## (DEBUGGING) Setup and Run the Debugger

## Make Target

In order to use the debugger, create a new make target for an existing project so that *-debug* is added after the platform name (with no space) and remove run from the end of the target. That is, the target should look like:

<folder1>.[<folder2>...].<project>-<platform>-debug download

For example, the make target for the **scan** project from the folder snip would be:

snip.scan-CYW943907AEVAL1F -debug download

## Setup

Before starting the debugger, we need to verify that it is setup correctly. From WICED Studio, click the down arrow next to the green bug icon and select "Debug Configurations..." Then select "GDB Hardware Debugging > 43xxx\_Wi-Fi Debug\_Windows" from the window on the left. Setup the various tabs as shown in the figures below. You should only have to make changes on the "Startup" and "Common" tabs but all are shown here for completeness.

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<ul> <li>C/C++ Application</li> <li>C/C++ Attach to Application</li> <li>C/C++ Postmortem Debugger</li> <li>C/C++ Remote Application</li> </ul>	Project: 43xxx_Wi-Fi Browse	
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📀 Debug Configurations

Create, manage, and run configurations

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C 43xxx_Wi-Fi_Debug_Window Launch Group						
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	Load Image and Symbols					
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	Image offset (hex):					
	C Load symbols					
	Use project binary: Users\TEST\Documents\WICED-Studio-5.0\43xxc_Wi-Fi\build\eclipse_debug\last_I					
	O Use file: Workspace File System					
	Symbols offset (hex):					
	Runtime Options					
	Set program counter at (hex):					
	Set breakpoint at:					
	Run Commands					
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Note: the text in the box above is: *add-symbol-file build/eclipse\_debug/last\_built.elf 0x8000000* 

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<ul> <li>Launch Group</li> </ul>	₩ Debug	Default - inherited (Cp1252)
		Other ISO-8859-1
	Standard Input and Output	
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## Running the Debugger

Once the setup is complete, execute the make target to download the program to the board. Once the project is downloaded, click the down arrow next to the green bug icon and select "43xxx\_Wi-Fi Debug Windows". If you get a message asking if you want to open the debug perspective, click "Yes". You can click the check box to tell the tool to switch automatically in the future.



Note: If you get an error when trying to launch the debugger you may need to terminate an existing debug process. Open the Windows Task Manager, select the Process tab, click on "Image Name" to sort by the process name and terminate all "arm-none-eabi-gdb" processes.

Processes	Performance	App history	Startup	Users	Details	Services				
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End task

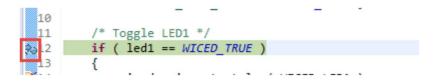
When the debugger starts the top banner will look like this:



<u>Click the "Resume" (shown in the figure above) until the program continues running</u> and the resume button stays grey. Notice that additional threads along with information about them appears in the debug window.

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You can toggle breakpoints by double clicking in the column to the left of the line numbers in the source code or you can right click and select "Toggle Breakpoint". The breakpoint symbol appears to the left of the line number as shown here.



Once a thread suspends due to a breakpoint you will see that line of code highlighted in green as shown above and you will see that the thread is suspended due to the breakpoint in the debug window as shown below.

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C:/Users/TEST/Documents/WICED-Studio-5.0/43xxx_Wi-Fi/tools/ARM_GNU/bin/Win32/arm-none-ea	ibi-gdb.exe (7.7)	

Click the red "Terminate" button to stop debugging. Once you terminate the debugger, you may want to switch back to the **C/C++** perspective by clicking on the button at the top right corner.

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