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.

www.microchip.com/mplab
Tools and Demo Examples

Development Kits

**ATSAMC21N-XPRO/ATSAMD21-XPRO**
The SAMC21N/SAMD21 Xplained Pro Evaluation Kits

**ATSAME54-XPRO/DM320113**
The SAM E54 Xplained Pro/The SAM E70 Explained Ultra Evaluation Kits

**DM320007-C/DM320010-C**
PIC32MZ EF (Connectivity)/PIC32MZ DA (Graphics) Starter Kits

**DM320104**
The Curiosity PIC32MZEF Development Board, including on board Wi-Fi module

**ATSAMV71-XULT**
The SAM V71 Xplained Ultra evaluation kit is ideal for evaluating and prototyping with the SAM V71, SAM V70, SAM S70 and SAM E70 Arm® Cortex®-M7 based microcontrollers.

**ATSAMA5D2C-XULT*/SAMAD27-SoM-EK1**
The SAMA5D2 Xplained Ultra Evaluation Kit, including eMMC and DDR3/SoM and SiP Evaluation Kit

*Harmony support coming soon

MPLAB Harmony v3: Demo Examples

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Available Resources

- [MPLAB Harmony v3 Landing Page](https://www.microchip.com/mplab/mplab-harmony/mplab-harmony-v3)
- [MPLAB Harmony v3 Device Support](https://github.com/Microchip-MPLAB-Harmony/Microchip-MPLAB-Harmony.github.io/wiki/device_support)
- [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](https://www.microchip.com/training/)
- ExpressLogic, FreeRTOS, Micrium, Segger and wolfSSL
- Integrated Development Environment: IAR