

MPLAB® Harmony v3

Unified Software Development Framework for 32-bit MCUs and MPUs

Summary

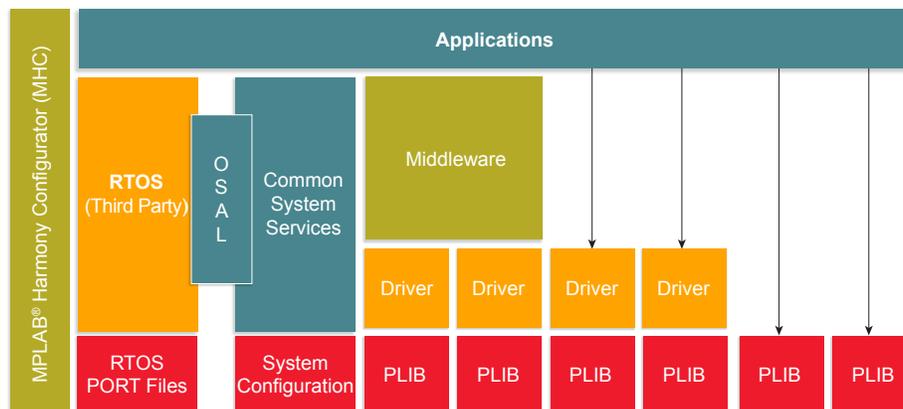
A unified and powerful content development and delivery environment, MPLAB® Harmony Software Framework v3 together with MPLAB X Integrated Development Environment (IDE), enhances your application development experience with a set of optimized peripheral libraries, simplified drivers and modular software downloads.

MPLAB Harmony v3 provides a unified platform with flexible choices spanning architectures, performance and application focus. It enables development of robust, interoperable, RTOS-friendly applications with quick and extensive support for third-party software integration. The improved MPLAB Harmony Configurator (MHC), now with a modular download manager, alleviates you from non-differentiating tasks to select and configure all MPLAB Harmony components in a graphical way, including middleware, system services and peripherals.



Key Highlights

- Unified Development Platform supports both PIC® and SAM 32-bit microcontrollers and microprocessors
- MPLAB Harmony Configurator (MHC) enables easy setup configurators for clock, I/O pin, ADC, interrupt, DMA, MPU, Event, QTouch®, as well as Harmony Graphics Composer and Display Manager
- FreeRTOS integration optional available
- MPLAB Harmony is delivered via GitHub to streamline application development:
 - Optimized peripheral libraries for size and performance
 - Simplified drivers supporting development at silicon level
 - Smaller/Modular downloads of software or services
- Powerful Middleware
 - TCP/IP, Wi-Fi®
 - TLS (wolfSSL TLS), Crypto
 - USB Device and Host
 - Audio and Bluetooth®: USB Audio, Hardware Codec, Software Codec, BT/BLE
 - Graphics: MPLAB Harmony Graphics Composer, Screen Designer, Display Manager
 - Many more: Motor Control, QTouch, Bootloaders, DSP/Math, etc.



Tools and Demo Examples

Development Kits

ATSAMC21N-XPRO/ ATSAMD21-XPRO

The SAMC21N/SAMD21 Xplained Pro Evaluation Kits



ATSAME54-XPRO

The SAM E54 Xplained Pro Evaluation Kit is a hardware platform for evaluating SAM D5x/E5x series microcontrollers (MCUs).



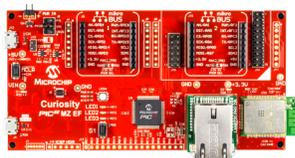
DM320007-C/DM320010-C

PIC32MZ EF (Connectivity)/PIC32MZ DA (Graphics) Starter Kits



DM320104

The Curiosity PIC32MZEf Development Board, including on board Wi-Fi module



DM320113

The SAM E70 Xplained Ultra Evaluation Kit is a hardware platform for evaluating the ATSAME70 and ATSAMS70 families of microcontrollers (MCU).



ATSAMA5D2C-XULT/ ATSAM9X60-EK

The SAMA5D2 Evaluation Kit is a fast prototyping and evaluation platform for the SAMA5D2 series of MPUs. The SAM9X60 Evaluation Kit is ideal for evaluating and prototyping with the high performance, ultra-low power SAM9X60 ARM926EJ-S based MPU.



MPLAB Harmony v3: Demo Examples

Connectivity (TCP/IP, USB)	Audio	Graphics	Motor Control
TCP/IP Demo	Audio Microphone	Aria Quickstart (gateway demo)	AN2757: Sensorless FOC Speed Control for a PMSM and Flux Weakening
Wi-Fi® Demo	Encoders and decoders	Aria Benchmark (graphics performance measuring)	
USB Demo	USB Speaker, microphone USB Smart Speaker	Aria Showcase	AN2590: PMSM Sensorless FOC (ROLO based Sensorless FOC) + Windmilling
Bluetooth® Demo	Audio + Bluetooth	Aria Weather Forecast	

Available Resources

- **MPLAB Harmony v3 Landing Page:** <https://www.microchip.com/mplab/mplab-harmony>
- **MPLAB Harmony v3 Device Support:** https://github.com/Microchip-MPLAB-Harmony/Microchip-MPLAB-Harmony.github.io/wiki/device_support
- **GitHub MPLAB Harmony v3 Wiki Page:** <https://github.com/Microchip-MPLAB-Harmony/Microchip-MPLAB-Harmony.github.io/wiki>
- **GitHub MPLAB Harmony v3 User Guide:** <https://microchip-mplab-harmony.github.io/>

Complementary Devices

- **Wireless Connectivity:** Wi-Fi, Bluetooth, BLE, LoRa, IEEE 802.15.4, Sub-G
- **Wired Connectivity and Interface:** CAN Transceivers, Ethernet PHY
- **Industrial Networking:** EtherCAT
- **CryptoAuthentication Device:** ATECC608A, ATSHA204A
- **Clock and Timing:** MEMs Oscillator
- **Analog:** Op Amp, Motor Driver
- **Power Management:** Linear and Switching Regulators

Services and Third Party

- **Microchip Training:** www.microchip.com/training/
- **Third Party Solutions:** FreeRTOS, Micrium and wolfSSL
- **Integrated Development Environment:** IAR

The Microchip name and logo, the Microchip logo, MPLAB and PIC are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. Arm and Cortex are registered trademarks of Arm Limited (or its subsidiaries) in the EU and other countries. All other trademarks mentioned herein are property of their respective companies.
© 2019, Microchip Technology Incorporated. All Rights Reserved. 10/19

DS00003024C