# Master BT A2DP Source with AVRCP Example

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# 1 Application Overview

## 1.1 Overview

A2DP source with AVRCP application is used to transfer the PCM data to remote device (A2DP sink device) in SBC encoded format and acts as a AVRCP target.

## 1.2 Sequence of Events

Applications explains user how to:

- Configure Redpine device in discoverable and connectable mode
- Configure the remote device in discoverable and connectable mode
- Initialize the physical level connection with remote device
- Initialize A2DP profile level connection with remote device
- Initialize AVRCP profile level connection with remote device
- Transfer the Audio data to the remote device.
- Pause and Play of Audio data will controlled by AVRCP profile based on the Remote device inputs.

# 2 Application Setup

The WiSeConnect parts require that the host processor is connected to the WiSeConnect using 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 Setup Requirements

- Redpine module
- BT Remote device(A2DP sink device)
- Host platform

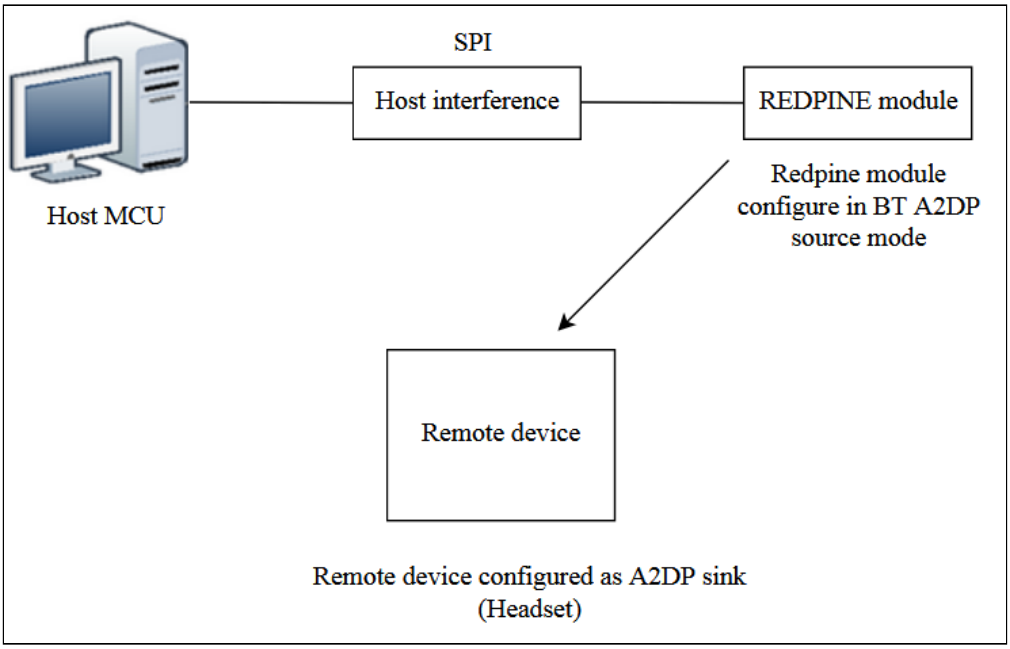


**Figure 1: Setup Diagram**

# 3 Configuration and Execution of the Application

## 3.1 Configuring the Application

1. Open ***rsi_a2dp_source_avrcp.c*** file and update/modify following macros,
   **RSI_BT_LOCAL_NAME** refers name of the Redpine module to appear during scanning by remote devices.

```
#define RSI_BT_LOCAL_NAME                                   "A2DP_AVRCP_SOURCE"
```

**RSI_BT_REMOTE_BD_ADDR** refers BD address of the Remote device to which redpine device has to connect.

```
#define RSI_BT_REMOTE_BD_ADDR                               "00:1E:7C:25:E9:6D"
```

**PIN_CODE** refers four bytes string required for pairing process.

```
#define PIN_CODE                                            "0000"
```

```
#define A2DP_BURST_MODE                                     0
```

**RSI_AUDIO_DATA_TYPE** refers input audio file format. Select MP3_AUDIO for .mp3 format, PCM_AUDIO for .wav format, SBC_AUDIO for .sbc formate

```
#define PCM_AUDIO                                           1
#define SBC_AUDIO                                           2
#define MP3_AUDIO                                           3
#define RSI_AUDIO_DATA_TYPE                                 MP3_AUDIO
```

**RSI_AUDIO_DATA_SRC** refers audio source type. Select BIN_FILE, if we have audio files and ARRAY if file system is not supported in host, we can pass buffered data.

```
#define BIN_FILE                                             1
#define ARRAY                                                2
#define RSI_AUDIO_DATA_SRC                                   BIN_FILE
```

**BIN_FILE_PATH** refers input audio file path.

```
#define AUDIO_FILE_PATH                                    "mp3_samples.mp3"
```

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
```

```
#define A2DP_BURST_MODE                                    0
```

2. Open ***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_ENABLE
#define RSI_TCP_IP_FEATURE_BIT_MAP                         1
#define RSI_EXT_CUSTOM_FEATURE_BIT_MAP                     EXT_FEAT_256K_MODE
#define RSI_BAND                                           RSI_BAND_2P4GHZ
```

## 3.2 Executing the Application

1. Keep Remote device in discoverable and connectable mode.
2. Run the A2DP source AVRCP application
3. Now Redpine module is trying to connect with Remote device.
4. After Successful connection, Redpine device will connect with remote device in A2DP level and AVRCP level
5. After Successful A2DP and AVRCP connections, Redpine device will transfer the Audio data to remote device .
6. Redpine device will also acts as AVRCP target to support the pause and play options from the A2DP sink device(Remote device)

**Note**

- This can be run in wise-connect mode in linux pc with USB Interface.