**Debug UART**

Welcome back to Cypress Academy, WICED WiFi 101. In this video, we are going to use the built in UART to display information to a terminal window.

We will add information to the blinking LED project so let’s start by copying the 02\_blinkled project to 03\_blinkled\_print and updating the files as necessary.

In 03\_blinkled\_print.c we are going to add statements that will print LED OFF or LED ON whenever the LED changes.

The WICED SDK has built in macros to allow printing of debugging information of various types. The interface is configured and started by default.

A few of the available macros are WPRINT\_APP\_INFO, WPRINT\_APP\_ERROR and WPRINT\_APP\_DEBUG. There are many others which you can find in the file WICED/WWD/include/wwd\_debug.h. Only some of these are enabled by default – you can find and change which ones are enabled in file include/wiced\_defaults.h.

By default, WPRINT\_APP\_INFO is enabled, so we will use that one. The macro is defined such that it uses the same formatting as the printf function – you can use %d, %s, and so on to include and format output data.

There are two things to be aware of:

1. You MUST use two sets of parentheses in the function call.
2. If you don’t include the new line character – backslash n – the line will not print to the terminal until the buffer is full.

OK, so now that we have added the printing functions to our project, let’s program the kit.

Once it is programmed, we will open a terminal window. In this case, I’m using putty, but you can use any terminal emulator that you like. You may need to look in the device manager to determine the COM port that is being used by the kit. In my case it is COM8. The baud rate is 115200.

Once the terminal window opens, you will see that a message is printed every time the LED changes state.

Next, I’ll reset the device by pressing the reset button on the board. Notice that there is information printed even before the LED starts blinking. This information is printed by the wiced\_init function that we call at the beginning of our application.

In the next video, I’ll show you how to configure and initialize the UART to run at other speeds and to accept input commands from your computer.

You can post your comments and question in our Wifi developer community or as always you are welcome to email me at alan\_hawse@cypress.com or tweet me at @askioexpert with your comments, suggestions, criticisms and questions.