CC31xx SLS Transceiver Mode Application

Overview

This application provides a functional example that sends and receive data over a raw socket, which is not restricted by protocol-specific formatting in the way that TCP and UDP sockets are.
The sample code also highlight the built in ability to collect statistics regarding the packet that the CC3100 receives.

Application details

Two use-cases that are shown in the example code are:

- **TX Continuous:** In this mode, the SimpleLink device is able to communicate directly over the Wi-Fi PHY layer, .i.e. bypass the Network Stack, Wi-Fi driver and MAC layer. In this mode, the user is given with a full flexibility in building the transmitted packet.

 **Note:**: User is fully responsible for building the transmitted packet. If it is desired to build a proprietary protocol on top of Wi-Fi PHY layer, then the user should be familiar with Wi-Fi MAC layer specifications and build the packet appropriately.

- **RX Statistics:** Main purpose is to provide major medium statistics. Statistics provided by CC3100 are:
  - **Received Packets:** The number of packets sampled.
  - **Received FCS:** The number of packets received that had frame check sequence errors.
  - **Received PLCP:** The number of packets received that had physical layer convergence protocol errors.
  - **Average RSSI:** for Management/Other Packets: The average signal strength of the management packets or data packets.
  - **RSSI Histogram:** A histogram showing the signal strength of the different packets during the collection period.
  - **Rate Histogram:** A histogram of the transmission rate of the different packets. The rates corresponding to the numbers can be found in the RateIndex_e enum in the wlan.h header file.
  - **Sample Time:** The amount of time spent gathering samples.

For information on how to use visual studio or Eclipse to compile and run this application refer to 'Environment Setup' section of 'simplelink_studio_guide' in '<cc3100/>docs/app_notes' folder.

To use the CC3100 UART interface define 'SL_IF_TYPE_UART' in the project property. Change the COMM_PORT_NUM to first com port of FTDI.

Limitations/Known Issues

- TX continuous mode works in WiFi disconnected mode only
- The user needs to make sure the connection policy is not set to auto/fast mode
- Complete RX statistics can be obtained in disconnected mode only, however this feature can be used to get the get the RSSI of the AP the device is connected to.
- When sl_recv() API is invoked in transceiver mode, the SimpleLink device remains in RX mode and doesn't go to low power mode

Article Sources and Contributors

CC31xx SLS Transceiver Mode Application *Source*: http://ap-fpdsp-swapps.dal.design.ti.com/index.php?oldid=189185 *Contributors*: A0131814, Giansway

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