

BLE_dual_role_SPP Slave Test Procedure

User guide

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About this Document

This document is an Preliminary version of BLE_dual_role_SPP Slave document provided to select customers under a Non-Disclosure Agreement (NDA).

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1 Application Overview

1.1 Overview

This application demonstrates how to configure the device for BLE slave and master mode, also in BT Slave mode and establish SPP profile connection with remote Master device using secure simple pairing (SSP) and data exchange between two devices using SPP profile along with sniff mode. In this Application, Redpine module configures in Slave mode and waits to accept SPP profile level connection using secure simple pairing (SSP) from remote device. After successful SPP connection, Application will wait for data to receive from connected remote device. If remote device sends data to Redpine module, it will receive the data and send back the same data to remote device using SPP profile.

1.2 Sequence of Events

This Application explains user how to:

- Configure Redpine module to act as BLE Slave and Master
- Configure Redpine module to act as BT Slave
- Configure device to secure simple pairing (SSP)
- Configure device in discoverable and connectable mode
- Connect to 3 BLE slaves
- Connect to 2 BLE masters
- Accept SPP level connection from the Smartphone
- Receive data from Smart phone
- Loop back the received messaged

2 Application Setup

The WiSeConnect parts require that the host processor is connected to the WiSeConnect using either SPI, UART or USB host interface. The host processor firmware needs to properly initialize the selected host interface. The Redpine Wireless SAPI framework provides necessary HAL APIs to enable variety of host processors. The WiSeMCU parts offer integrated wireless connectivity and does not require host interface initialization.

2.1 WiSeMCU / WiSeConnect based Setup Requirements

- Windows PC with KEIL or IAR IDE in case of WiSeMCU
- Windows / Linux PC with Host interface (UART/ USB-CDC/ SPI/ USB) in case of WiSeConnect
- Redpine module
- BT master device

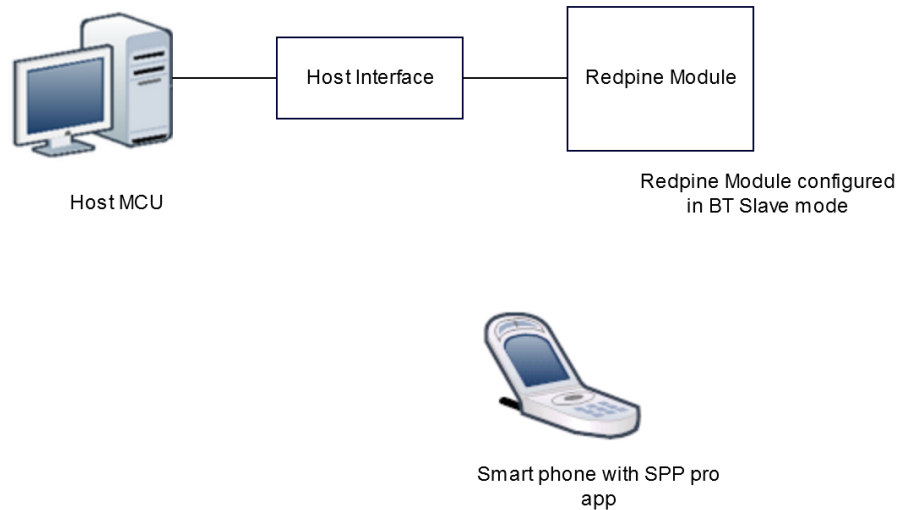


Figure 1: Setup Diagram

3 Configuration and Execution of the Application

3.1 Configuring the Application

1. Open *rsi_bt_config_COEX_MAX_2.h* file and update/modify following macros,
RSI_BT_LOCAL_ANME refers name of the Redpine module to appear during scanning by remote devices.

```
#define RSI_BT_LOCAL_NAME "SPP_SLAVE"
```

PIN_CODE refers four bytes string required for pairing process.

```
#define PIN_CODE "4321"
```

Following are the **non-configurable** macros in the application.

BT_GLOBAL_BUFF_LEN refers to the number of bytes required by the application and the driver.

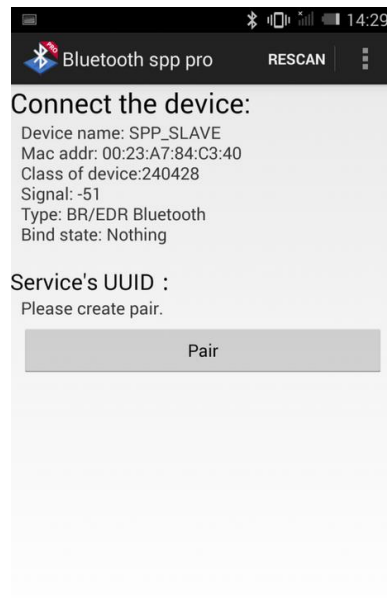
```
#define BT_GLOBAL_BUFF_LEN 10000
```

3.2 Executing the Application

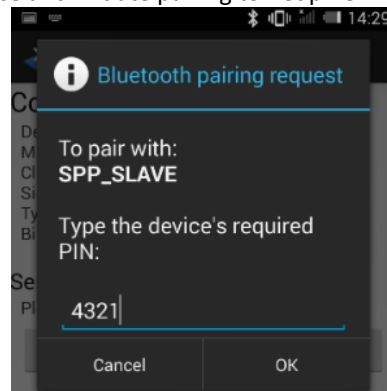
1. After the program gets executed, Redpine module initializes the SPP profile and waits for the incoming connection.



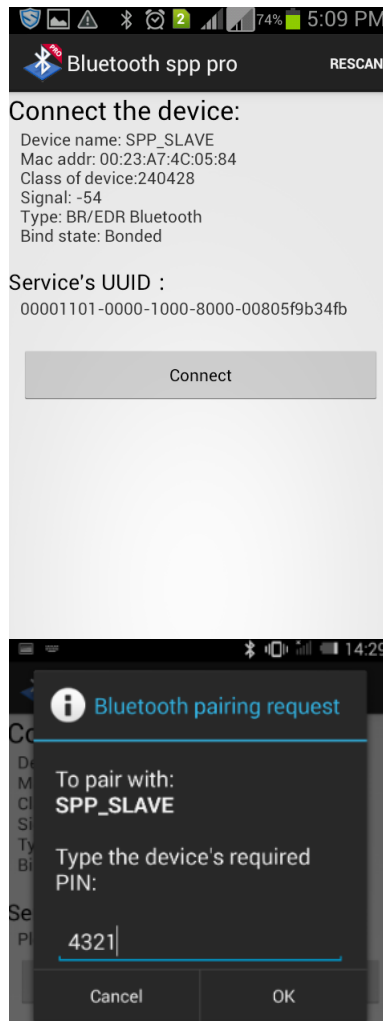
2. Open Bluetooth SPP pro app on mobile and do the scan until Redpine module (Ex: "SPP_SLAVE") gets present in the scan list.



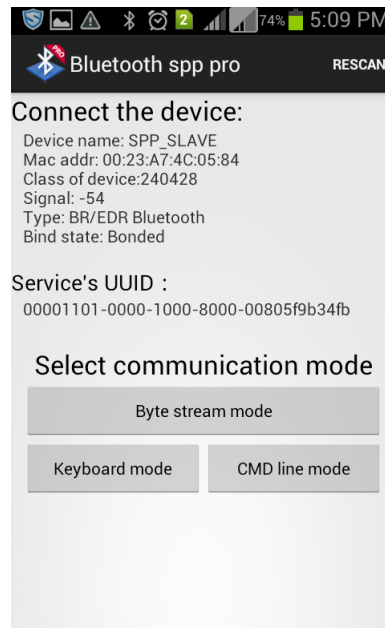
3. After the successful scan, select the device and initiate pairing to Redpine module.



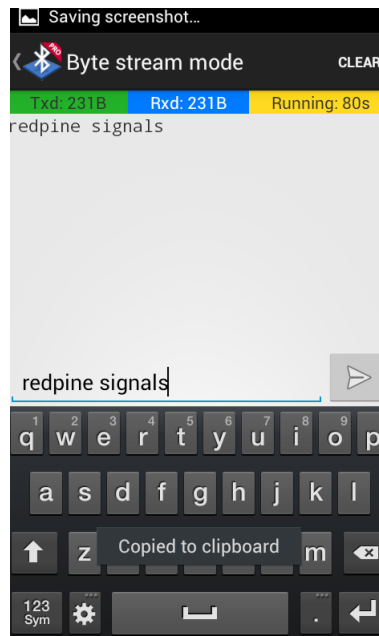
4. After initiating pairing, Pairing request will pop-up at smartphone side and issue secret key which is given at Redpine module (PIN_CODE) side.



5. After successful pair, initiate SPP connection to Redpine module and give the secret key for receiving pairing request at remote device side.



6. After successful SPP connection, select "Byte stream mode" to send and receive the data.



7. Send some data (Ex: "redpine signals") from the remote device to Redpine device and same data will send back from Redpine device to remote device. Please refer the given image for sending and receiving data from the remote device.