Lesson 2-5 Debug UART

Hi. I'm Alan Hawse. Welcome back to Cypress Academy, WICED WiFi 101. In this video, I'm going to use the built-in UART to display information to a terminal window. You know, printf debugging that we all like to do.

I will add information to the blinking LED project so let's start by copying the 02_blinkled project to a new project called 03_blinkled_print, and then making all of the necessary file updates as we have done in the previous example.

In 03_blinkled_print.c I am going to add statements that will print LED OFF or LED ON whenever the LED changes state.

The WICED SDK has built-in macros to allow printing of debugging information of various types. The interface is configured and started by default. (Remember those platform files we talked about earlier?)

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 and %s and %f and all those you know and love from printf.

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 – \n – the line will not print to the terminal until the internal buffer has gotten full. So you could print something and not see it.

OK, so now that I have added the printing functions to our project. Let's program the kit.

Once it's programmed, I 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 dev kit. The default baud rate is 115200.

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

Next, I'll reset the device by pressing the reset button on the board. Notice there's a bunch of information printed even before the LED starts blinking. This information is printed by the wiced_init function that I called at the beginning of the application.

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

You can post your comments and questions in our WiFi developer community on cypress.com, or, as always, you are welcome to email me at alan_hawse@cypress.com or tweet me at @askiotexpert. Thank You.