# ModusToolbox™ IDE Quick Start Guide

Version 1.1

ModusToolbox™ software is a set of tools that support Cypress device configuration and application development. These tools enable you to integrate Cypress devices into your existing development methodology.

This guide provides a quick walkthrough for creating a starter application with the ModusToolbox IDE, as well as programming the application onto a device and debugging the program.

Download/Install/Run ModusToolbox Software

Refer to the instructions in the *ModusToolbox Installation Guide*. After accepting the License Agreement and minimizing or closing the Welcome Page, the IDE opens a dialog to specify the workspace. Then, it opens with an empty Project Explorer by default.
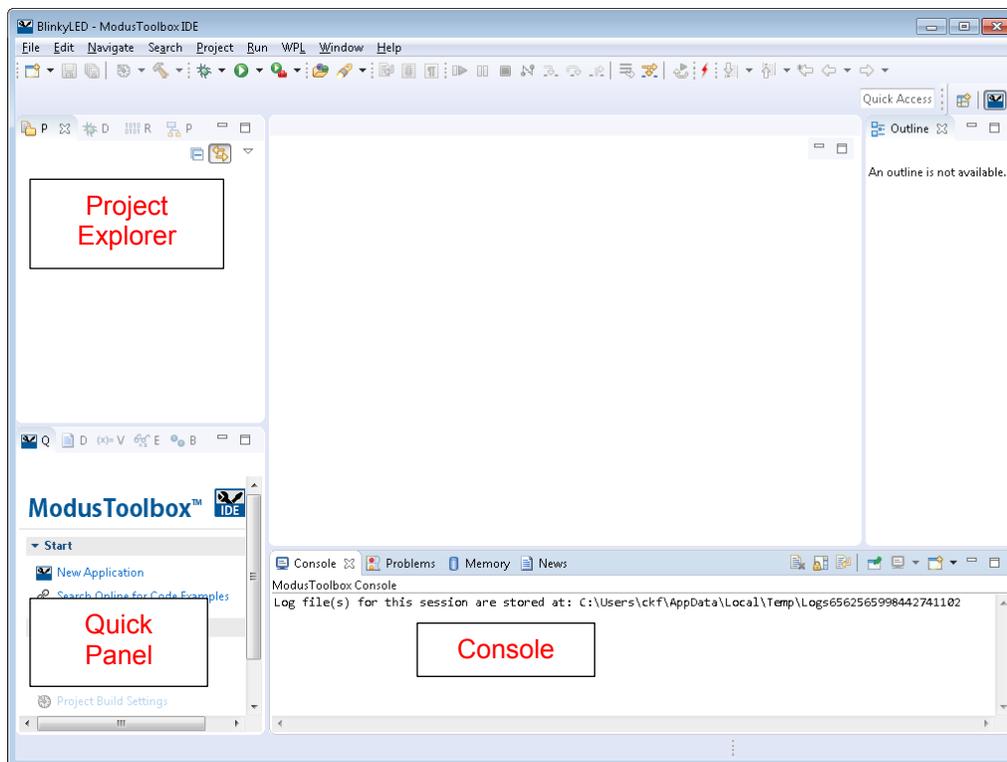

This guide focuses on three main areas of the IDE:

- The **Project Explorer** contains the application folders and files.

- The **Quick Panel** provides links to tool commands and documentation.

- The **Console** displays various messages when updating the application in some way (building, programming, etc.)
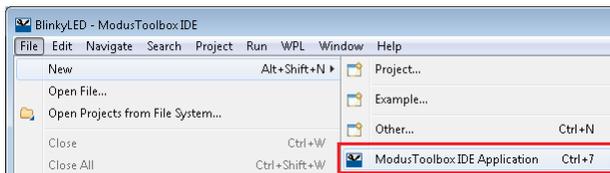
Create New Application

Creating an application includes several steps, as follows:

Step 1: Open New Application Dialog

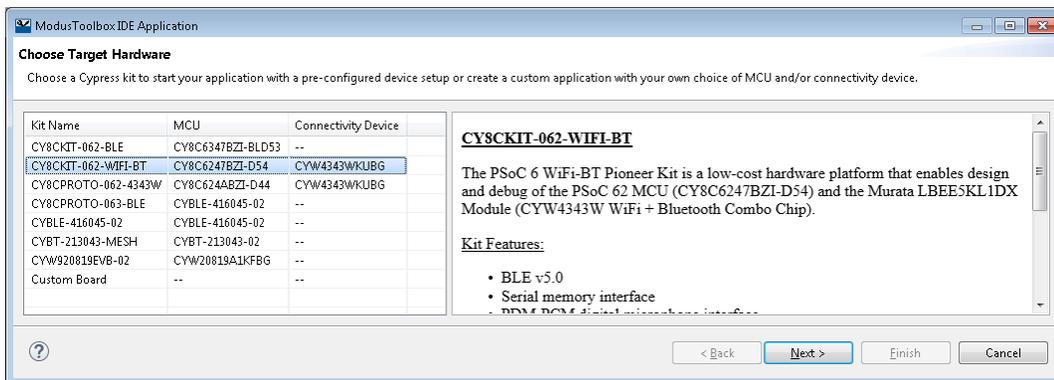In the **Quick Panel**, click the "New Application" link.
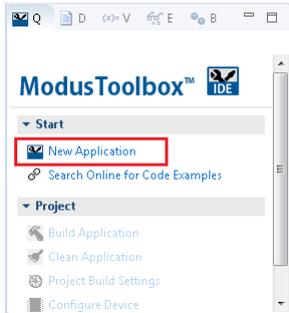
Or, select **File > New > ModusToolbox IDE Application**.

Step 2: Select Kit

On the ModusToolbox IDE Application dialog, click on the desired board number; see the description for it on the right. For this example, select the **CY8CKIT-062-WIFI-BT** kit.

Step 3: Select Starter Application

Click **Next >** to open the Starter Application page.

The starter applications demonstrate different features available on the kit. For this example, select **BlinkyLED** from the list. This application exercises the PSoC 6 MCU to blink an LED.
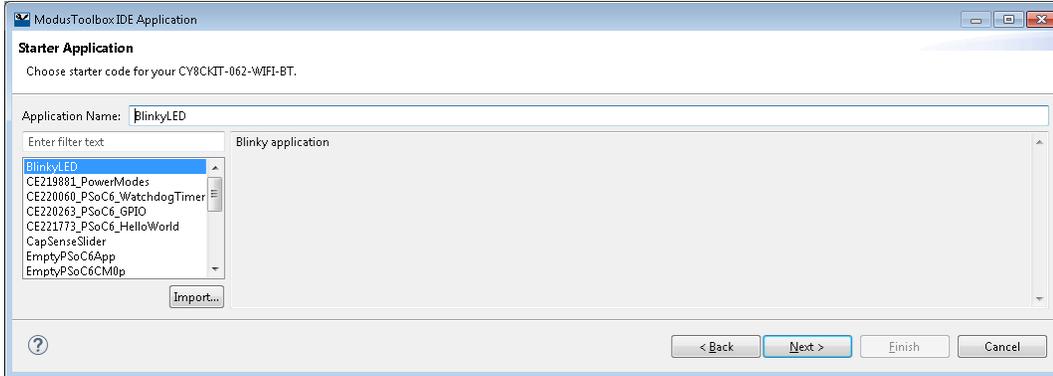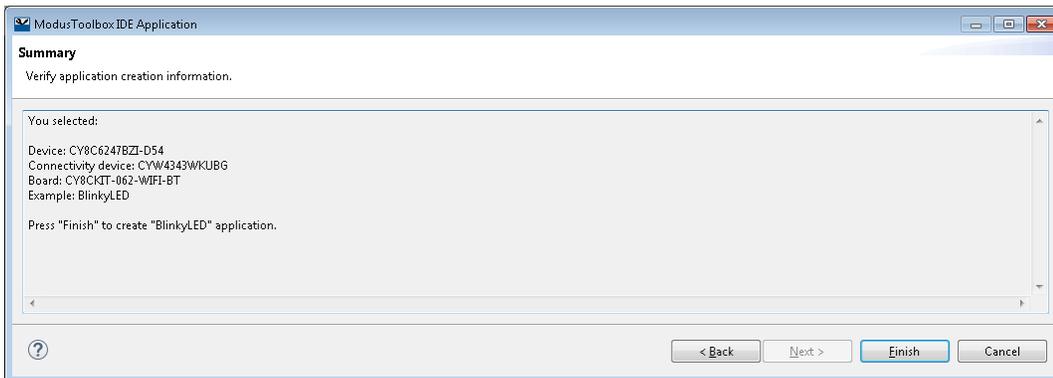
Type a name for your application or leave the default name. Do not use spaces in the application name. Also, do not use common illegal characters, such as:

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* . " ' / \ [ ] : ; | = ,
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Step 4: Review Details

Click **Next >** to open the Summary page. Review the application options to ensure they are correct.

Step 5: Create Application

Click **Finish** to start creating the application. After a few moments, the ModusToolbox IDE displays the application with the *<app-name>_mainapp* project in the Project Explorer.

Note PSoC 6 applications also include a *psoc6pdl_Cortex-M4* project folder, which makes available all of the source code necessary to interact with the peripherals.
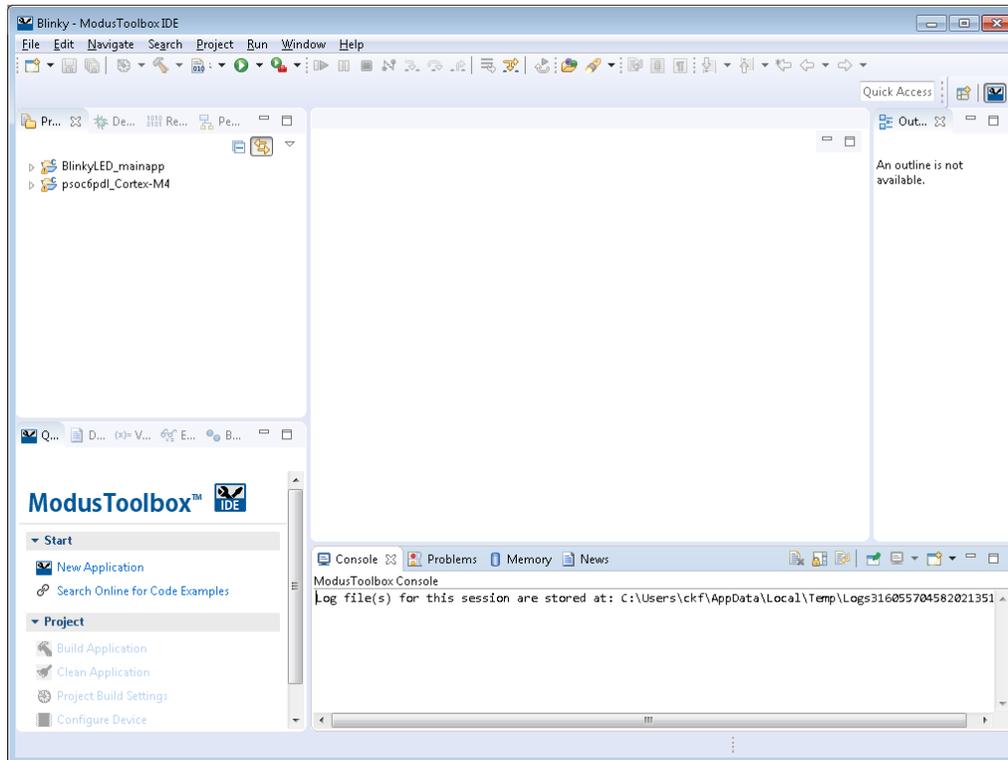

Add/Modify Application Code

Starter applications work as they are, and there is no need to add or modify code. However, if you want to update and change the starter application to do something else, open the appropriate file in the code editor by double-clicking it.

For a PSoC 6 application, expand the *<app-name>_mainapp\Source* folder.
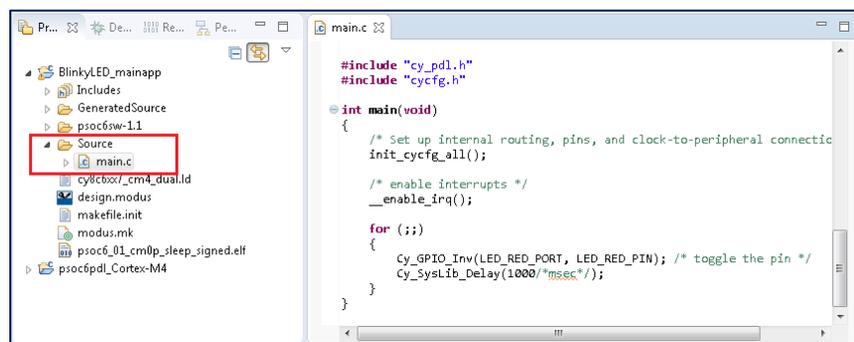
For a CYW20819 Bluetooth application, the *<app-name>.c* file is located in the *<app-name>_mainapp* folder.
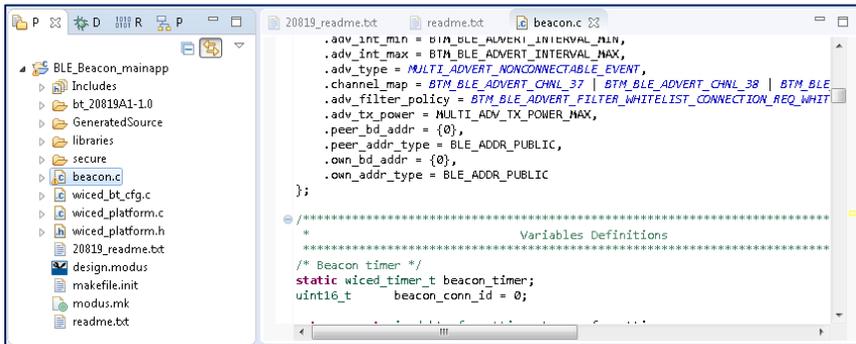
As you type into the file, an asterisk (*) will appear in the file's tab to indicate changes were made. The **Save/Save As** commands will also become available to select.

Configure Device Resources

To enable and configure peripherals, pins, clocks, etc., open the Device Configurator. Double-click the *design.modus* file. You can also click the "Configure Device" link in the **Quick Panel**.
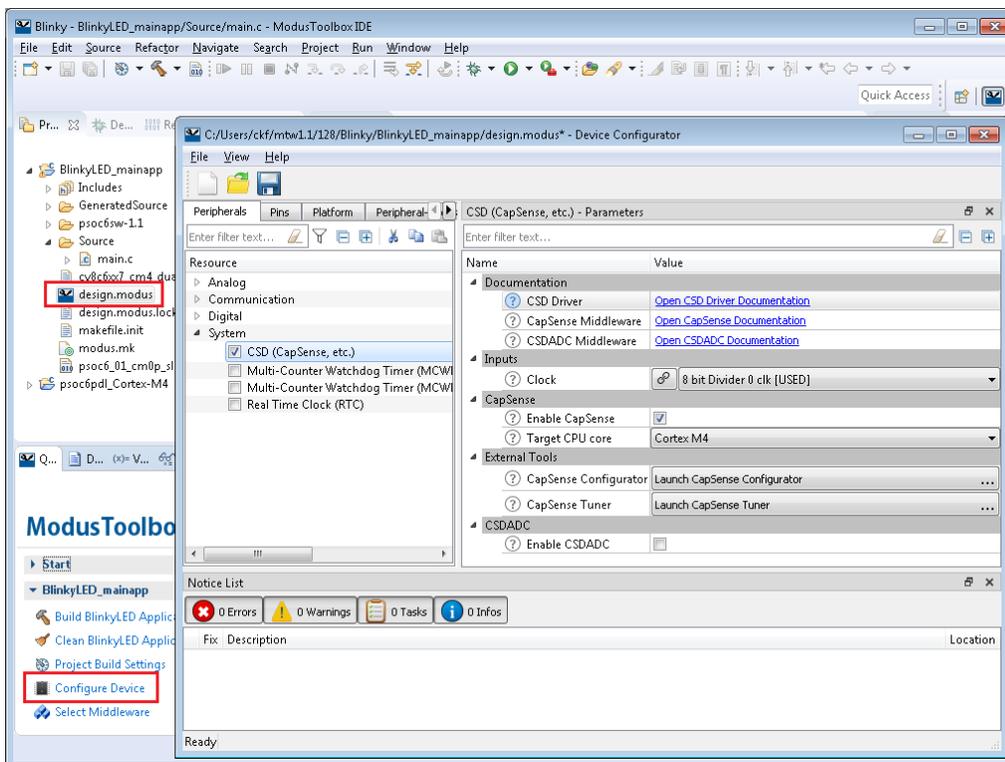

This tool provides access to the application's resources and settings. Each enabled resource contains one or more links to the related API documentation. There are also buttons to open other configurators for CapSense®, Bluetooth, QSPI, Smart I/O™, etc.

For more information, refer to the *Device Configurator Guide*, available by selecting **View Help** from the tool's **Help** menu.

Build the Application

Building the application is not specifically required, because building will be performed as part of the programming and debugging process. However, if you are running the ModusToolbox IDE without any hardware attached, you may wish to build your application to ensure all the code is correct.

In the **Quick Panel**, click the "Build <app-name> Application" link. Build information will display in the Console pane.
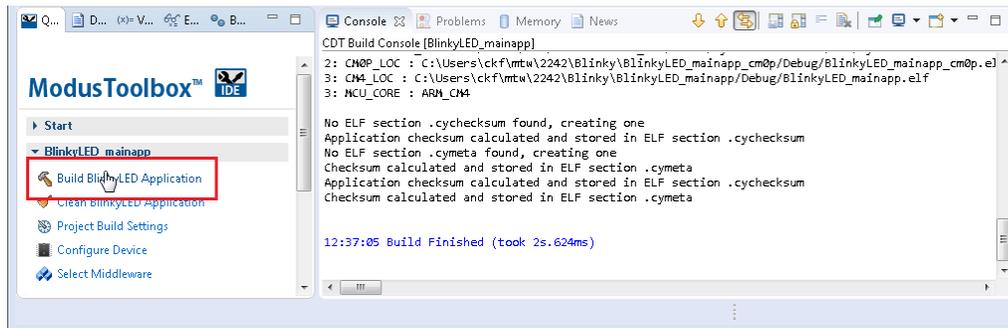
If you have the *BlinkyLED_mainapp* project selected, you can also select **Build ModusToolbox Application** from the **Project** menu or from the right-click menu. The Eclipse menus change based on what you have selected in the Project Explorer.
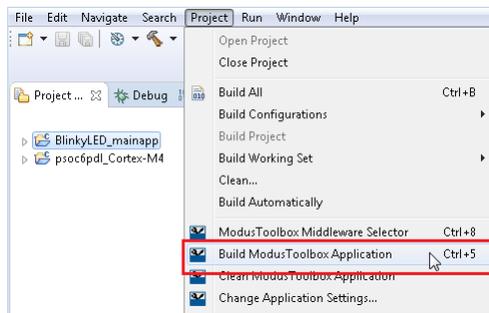
Program the Device

There are several different "Launch Configurations" for programming and debugging the various development kits and starter applications within the ModusToolbox IDE. These Launch Configurations provide details about how to configure the application. This section provides a brief walkthrough for programming this example. For more details about other Launch Configurations and settings, refer to the *ModusToolbox IDE User Guide*, "Programming and Debugging" chapter.

Connect the Kit

Follow the instructions provided with the CY8CKIT-062-WIFI-BT kit to connect it to the PC with the USB cable.

Note This kit's firmware is set to KitProg2 by default. To use this kit with the ModusToolbox software, you must upgrade the firmware to KitProg3. Refer to the the *ModusToolbox IDE User Guide*, "PSoC 6 MCU KitProg Firmware Loader" section for more details.

Program

In the Project Explorer, select the *BlinkyLED_mainapp* application. Then, in the **Quick Panel**, click the "BlinkyLED Program (KitProg3)" link.
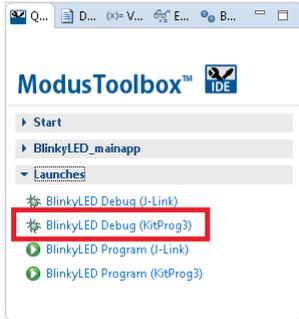

If needed, the IDE builds the application and messages display in the Console. If the build is successful, device programming starts immediately. If there are build errors, then error messages will indicate as such. When complete, the LED will start blinking.
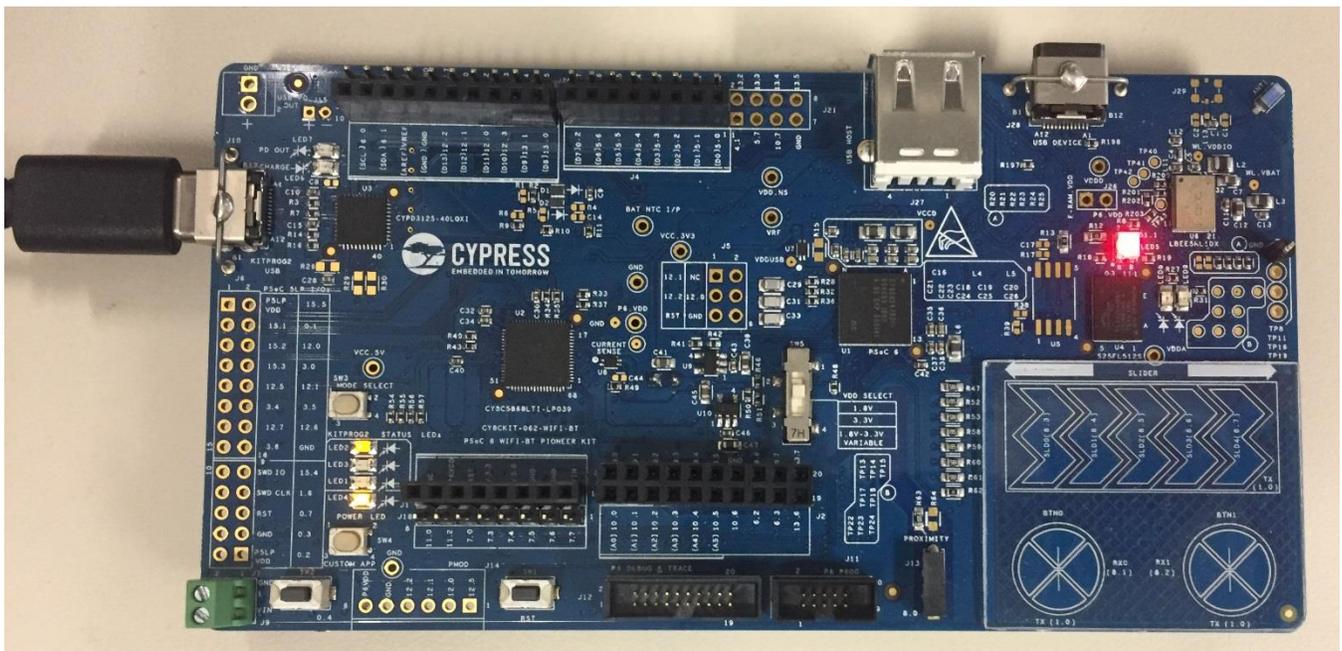
Debug the Program

As mentioned under the Program the Device section in this document, there are many different Launch Configurations for different kits and applications. This section provides a brief walkthrough for debugging this example. For more details about other Launch Configurations and settings, refer to the *ModusToolbox IDE User Guide*, "Program and Debug Applications" chapter.

In the Project Explorer, select the *BlinkyLED_mainapp* application. Then, in the **Quick Panel**, click the "BlinkyLED Debug (KitProg3)" link under **Launches**.

If needed, the IDE builds the application and messages display in the Console. If the build is successful, the IDE switches to debug mode automatically. If there are build errors, then error messages will indicate as such.
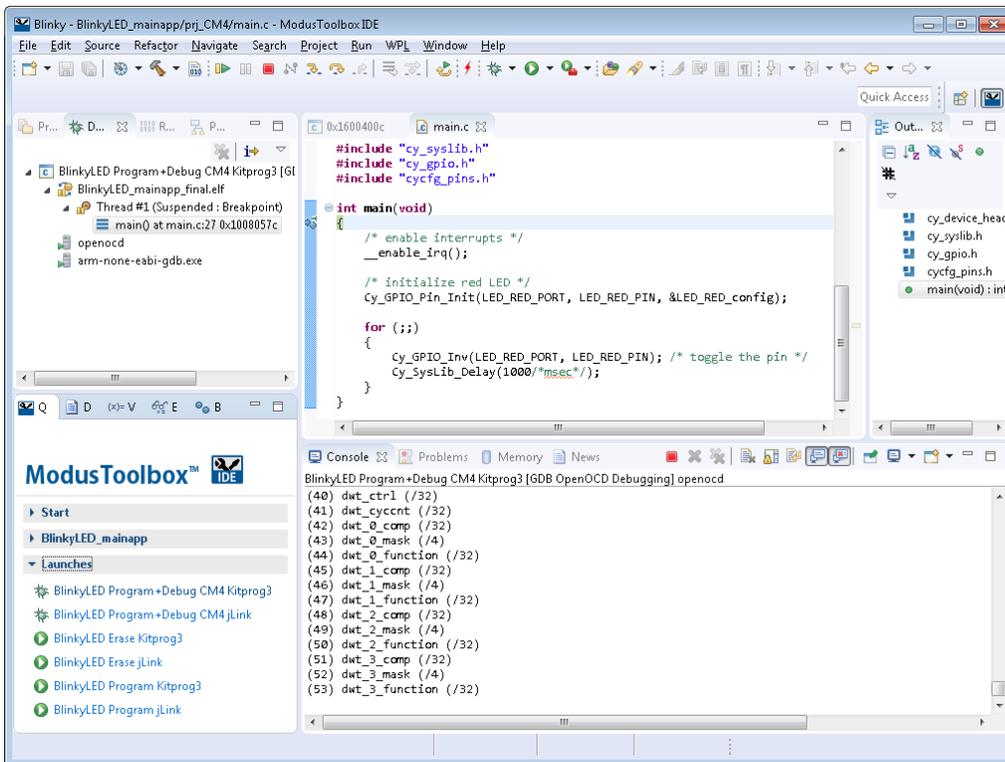
Next Steps

Refer to the *ModusToolbox IDE User Guide* for information such as configuring pins, application settings, peripheral options, as well as adding/removing software components.

Refer to the *Eclipse Workbench User Guide* for information about the Eclipse environment. Cypress also provides the *Eclipsis IDE Survival Guide*.