
    sAPI_UsbVcomWrite((UINT8*)format,length);
#endif
}

void PrintfOptionMenu(char* options_list[], int array_size)
{
    UINT32 i = 0;
    sAPI_Debug("array_size = [%d]",array_size);
    char menu[80] = {0};
    PrintfResp("\r\n************************************************************\r\n");
    for(i = 0;i < (array_size/2);i++)
    {
        memset(menu, 0, 80);
        snprintf(menu, 80, "%-30s%-30s", options_list[2*i], options_list[2*i+1]);
        PrintfResp(menu);
        PrintfResp("\r\n");
    }

    if(array_size%2 != 0)
    {
        memset(menu, 0, 80);
        snprintf(menu, 80, "%s", options_list[array_size-1]);
        PrintfResp(menu);
        PrintfResp("\r\n");
    }
    PrintfResp("************************************************************\r\n");
```

```
}

SIM_MSG_T GetParamFromUart(void)
{
    SIM_MSG_T optionMsg ={0,0,0,NULL};
    sAPI_MsgQRecv(simcomUI_msgq,&optionMsg,SC_SUSPEND);

    return optionMsg;
}

void sTask_SimcomUIProcesser(void * arg)
{
    SIM_MSG_T optionMsg ={0,0,0,NULL};
    UINT32 opt = 0;
    char *note = "Please select an option to test from the items listed below.\n";
    char *options_list[] = {
    "1. NETWORK",
    "2. SIMCARD",
    "3. SMS",
    "4. UART",
#ifndef AT_COMMAND_SUPPORT
    "5. USB",
#endif
    "6. GPIO",
    "7. PMU",
    "8. I2C",
#ifdef FEATURE_SIMCOM_AUDIO
    "9. AUDIO",
#endif
    "10. FILE SYSTEM",
    "11. TCPIP",
    "12. HTTP",
    "13. FTP",
    "14. MQTT",
    "15. SSL",
    "16. FOTA",
    "17. LBS",
#ifdef FEATURE_SIMCOM_NTP
    "18. NTP",
#endif
#ifdef FEATURE_SIMCOM_HTP
    "19. HTP",
#endif
    "20. INTERNET SERVICE",
#ifdef FEATURE_SIMCOM_TTS
```

```
    "21. TTS",
#endif
    "22. CALL",
    "23. WIFI",
#if defined(FEATURE_SIMCOM_GPS) || defined(JACANA_GPS_SUPPORT)
    "24. GNSS",
    "25. LCD",
#else
    "24. LCD",
#endif
    "26. RTC",
    "27. FLASH",

#ifdef FEATURE_SIMCOM_FS_OLD
    "28. FILE SYSTEM Compatible API",
#endif
    "29. SPI",
    "30. CAM",
#ifdef BT_SUPPORT
    "31. BLE",
#endif
    "32. SPI NOR",
    "33. APP DOWNLOAD",
    "34. APP UPDATE FOR NVM",
    "35. PWM",
#ifdef FEATURE_SIMCOM_POC
    "36. POC",
#endif
    };

    while(1)
    {
        PrintfResp(note);
        PrintfOptionMenu(options_list,sizeof(options_list)/sizeof(options_list[0]));

        sAPI_MsgQRecv(simcomUI_msgq,&optionMsg,SC_SUSPEND);
        if(SRV_UART != optionMsg.msg_id)
        {
            sAPI_Debug("%s,msg_id is error!!",__func__);
            break;
        }

        sAPI_Debug("arg3 = [%p]",optionMsg.arg3);
        opt = atoi(optionMsg.arg3);
        sAPI_Free(optionMsg.arg3);
        switch(opt)
        {
            case SC_DEMO_FOR_NETWORK:
                sAPI_Debug("Come to the NetWork demo!");
                NetWorkDemo();
                break;

            case SC_DEMO_FOR_SIMCARD:
                SimcardDemo();
                PrintfResp("Come to the SIMCARD demo\r\n");
                break;

            case SC_DEMO_FOR_SMS:
                sAPI_Debug("Come to the SMS demo!");
                SMSDemo();
                break;

            case SC_DEMO_FOR_UART:
                sAPI_Debug("Come to the Uart demo!");
                UartDemo();
                break;
#ifndef AT_COMMAND_SUPPORT
            case SC_DEMO_FOR_USB:
                PrintfResp("\r\nThere's no UI demo for USB.\r\n");
                break;
#endif
            case SC_DEMO_FOR_GPIO:
                sAPI_Debug("Come to the GPIO demo!");
                GpioDemo();
                break;

            case SC_DEMO_FOR_PMU:
                PrintfResp("\r\nCome to the PMU demo!\r\n");
                    PMUDemo();
                break;

            case SC_DEMO_FOR_I2C:
                sAPI_Debug("Come to the I2C demo!");
                I2cDemo();
                break;
#ifdef FEATURE_SIMCOM_AUDIO
            case SC_DEMO_FOR_AUDIO:
                sAPI_Debug("Come to the FileSystem demo!");
                AudioDemo();
                break;
#endif
```

```
            case SC_DEMO_FOR_FILE_SYSTEM:
                sAPI_Debug("Come to the FileSystem demo!");
                FsDemo();
                break;

            case SC_DEMO_FOR_TCP_IP:
                PrintfResp("Come to the Tcpip demo!");
                TcpipDemo();
                break;

#ifdef FEATURE_SIMCOM_HTTP
            case SC_DEMO_FOR_HTTP_HTTPS:
                sAPI_Debug("Come to the Http demo!");
                HttpsDemo();
                break;
#endif
#ifdef FEATURE_SIMCOM_FTPS
            case SC_DEMO_FOR_FTP_FTPS:
                sAPI_Debug("Come to the Ftp demo!");
                FtpsDemo();
                break;
#endif
#ifdef FEATURE_SIMCOM_MQTT
            case SC_DEMO_FOR_MQTT_MQTTS:
                sAPI_Debug("Come to the MQTT demo!");
                MqttDemo();
                break;
#endif
#ifdef FEATURE_SIMCOM_MSSL
            case SC_DEMO_FOR_SSL:
                sAPI_Debug("Come to the ssl demo!");
                SslDemo();
                break;
#endif

            case SC_DEMO_FOR_OTA:
                PrintfResp("\r\nCome to FOTA demo.\r\n");
                FotaDemo();
                break;

            case SC_DEMO_FOR_LBS:
                sAPI_Debug("Come to the LBS demo!");
                LbsDemo();
                break;
#ifdef FEATURE_SIMCOM_NTP
            case SC_DEMO_FOR_NTP:
                sAPI_Debug("Come to the NTP demo!");
                NtpDemo();
                break;
#endif
#ifdef FEATURE_SIMCOM_HTP
            case SC_DEMO_FOR_HTP:
                sAPI_Debug("Come to the HTP demo!");
                HtpDemo();
                break;
#endif
#ifdef FEATURE_SIMCOM_TTS
            case SC_DEMO_FOR_TTS:
                sAPI_Debug("Come to the TTS demo!");
                TTSDemo();
                break;
#endif
            case SC_DEMO_FOR_CALL:
                #ifdef FEATURE_SIMCOM_CALL
                sAPI_Debug("Come to the CALL demo!");
                CALLDemo();
                #endif
                break;

            case SC_DEMO_FOR_WIFI:
                sAPI_Debug("Come to the WIFI demo!");
                WIFIDemo();
                break;
#if defined(FEATURE_SIMCOM_GPS) || defined(JACANA_GPS_SUPPORT)
            case SC_DEMO_FOR_GNSS:
                sAPI_Debug("Come to the GNSS demo!");
                GNSSDemo();
                break;

            case SC_DEMO_FOR_LCD:
                sAPI_Debug("Come to the LCD demo!");
#ifdef SIMCOM_LCD_SUPPORT
                LcdDemo();
#endif
                break;
#else
            case SC_DEMO_FOR_LCD:
                sAPI_Debug("Come to the LCD demo!");
#ifdef SIMCOM_LCD_SUPPORT
                LcdDemo();
#endif
                break;
```

```
#endif
            case SC_DEMO_FOR_RTC:
                sAPI_Debug("Come to the RTC demo!");
                RTCDemo();
                break;
            case SC_DEMO_FOR_FLASH:
                sAPI_Debug("Come to the FLASH demo!");
                FlashRWdemo();
                     break;
#ifdef FEATURE_SIMCOM_FS_OLD
            case SC_DEMO_FOR_FILE_SYSTEM_OLD:
                sAPI_Debug("Come to the FileSystem Compatible API demo!");
                //Fs2Demo();
                break;
#endif
            case SC_DEMO_FOR_SPI:
                sAPI_Debug("Come to the SPI demo!");
                SpiDemo();
                break;
            case SC_DEMO_FOR_CAM:
                sAPI_Debug("Come to the CAM demo!");
#ifdef SIMCOM_CAMERA_SUPPORT
                CamDemo();
#endif
                break;
#ifdef BT_SUPPORT
            case SC_DEMO_FOR_BLE:
                BLEDemo();
                break;
#endif
            case SC_DEMO_FOR_SPI_NOR:
                sAPI_Debug("Come to the SPI Nor flash demo!");
                SpiNorDemo();
                break;

            case SC_DEMO_FOR_APP_DOWNLOAD:
                sAPI_Debug("Come to the app download demo!");
                AppDownloadDemo();
                break;

            case SC_DEMO_FOR_APP_UPDATE_FOR_NVM:
                sAPI_Debug("Come to the app update for nvm demo!");
                AppUpdateDemo();
                break;

            case SC_DEMO_FOR_PWM:
                sAPI_Debug("Come to the app pwm demo!");
                PwmDemo();
                break;

#ifdef FEATURE_SIMCOM_POC
            case SC_DEMO_FOR_POC:
                sAPI_Debug("Come to the app poc demo!");
                POCDemo();
#endif

            default :
                break;
        }
    }
}

void sAPP_SimcomUIDemo(void)
{
    SC_STATUS status;
    status = sAPI_MsgQCreate(&simcomUI_msgq, "simcomUI_msgq", sizeof(SIM_MSG_T), 12, SC_FIFO);
    if(SC_SUCCESS != status)
    {
        sAPI_Debug("msgQ create fail");
    }
#ifdef FEATURE_SIMCOM_MQTT
     status = sAPI_MsgQCreate(&urc_mqtt_msgq_1, "urc_mqtt_msgq_1", (sizeof(SIM_MSG_T)), 4, SC_FIFO);          //msgQ for
subscribed data transfer
     if(status != SC_SUCCESS)
    {
        sAPI_Debug("message queue creat err!\n");
    }
    printf("%s,sTask_SimcomUIProcesser",__func__);
#endif

    void *simcomUIProcesserStack = (void *)malloc(30 * 1024);
    if (!simcomUIProcesserStack)
    {
        printf("malloc simcomUIProcesserStack fail!");
        return;
    }
    status = sAPI_TaskCreate(&simcomUIProcesser,simcomUIProcesserStack,1024 *
30,100,"simcomUIProcesser",sTask_SimcomUIProcesser,(void *)0);
    if(SC_SUCCESS != status)
    {
        sAPI_Debug("task create fail");
    }
```

```
}
```