

## MPLAB<sup>®</sup> Harmony 之基础篇(01) -- Harmony 3 开发环境搭建

Microchip Technology Inc. MCU32 产品部

### 一、 简介

本文帮助大家在 Windows 平台上搭建一套完整的 Harmony 3 软件开发环境,包括 MPALB X IDE,编译器 XC32, MPLAB Harmony 3 配置器以及 Harmony 3 软件包。

## 二、 软件平台

操作系统: Windows 7 或者更新 MPLAB X IDE: v5.10 或者更新 XC32: v2.15 或者更新

注: PC 和 Windows 建议使用 64 位处理器和 64 位操作系统。

#### 三、 详细步骤

(一) 下载工具安装包

#### MPLAB X IDE:

V5.15版本:

<u>http://ww1.microchip.com/downloads/en/DeviceDoc/MPLABX-v5.15-windo</u> <u>ws-installer.exe</u>

#### XC32:

V2.15版本:

<u>http://ww1.microchip.com/downloads/en/DeviceDoc/xc32-v2.15-full-install</u> <u>-windows-installer.exe</u>

注: 推荐使用最新版本工具:

- MPLAB X IDE: <u>https://www.microchip.com/mplab/mplab-x-ide</u>
- XC32: <u>https://www.microchip.com/mplab/compilers</u>

(二) 安装 MPLAB X IDE 集成开发环境

1. 双击 MPLAB X IDE 安装包

### 🕔 MPLABX-v5.15-windows-installer

2. 根据安装提示一步步确认安装(建议按默认选项安装)



注: 1)安装过程中会遇到如下 Agreement 检查,接受即可
Do you accept this license?
2) 安装路径建议按默认目录,如果需要修改目录,请在遇到如下 安装提示时更改至期望目录
Installation Directory: C:\Program Files (x86)\Microchip\MPLABX\v5.15
Proxy Settings:
Proxy Settings: O No Proxy
Proxy Settings: O No Proxy Use System Proxy Settings
Proxy Settings: ○ No Proxy ● Use System Proxy Settings 3) 安装过程中,确保 MPLAB X IDE 一定要勾选上





Windows Security	
Would you like to install this device software?	
Name: Microchip Technology, Inc. Atmel USB Dev Publisher: Microchip Technology Inc.	
Always trust software from "Microchip Technology Inc.".	1
You should only install driver software from publishers you trust. <u>How can I decide which device software is safe to install?</u>	
6) 最后,还会弹出如下对话框,不用勾选,直接点击结束目	山口
0 Setup - X	
Completing the MPLAB X IDE v5.15 Setup Wizard Setup has finished installing MPLAB X IDE v5.15 on your computer. Leaving the boxes checked will launch a browser pointing to the urls shown so you can perform the desired action.	
C compilers are not installed with the IDE. Go to www.microchip.com/MPLABxc to download a compiler or assembler Go to www.microchip.com/Harmony to simplify 32 bit project development by downloading MPLAB Harmony Integrated Software Framework and its configurator (MHC)	9
MPLAB Code Configurator(MCC). MCC simplifies project setup by generating C code using graphical interface           < Back	

- (三) 安装 XC32 编译器
  - 1. 双击 XC32 安装包

# U xc32-v2.15-full-install-windows-installer

2. 根据安装提示一步步确认安装完成

注:

1) 建议"Free"安装模式即可

MPLAB XC32 Compiler can be installed t with a workstation license, or as a netwo	to run in Free mode, rk client.
Free	
O Workstation	
O Network Client	



2),安装路径建议默认目录



#### (四) 安装 MHC



2. 从"Tools"菜单选择"Plugins Download"



3. 若弹出如下对话框,选择"Go to MPLAB X Plugin Manager"



4. 从"Available Plugins"里找到 MPLAB Harmony Configurator 3



Updates A	1 LL pl .: (pp)			
Check fo	valiable Plugins (39) Downloaded	Installed (78) S	ettings	Search:
Install	Name	Category	Source	MPLAB® Harmony Configurator 3
	JIRA Power Monitor	MPLAB Plugin	444 <b>^</b>	00
	RTOS Viewer (FreeRTOS)	MPLAB Plugin		🙀 Community Contributed Plugin
	ECAN Bit Rate Calculator	MPLAB Plugin	କିକି	Version: 3.2.0.3
	MPLAB® Harmony Configurator 3	MPLAB Plugin	10	Author: Microchip Technology Inc.
	DMCI	MPLAB Plugin	44	Source: Microchip Plugins
	Remote USB Debugging (Trial Vers	. MPLAB Plugin		Homepage: www.microchip.com/harmony
F	Plugin Update Services	MPLAB Plugin	-	
	USB Tool Connection Diagnostics	MPLAB Plugin	କ୍ଷିକ	Plugin Description
	Doxygen Integrator	MPLAB Plugin	999 200	The MPLAB® Harmony Configurator for use with MPLAB Harmony v3 supports
	MPLAB& Code Configurator MPLABX KeeLog Plugin	MPLAB Plugin	44	configuration and code generation for all MPLAB Harmony components. MPLAB® Harmony
	App Launcher	MPLAB Plugin		32-bit Microchip devices. See www.microchip.com/harmony for additional information.
	MemoryStarterkit	MPLAB Plugin	<del>-</del>	
	Code Profiling (Trial Version)	MPLAB Plugin	999 999	
	ISPICWORKS Save As v4 vy Project	MPLAB Plugin	44	
	Digital Compensator Design Tool Pl	MPLAB Plugin	44	
	MPLAB® Harmony Configurator	MPLAB Plugin	<u></u>	
9	Simple Serial Port Terminal	MPLAB Plugin	\$\$\$ V	
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	CADIE Harmony	comge		
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5. MPLAB X IDE 重启后,从 Tools 菜单里的 Embedded 选项里会出现如下 菜单



Tools	Window Help			
	Embedded Licenses		MPLAB® Harmony 3 Framework Downloader	
	Templates	e	MPLAB® Harmony 3 Configurator	_
MHC	已经安装成功!			

### (五) 获取 Harmony 3 代码

1. 点击 Tools->Embedded->MPLAB Harmony 3 Framework Downloader

	Tools Window He	lp		
	Embedded		😔 🚇 MPLAB® Harmony 3 Framework Downloader	
	Licenses		MPLAB® Harmony 3 Configurator	
扌 2	妾下来根据提示 . 设置 Harmor	:一步步往 iy 3 代码[	往下进行代码下载。 B的本地工作目录	
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4	. 选中需要的软	次件包并 <sup>-</sup>	卡下载	
	<ol> <li>Connection Settings</li> <li>Download Catalog</li> <li>Download Packages</li> <li>Package Configuration</li> </ol>	Name motor_contro	Address Dependencies Download ntrol https://github.com/Microchip-MPLA [csp, dev_packs	5
	HARMONY		Download	

5. 接受所有 License 启动下载



Select a license to view:	
MPLAB Harmony License	Software todose actor Aks 257.227-015, and in small codes in the reverse that supplement. Contractor ma- nufacturer is Microchip Technology Inc., 2355 W. Chandler Bird., Chandler, AZ 85225-6199. If Licensee has any questions about this Agreement, please write to Microchip Technology Inc., 2355 W. Chandler Bird. Chandler AZ 85224-6100 USA ATTW. Marketion
	Microchip MPLAB Harmony Integrated Software Framework. Copyright © 2015 Microchip Technology Inc. All ri ghts reserved.
	License Rev. 11/2015
	Copyright© 2015 Qualcomm Atheros, Inc. All Rights Reserved.
The selected license applies to the following packages	Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.
motor_control	THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO TH IS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT S ALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSCEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE U SE OR PERFORMANCE OF THIS SOFTWARE.

6. 等待下载过程结束

Download Fackages	motor control	https://github.com/Microchip-MPLA csp, dev	packs
Package Configuration			

- 7. 检查 Harmony 3 本地目录是否已经有选择下载的软件包,如下
- : (C:) > microchip > H3 >

^	Name	Date modified	Туре
	🧿 audio	1/8/2019 4:50 PM	File folder
	🧿 bsp	12/25/2018 6:07 PM	File folder
	🧿 bt	1/8/2019 4:52 PM	File folder
	CMSIS-FreeRTOS	12/25/2018 6:08 PM	File folder
	o core	12/25/2018 6:09 PM	File folder
	🧿 crypto	12/25/2018 6:10 PM	File folder
	🥏 csp	12/25/2018 6:11 PM	File folder
÷.	🧿 dev_packs	12/25/2018 6:12 PM	File folder
	🧿 gfx	12/25/2018 6:17 PM	File folder
	o gfx_apps	12/25/2018 6:18 PM	File folder
	o mhc	12/25/2018 6:19 PM	File folder
	o motor_control	3/5/2019 11:35 AM	File folder
	🧿 net	12/25/2018 6:22 PM	File folder
	🧿 usb	12/25/2018 6:23 PM	File folder
	o wolfssl	12/25/2018 6:27 PM	File folder



# 四、 总结

本文通过一步步的图文介绍了 MPLAB X IDE, XC32, MHC 安装以及如何获取 Harmony 3 的代码,帮助大家搭建 Harmony 3 的必须的软件开发平台;接下来如 何基于 Harmony 3 创建和开发自己的应用,请参考更多 <u>Harmony 3 帮助文档</u>和 MPLAB<sup>®</sup> Harmony 之基础篇的更多其它中文手册。