Chapter 5B: Classic Bluetooth – The Serial Port

Time: 3 Hours

At the end of this chapter you will understand the basics of Classic Bluetooth and how to create Classic Bluetooth projects on WICED devices.

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# Profiles

## HID

## OBEX

## PAN, FTP, Image Exchange

## IP

## Device Information

## Health

## Audio

### A2DP

### ACSB

### AVDTP

### AVRCP

### HFP

# NVRAM

# Connection Modes

In addition to the Active connection mode, there are three other modes, Sniff, Hold, and Park that a Slave can enter in order to save power.

## Sniff

In the Sniff state, a slave still listens but it does so at a reduced rate. This is applicable to ACL links but not to SCO or eSCO links due to the time-sensitive nature of data on those links. While not listening, a slave in Sniff may engage in activity on another piconet or it may enter a reduced power mode.

Sniff mode is not a general device mode, but applies to the default ACL logical transports. When in this mode the availability of these logical transports is modified by defining a duty cycle consisting of periods of presence and absence. Devices that have their default ACL logical transports in sniff mode may use the absent periods to engage in activity on another physical channel, or to enter reduced power mode. Sniff mode only affects the default ACL logical transports (i.e. their shared ACL logical transport), and does not apply to any additional SCO or eSCO logical transports that may be active. The periods of presence and absence of the physical link on the piconet physical channel is derived as a union of all logical transports that are built on the physical link.

Sniff subrating provides a mechanism for further reducing the active duty cycle, thereby enhancing the power-saving capability of sniff mode. Sniff subrating allows a Host to create a guaranteed access-like connection by specifying maximum transmit and receive latencies. This allows the basebands to optimize the low power performance without having to exit and re-enter sniff mode using Link Manager commands.

Note that broadcast logical transports have no defined expectations for presence or absence. A master device should aim to schedule broadcasts to coincide with periods of physical link presence within the piconet physical channel, but this is not always possible or practical. Repetition of broadcasts is defined to improve the possibilities for reaching multiple slaves without overlapping presence periods. However, broadcast logical transports cannot be considered to be reliable.

## Hold

In the Hold state, capacity is made available for other tasks such as scanning, paging, inquiry, or engaging with another piconet. The slave device can also enter a low power mode during Hold. ACL links do not support Hold mode but already established SCO or eSCO links do.

Prior to entering Hold, the master and slave agree on the length of time that the slave will remain in Hold mode.

Hold mode is not a general device mode, but applies to unreserved slots on the physical link. When in this mode, the physical link is only active during slots that are reserved for the operation of the synchronous link types SCO and eSCO. All asynchronous links are inactive. Hold modes operate once for each invocation and are then exited when complete, returning to the previous mode.

## Park

In the Park state, the slave does not participate on the piconet channel but remains synchronized to the channel.

Exercises

HID