Application Brief

Accelerate Development of MCU Application Code with MSP Zero Code Studio

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MSP Zero Code Studio

Integrating an MSPM0 microcontroller (MCU) into a design can save cost, board space, and provide increased control within a system. Many developers sacrifice these MCU benefits in favor of existing embedded or discrete designs that traditionally require little to no software investment. The required time and experience for creating and updating application code has prevented many customers from designing-in a new MCU. MSP Zero Code Studio simplifies code development and allows engineers of any experience level to enhance designs with MSPM0.

MSP Zero Code Studio is a visual design environment that enables users to configure their MCU, develop an application, compile code, and program the MCU all from a single graphical user interface (GUI). This no code tool uses a *drag and drop* style interface, where intuitive blocks can be tied together to provide digital, analog, and processing functionality to create applications for the MSPM0 MCUs. The user simply adds and connects blocks to the graphical interface and MSP Zero Code Studio generates all of the necessary code. No programming language, compiler, or IDE download required. MSP Zero Code Studio can simplify application code creation from hours down to minutes.
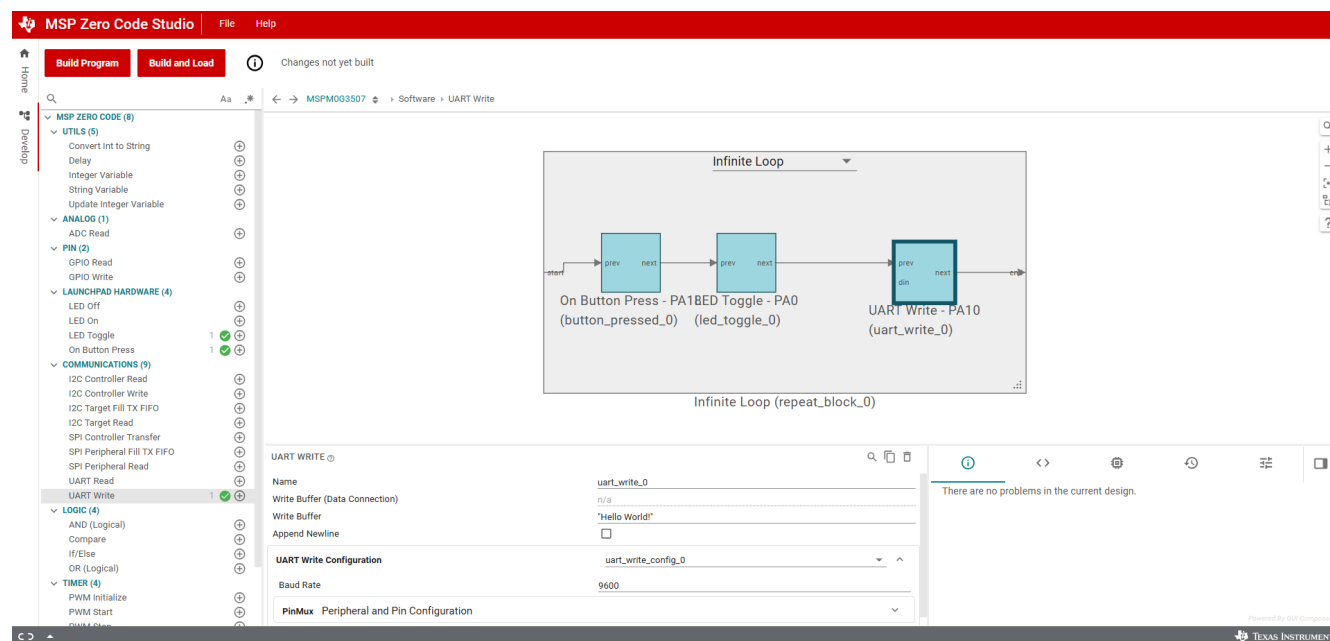

Figure 1. UART Hello World Example in MSP Zero Code Studio

A Graphical Development Environment

Every MSP Zero Code Studio project begins with the user identifying a device from the MSPM0 portfolio and selecting to either start with a pre-loaded template of a common MCU application or a blank project. Within the project, the user can visually configure pins and peripherals, add and remove blocks for common functionalities, include loops or logic functions, and connect pathways for data to move through. Each of these selections are built into the application code generated by the tool. MSP Zero Code Studio abstracts the MSPM0 device architecture, handles interrupt management, and moves data through the application as the user indicated with their visual creation. This streamlined development allows users to focus time on building an application instead of searching through technical documentation to understand device architecture. With MSP Zero Code Studio, the user does not need to be an embedded programming expert to get the most out of an MCU.
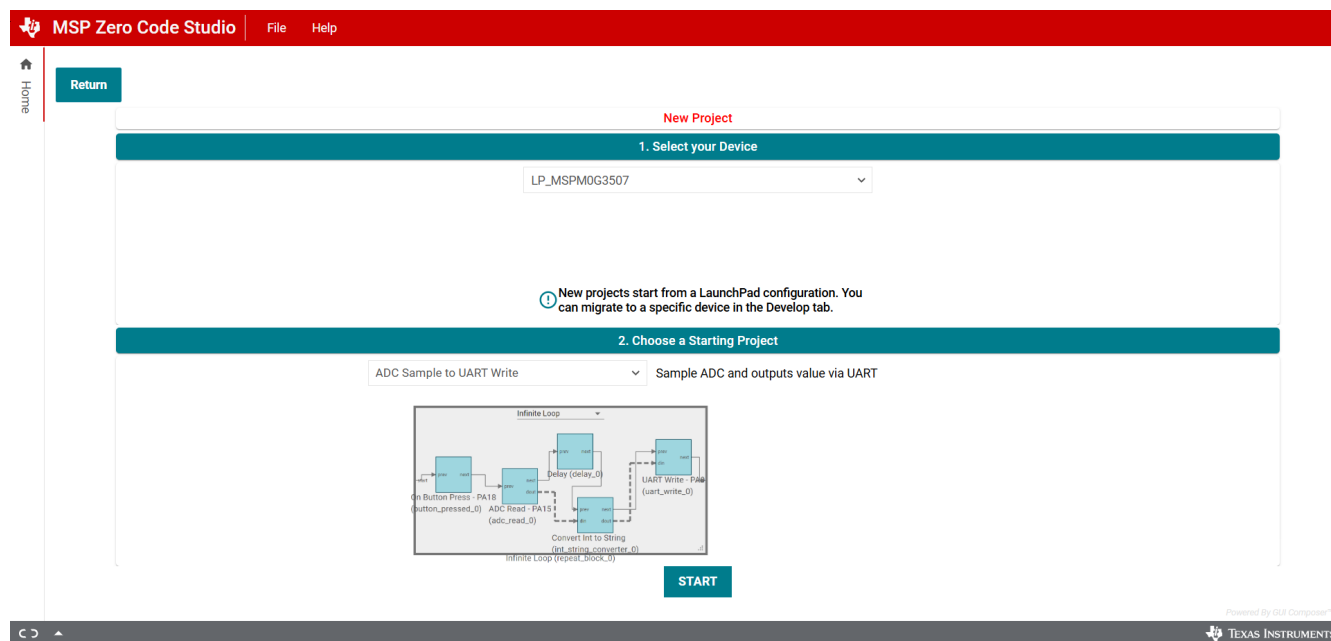

Figure 2. New Project Page in MSP Zero Code Studio

An All-In-One-Tool

There have long since been tools that allow for graphical peripheral configuration or limited schematic-like application development, but with those tools users are not able to create full application code and must continue development themselves. Separate tools offering visual development environments for designing application code have been created as a way to enable the next phase of code development in a graphical development environment, but accessing the advanced features or applications within these environments can be an additional charge to the user. TI has provided a design with MSP Zero Code Studio that allows users to configure their MCU, develop an application, compile code, and program the MCU all from a single graphical user interface. This development environment is made to generate application code for MCUs and is completely free to users - only a ti.com log-in is required. MSP Zero Code Studio combines a combination of many resources making the tool a standout resource.
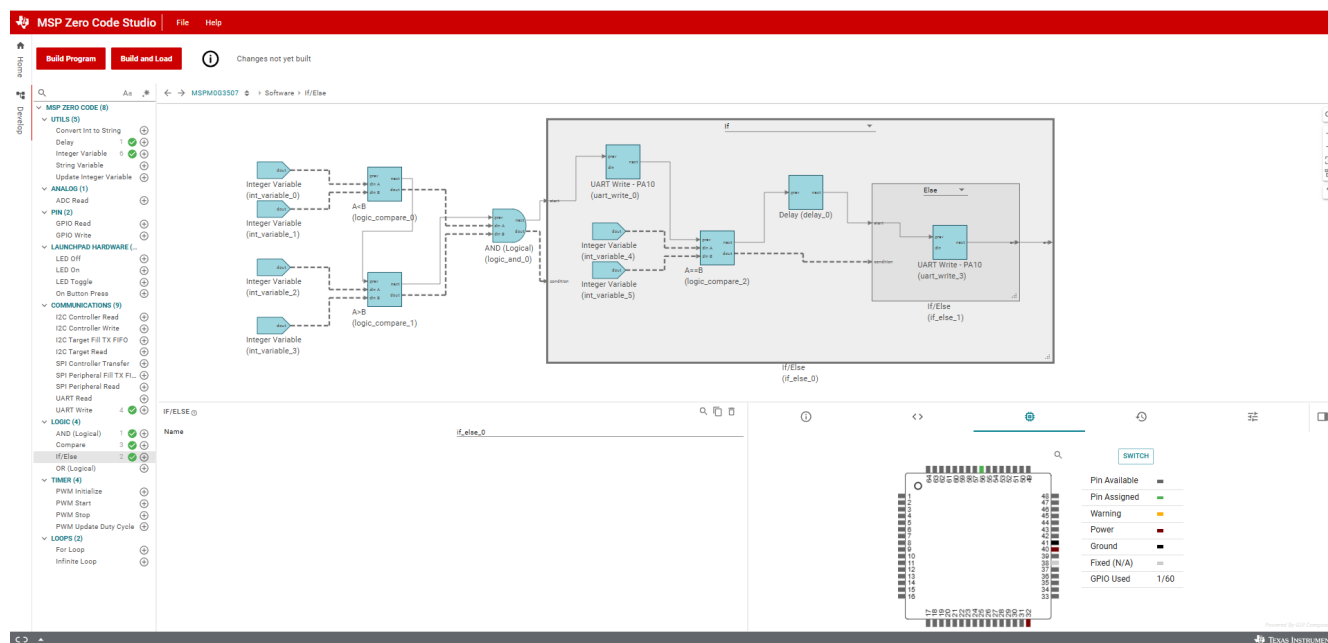
Figure 3. Advanced Control Logic Example in MSP Zero Code Studio

Accelerated Development

The creation of application firmware is a critical step for any design that incorporates an MCU and TI's new graphical development environment makes it possible for any developr to design with an MSPM0. Speed your development and accelerate time to market with MSP Zero Code Studio.

Getting Started

Start your development with MSP Zero Code Studio by checking out the following resources:

- MSP Zero Code Studio Tool Page
- MSP Zero Code Studio Cloud Access (myTI account required)
- MSP Zero Code Studio Users Guide (myTI account required)
- MSP Zero Code Studio Quick Start Guide (myTI account required)

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