

# Simplifying 16-bit PIC® Microcontroller Designs

## Getting Started is Easy with an Ecosystem Including the PIC24F Curiosity Board, MPLAB® Xpress IDE and MPLAB Code Configurator

### Summary

Are you new to 16-bit PIC microcontrollers or starting a new design? Step into the world of unlimited possibilities through an easy-to-start ecosystem including the PIC24F Curiosity Board, MPLAB Xpress Cloud-based IDE and MPLAB Code Configurator (MCC) to simplify your designs. This trio of tools can jump-start your design facilitating a hassle-free start, conceptualization and easy creation of your prototype design.



### PIC24F Curiosity Development Board

Unleash your creativity with the 16-bit PIC24F Curiosity Development Board (DM240004) targeted at first-time users, makers and those seeking a cost-effective, rapid prototyping board. Designed from the ground-up to take full advantage of Microchip's MPLAB Xpress Cloud-based IDE, the board includes an integrated programmer/debugger and requires no additional hardware, making it a perfect starting point to explore the PIC24F MCUs.



#### Key Features

- Features PIC24FJ128GA204 eXtreme Low Power (XLP) microcontroller with an integrated cryptographic engine
- Integrated programmer/debugger with USB interface
- Analog potentiometer, user LEDs, RGB LED and switches
- Full compatibility with MPLAB Xpress, MPLAB X IDE, XC16 compiler and MPLAB Code Configurator
- Functionality expansion support with mikroBUS™ interface for Click Boards™
- Wireless connectivity provision with BM71 Bluetooth® Low Energy (BTLE) module footprint

#### Your Tool for Function Enablement

The PIC24F Curiosity Development Board is the perfect platform to harness the power of modern 16-bit XLP PIC MCUs. The board's layout and external connections offer unparalleled access to the Core Independent Peripherals (CIPs). These CIPs enable you to integrate various system functions onto a single MCU, simplifying the design and keeping system power consumption and BOM cost low.

#### Crafted for Cloud-Based Development

The PIC24F Curiosity Development Board offers seamless integration with software tool chain, including the MPLAB Xpress cloud-based IDE or the traditional desktop MPLAB X IDE. Both environments support the XC16 compiler as well as the MPLAB Code Configurator for easy device, peripheral and pin set-up.

#### Internet of Things (IoT) Ready

The PIC24F Curiosity Development Board can help turn your IoT design idea into a reality. Out of the box, the board offers several options for user interface including switches, LEDs and a potentiometer. Secure your IoT designs with the integrated hardware cryptographic engine available on the PIC24FJ128GA204. Add a full complement of accessory boards available via MikroElektronika mikroBUS interface footprint. Additionally, Bluetooth Low Energy communication can easily be added using Microchip BM71 module footprint.

#### Get Started Now

Getting started has never been easier. Simply visit [www.microchip.com/xpress](http://www.microchip.com/xpress) or use MPLAB X IDE, plug in your PIC24F Curiosity Development Board and start customizing your application. Microchip offers a series of tutorials, user code and application notes to help you with your designs. These helpful design tips can be found at [www.microchip.com/PIC24Fcuriosity](http://www.microchip.com/PIC24Fcuriosity).



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## MPLAB Xpress Cloud-Based IDE for 16-bit PIC MCUs

MPLAB Xpress is an online development environment that contains the most popular features of award-winning MPLAB X IDE. This simplified application is a faithful reproduction of desktop-based program, which allows you to easily transition between the two environments. MPLAB Xpress is a perfect way to get started with 16-bit PIC MCUs and dsPIC® DSCs. Begin evaluation and development of your embedded application with PIC24F, PIC24E and dsPIC33E devices using MPLAB Xpress. With the massive amount of storage available, you can store your projects in the cloud to be accessible from anywhere.



### Get Comfortable with MPLAB Xpress Using Test Drive Mode

The fastest way for you to get started with MPLAB Xpress is Test Drive Mode. Visit [www.microchip.com/xpress](http://www.microchip.com/xpress) and click the “Test Drive” button. Microchip validated code examples can be compiled and simulated within Test Drive Mode. You can proceed one step further to program/debug a development board in this mode.

### Take Full Advantage as a Registered User

Log-in to MPLAB Xpress using your MyMicrochip username and password. This enables you to:

- Save your projects for future use
- Generate code using MPLAB Code Configurator inside the cloud
- Program and debug various development boards:
  - Cost-effective, PIC24F Curiosity Development Board
  - Flexible Explorer 16/32 Development Board

### Join the MPLAB Xpress Community

The community allows you to share your ideas with others, or gain inspiration from the shared code.

- Share projects
- Search by contributor, application, function, device or hardware
- Discuss ideas on the MPLAB Xpress Forum
- Learn how to optimize designs on the MPLAB Xpress Wiki repository

### Something Even Better!

MPLAB Xpress IDE is completely free! Access your projects from any Internet-connected computer, anywhere in the world and collaborate effectively with your team across the globe. Get started today at [www.microchip.com/xpress](http://www.microchip.com/xpress).

## MPLAB Code Configurator

MPLAB Code Configurator is a free graphical programming environment supporting 16-bit PIC24 and dsPIC33 devices to generate easy-to-understand C code that can be inserted into your project. Offering an easy-to-use interface, it configures a rich set of peripherals, software libraries and high-level functions specific to your application. It is incorporated into both MPLAB Xpress cloud-based IDE and the traditional desktop MPLAB X IDE.



### Intuitive interface for Quick-Start Development

Spend less time reading the product data sheet and start developing your application immediately with the intuitive user interface inside MCC. With just a few mouse clicks, you can configure both individual peripherals and high-level system functions that combine multiple Core Independent Peripherals (CIPs). For further details on using MCC in your design, visit [www.microchip.com/mcc](http://www.microchip.com/mcc).



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