Examples of WIFI

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Example of WIFI

Revision history

Revision	Date	Description
01.01	2017.03.06	Initial release
01.02	2017.03.21	Add Result log
02.00	2017.04.14	Add use start_AP_scan

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Example of WIFI

1. Introduction

1.1 Purpose

The example of WIFI documentation includes descriptions to help you understand and develop WIFI in the module. It is provided for development purposes only and should always be tested with your design.

1.2 Build Target

- project file for uVersion

development₩sigfox_cfg2₩source₩pca10040₩s132₩arm5_no_packs₩ sigfox_cfg2_pca10040_s132.uvprojx (use Keil_v5)

development₩sigfox_cfg2₩source₩pca10040₩s132₩arm5_no_packs₩ sigfox_cfg2_pca10040_s132_gcc.uvprojx (use gcc)

- Example C files

development₩sigfox_cfg2₩source₩ cfg_examples.c

- Example feature defines

```
#define CFG_EXAMPLES_TYPE_NONE          0
#define CFG_EXAMPLES_SCAN_TWO_BSSID     1
#define CFG_EXAMPLES_SCAN_FILTERED      2

#define CFG_EXAMPLES_TYPE_DEF CFG_EXAMPLES_TYPE_NONE    //modify here
```

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2. Common Initialize

```
#include "cfg_wifi_module.h"
.....
cWifi_resource_init();     // Initalize resource for WIFI module
cWifi_prepare_start();   // prepare for WIFI module
.....
```

3. Setting functions

```
// Function for wifi scan time.
// param[in]     sec of the scan time    default value is 5 sec
void cWifi_set_retry_time(unsigned int retry_time_sec);

// Function for wifi test mode.
// param[in]     test mode enable for always on wifi power
void cWifi_set_test_mode(bool test_enable);
```

4. WIFI scan request examples

4.1 get two RSSIDs(Mac Address, Sorted by RSSI)

```
#define CFG_EXAMPLES_TYPE_DEF CFG_EXAMPLES_SCAN_TWO_BSSID

int wifi_result;
uint8_t *bssidBuf;
CDBG_mask_clear(CDBG_NUM2MASK(CDBG_WIFI_INFO)); //disable wifi info log
cWifi_resource_init();   // Initalize resource for WIFI module
cWifi_prepare_start();   // prepare for WIFI module
wifi_result = cWifi_ap_scan_req();
if(wifi_result == CWIFI_Result_OK)
{
    while(!(!cWifi_is_scan_state() && !cWifi_bus_busy_check()));   //wait scan
    wifi_result = cWifi_get_BSSIDs_bufPtr(&bssidBuf);
    if(wifi_result == CWIFI_Result_OK)
    {
        //scan success bssidBuf[0]~[5]:mac 1, bssidBuf[6]~[11]:mac 2 -> sorted by RSSI
        cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE started!₩n");
    }
    else if(wifi_result == CWIFI_Result_NoData)
    {
        //No AP found
```

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```
            cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE NoData!₩n");
        }
        else
        {
            //scan fail
            cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
        }
}
else
{
    // WIFI not available or busy
    cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
}
```

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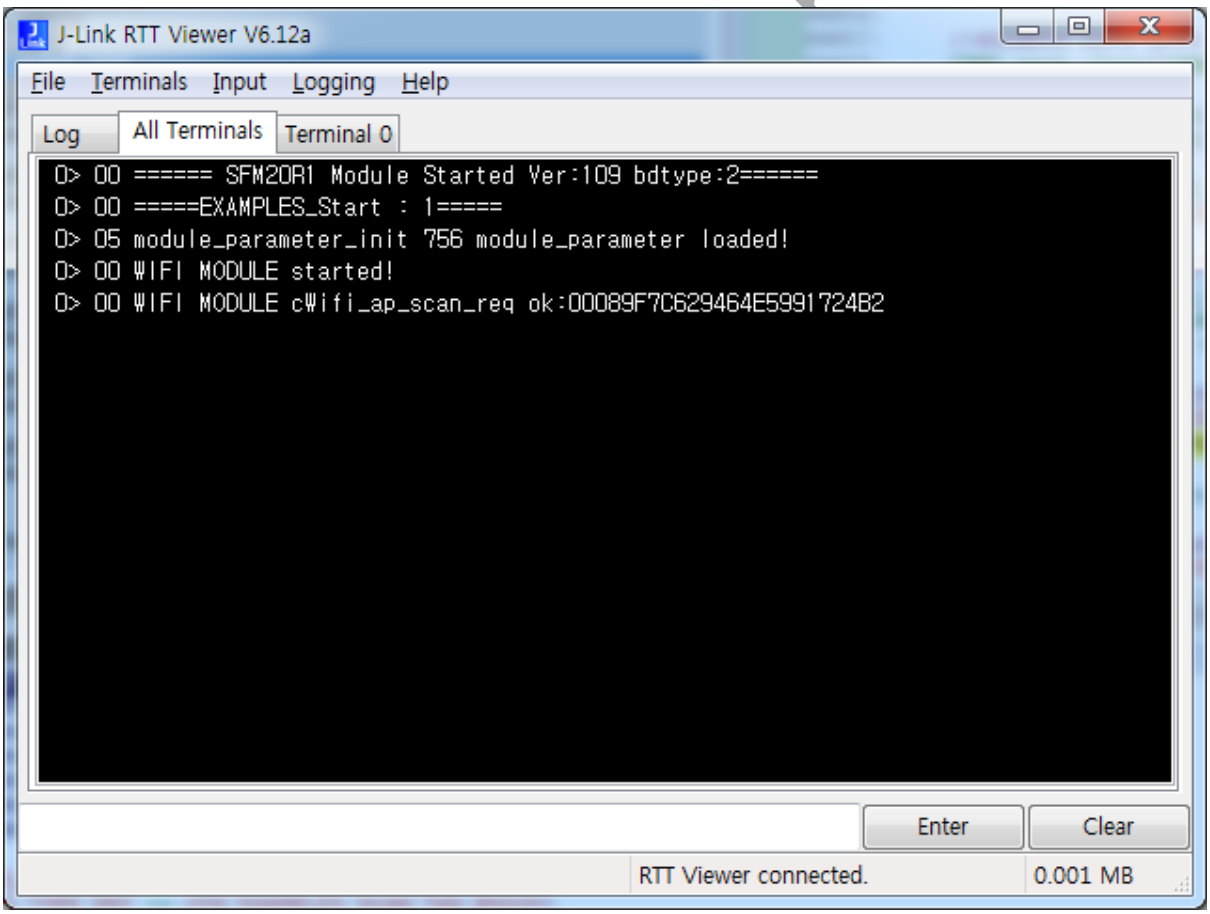
Result



4.2 get one RSSID (Filtered by prefix string)

```
#define CFG_EXAMPLES_TYPE_DEF CFG_EXAMPLES_SCAN_FILTERED

int wifi_result;
uint8_t *bssidBuf;
const char *prefixSSID = "OFFICE";

CDBG_mask_clear(CDBG_NUM2MASK(CDBG_WIFI_INFO)); //disable wifi info log
cWifi_resource_init();   // Initalize resource for WIFI module
cWifi_prepare_start();   // prepare for WIFI module
wifi_result = cWifi_ap_get_available_first_BSSID("OFFICE");
if(wifi_result == CWIFI_Result_OK)
{
    cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE started! prefix SSID:%s₩n", prefixSSID);
    while(!(!cWifi_is_scan_state() && !cWifi_bus_busy_check()));   //wait scan
    wifi_result = cWifi_get_BSSIDs_bufPtr(&bssidBuf);
    if(wifi_result == CWIFI_Result_OK)
    {
        //scan success bssidBuf[0]~[5]:mac 1
        cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE cWifi_ap_get_available_first_BSSID ok:");
        cDataDumpPrintOut(CDBG_MAIN_LOG, bssidBuf, (CWIFI_BSSID_CNT*CWIFI_BSSID_SIZE));
    }
    else if(wifi_result == CWIFI_Result_NoData)
    {
        //No AP found
        cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE NoData!₩n");
    }
    else
    {
        //scan fail
        cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
    }
}
else
{
    // WIFI not available or busy
    cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
}
```

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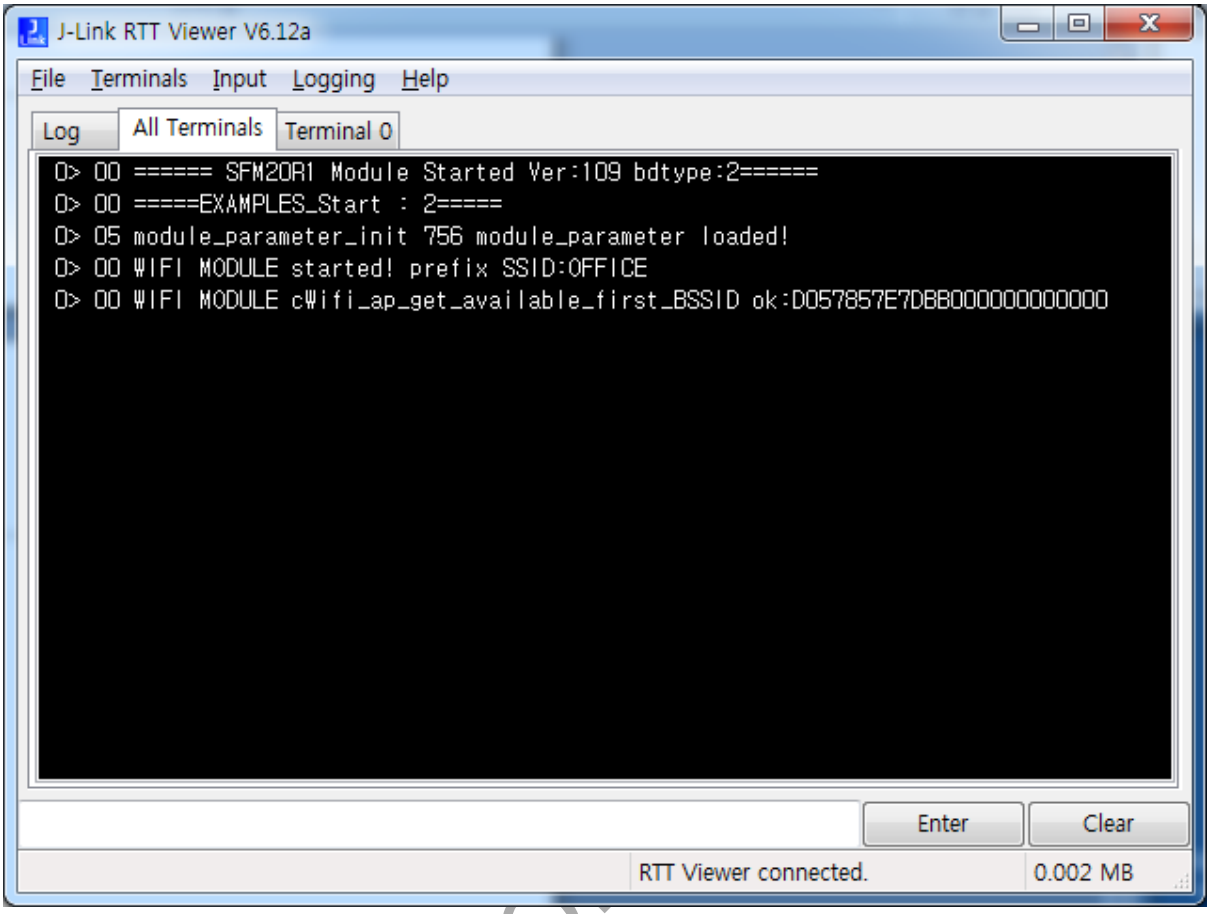
Result



5. WIFI scan example project

5.1 Build Target

- project file for uVersion

development₩sigfox_cfg2₩source_wifi_example₩pca10040₩s132₩arm5_no_packs₩wifi_example_keil.uvprojx (use Keil_v5)

development₩sigfox_cfg2₩source_wifi_example₩pca10040₩s132₩arm5_no_packs₩wifi_example_gcc.uvprojx (use gcc)

- Example C file

development₩sigfox_cfg2₩source_wifi_example₩WIFI_example_main.c

- Source

```
volatile uint32_t err_code;
int wifi_result;
uint32_t get_cnt;
uint8_t *ssid;
int32_t *rssi;
uint8_t *bssid;
```

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```
int i;

//timer Initialize
APP_TIMER_INIT(APP_TIMER_PRESCALER, APP_TIMER_OP_QUEUE_SIZE, false);

//sd init
ble_stack_init_minimal();

//main tick timer init (optional)
err_code = app_timer_create(&m_main_timer_id, APP_TIMER_MODE_REPEATED, main_schedule_timeout_handler_examples);
APP_ERROR_CHECK(err_code);
err_code = app_timer_start(m_main_timer_id, APP_TIMER_TICKS(APP_MAIN_SCHEDULE_MS, APP_TIMER_PRESCALER), NULL);
APP_ERROR_CHECK(err_code);
//disable wifi info log
CDBG_mask_clear(CDBG_NUM2MASK(CDBG_WIFI_INFO));

//Initalize resource for WIFI module
wifi_drv_init();

set_scan_interval(10);
wifi_result = start_AP_scan();

if(wifi_result == CWIFI_Result_OK)
{
    wifi_result = get_AP_scanResult(&get_cnt, &ssid, &rssi, &bssid);
    if(wifi_result == CWIFI_Result_OK)
    {
        cPrintLog(CDBG_MAIN_LOG, "AP_scanResult ok! ap cnt: %d₩n", get_cnt);
        for(i=0; i<get_cnt; i++)
        {
            cPrintLog(CDBG_MAIN_LOG, "%d : %s %d %02x:%02x:%02x:%02x:%02x:%02x₩n",
                i+1, &ssid[CWIFI_SSID_SIZE*i], rssi[i],
                bssid[(CWIFI_BSSID_SIZE*i)+0], bssid[(CWIFI_BSSID_SIZE*i)+1], bssid[(CWIFI_BSSID_SIZE*i)+2],
                bssid[(CWIFI_BSSID_SIZE*i)+3], bssid[(CWIFI_BSSID_SIZE*i)+4], bssid[(CWIFI_BSSID_SIZE*i)+5] );
        }
    }
    else if(wifi_result == CWIFI_Result_NoData)
    {
        cPrintLog(CDBG_MAIN_LOG, "WIFI MODULE NoData!₩n");
    }
    else
    {
        cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
    }
}
else
{
    cPrintLog(CDBG_MAIN_LOG, "Not Availalble Wifi Module!₩n");
}
```

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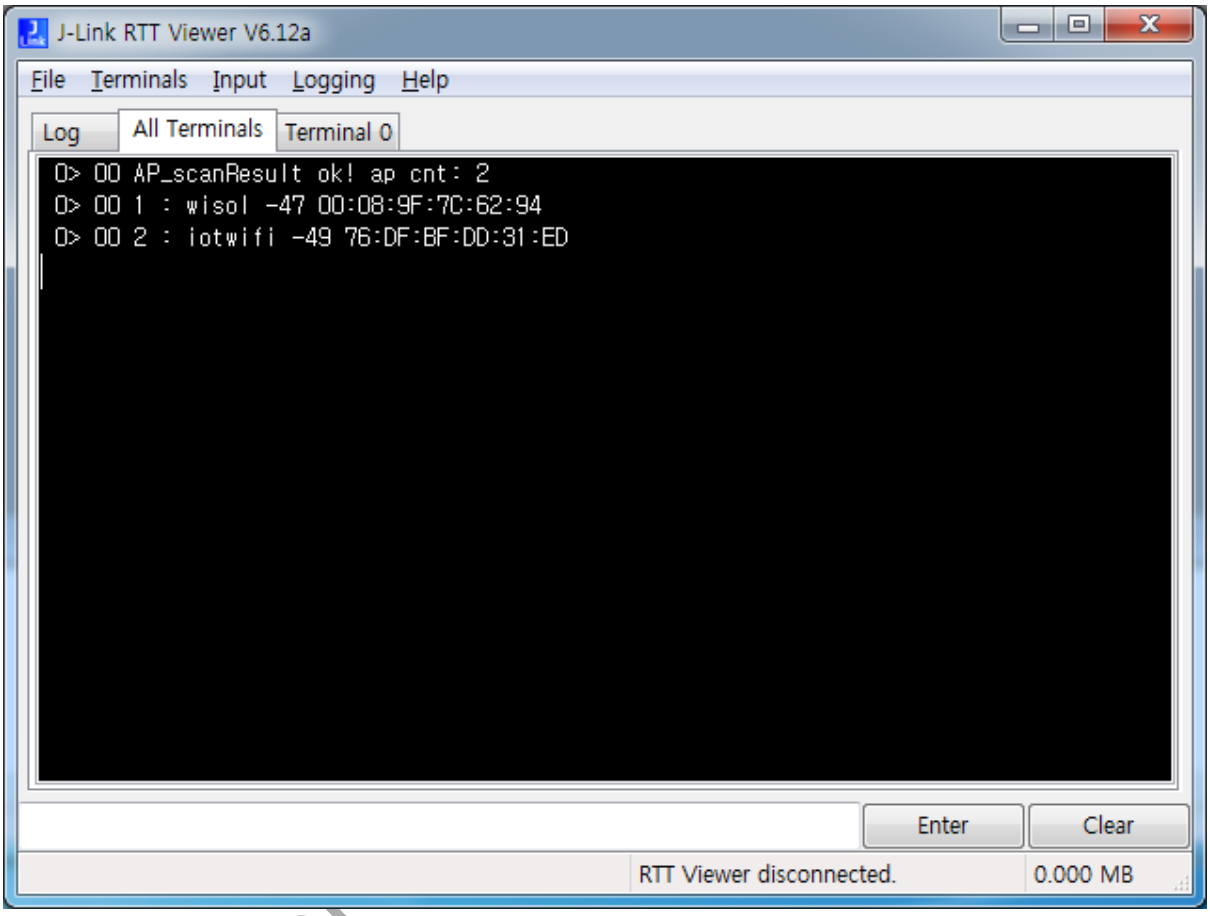
```
while(1)
{
    sd_app_evt_wait();
}
```

- Result



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