

BLE Immediate Alert Client Application User Guide Version 0.1

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This project is applicable to all the WiSeConnect variants like WiSeConnect Plus, WiSeMCU and WYZBEE. The term WiSeConnect refers to its appropriate variant.

Application Overview:

This application demonstrates how a GATT client device accesses a GATT server device.

Setup required:

1. Windows PC with Cocoon IDE.
2. WiSeConnect module.
3. Smartphone/Tablet/ WiSeConnect module .

Description:

WiSeConnect module acts as a GATT client device in Central mode. Smartphone acts as a GATT server device in peripheral mode.

Set up WiSeConnect module to act as GATT client by running the GATT client application. After connecting with the GATT Server device, actual immediate alert notification functionality will be active. In this application, when a peer device moves beyond certain range (can be configured by using the RSSI threshold) of RSSI values, it gives an alert notification to the user and is demonstrated by glowing LED with Yellow (Moving far) and Green (Moving near) colors.

Details of the Application:

The application (running in WiSeConnect module) includes following steps.

1. Make WiSeConnect module to act as GATT client device.
2. Connect the WiSeConnect module with the remote device.

Configuring the Application:

- Open **sapis/include/rsi_wlan_config.h** file and update/modify following macros,

```
#define CONCURRENT_MODE          RSI_DISABLE
#define RSI_FEATURE_BIT_MAP      FEAT_SECURITY_OPEN
#define RSI_TCP_IP_BYPASS        RSI_DISABLE
#define RSI_TCP_IP_FEATURE_BIT_MAP TCP_IP_FEAT_DHCPV4_CLIENT
#define RSI_CUSTOM_FEATURE_BIT_MAP 0
#define RSI_BAND                  RSI_BAND_2P4GHZ
```

- Configure the below macros in the Application file.
 1. RSIBLE_REMOTE_BD_ADDRESS- The address of the remote device to connect.
 2. BT_GLOBAL_BUFF_LEN – Number of bytes required for the Application and the Driver.
 3. RSI_BLE_RSSI_THRESHOLD_VALUE- To set the RSSI threshold for immediate alert service.
 4. RSI_BLE_CHAR_SERV_UUID- standard attribute type of characteristic service
 5. RSI_BLE_CLIENT_CHAR_UUID- standard attribute type of client characteristic configuration descriptor
 6. RSI_BLE_NEW_SERVICE_UUID- To use this service present in GATT server LE device.
 7. RSI_BLE_ATTRIBUTE_1_UUID- To use this characteristic present under above service in GATT server LE device.
 8. RSI_BLE_MAX_DATA_LEN- The maximum attribute value length.
 9. MAX_NUMBER_OF_SCAN_LIST- The maximum number of devices to be scanned in a list
 10. RSI_BLE_ADV_REPORT_EVENT- Event number to set the advertisement report case.
 11. RSI_BLE_CONNN_EVENT- Event number to set the remote device connected case.
 12. RSI_BLE_DISCONN_EVENT- Event number to set the remote device disconnected case.
 13. RSI_BLE_GATT_WRITE_EVENT- Event number to set the GATT write event case.
 14. RSI_BLE_GATT_PROFILE- Event number to set the GATT profile case.
 15. RSI_BLE_GATT_CHAR_SERVICES- Event number to set the GATT characteristic services case.
 16. RSI_BLE_APP_NAME- To set the local device name.
- Following are the **non-configurable** macros in the application.

1. RSI_BLE_ATT_PROPERTY_READ – Used to set read property to an attribute value.
2. RSI_BLE_ATT_PROPERTY_WRITE - Used to set write property to an attribute value.
3. RSI_BLE_ATT_PROPERTY_NOTIFY - Used to set notify property to an attribute value.

Executing the Application:

1. Connect WiSeConnect module to the Windows PC running Cocoon IDE.
2. Configure the macros in the file located at **sapis/examples/ble/immediate_alert_client /immediate_alert_client.c**
3. Compile and launch the application.
4. After the program gets executed, WiSeConnect module would be in scanning state.
5. Power on GATT server LE device, which has the support for immediate alert service.
6. WiSeConnect module can now accept the advertising reports from server and can issue connect.
7. After connecting, application use immediate alert service in server and depending on rssi value, a notification will be sent to user.