ARC IOTDK

- Environment Build -

Contents

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Download Link :

https://github.com/foss-for-synopsys-dwc-arc-processors/toolchain/releases/tag/arc-2020.03-release

Version : 2020.03

	Linux x86_64	Windows x86_64	Linux ARC HS	macOS x86_64
Baremetal	Little endian \ Big endian			Little endian \ Big endian
Linux/uClibc ARC700	Little endian \ Big endian			
Linux/uClibc ARC HS	Little endian \ Big endian		Little endian	
Linux/glibc ARC HS	Little endian \ Big endian			
IDE	Download	Download		Download
		for windows		for mac

🗊 ARC GNU IDE 2020.03 Setup	_		\times
License Agreement Please review the license terms before installing ARC GNU IDE 2020.03.	Syna Silicon t	OPS	YS° vare
Press Page Down to see the rest of the agreement.			
Synopsys?free and open-source licensing notices for: * GNU Toolchain for ARC?Processors * Eclipse IDE with GNU Toolchain for ARC?Processors			^
CONTENTS Document Overview FOSS Packages CGEN Eclipse IDE GNU Binutils GNU Compiler Collection (GCC)			¥
If you accept the terms of the agreement, dick I Agree to continu agreement to install ARC GNU IDE 2020.03.	ie. You must a	ccept the	
Nullsoft Install System v3.0 —	I Agree	Can	cel

Choose Components	Chill 105 2020 02 www.week.ba	SYN	JPSYS
install.	GNU IDE 2020,03 you want to	Silicon t	o Softwar
Check the components you wa install. Click Next to continue.	nt to install and uncheck the comp	onents you do	n't want to
Select components to install:	GNU Toolchain for ARC GNU Toolchain for ARC (big GNU Toolchain for ARC (big Edipse IDE for ARC Java runtime for Edipse MSYS Core Utils	endian)	^
	GNU Make		~
	Description		
Space required: 930.2MB	Description Position your mouse over a con description.	nponent to see	its

You can choose your own Destination Folder

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ARC GNU IDE 2020.03 Setup	·	SYN	OPSV
Please wait while ARC GNU IDE 2020.03	is being installed.	Silicon	to Softwa
Extract: nsim.specs			
Extract: libc_nano.a 100%			^
Extract: libg.a 100%			
Extract: libg_nano.a 100%			
Extract: libra and a 100%			
Extract: librarys a 100%			
Extract: librosys.a 100%			
Extract: libremu a 100%			
Extract: pape, specs 100%			
Extract nanospectric 100%			

Done !

Installation Complete Setup was completed successfully.		SYNOPSYS
Completed		
Extract: syntax1.cfg 100% Output folder: C:\arc_gnu\share\openc Extract: general.td 100%	ocd\scripts\test\arc	^
Extract: reset_sdp.td 100% Extract: reset_sdp.td 100% Output folder: C:\arc_gnu\share\opend Extract: firmware-recovery.td 100%	ocd\scripts\tools	
Output folder: C:\arc_gnu Completed		

Installation

- VSCode

Download Link : https://code.visualstudio.com/#alt-downloads



Installation - VSCode

Please learn how to use VSCode by yourself on the Internet

ex:改中文介面、常用快捷鍵...etc

簡單了解即可

Installation

- Putty

Download Link : https://www.puttygen.com/download-putty

Please follow the steps to install !

- Download Zadig

Download Link : https://zadig.akeo.ie





Choose Digilent USB Device(Interface 1)

Zadig vice Options Help		- 🗆 X
Digilent USB Device (Interface 1)		✓ ☐ Edit
USB2.0 VGA UVC WebCam (Interface 0) Digilent USB Device (Interface 0) USB OPTICAL MOUSE		ation
Bluetooth Radio		
WCID ² X	Reinstall Driver -	libusbK WinUSB (Microsoft)
		WinUSB (Microsoft)

- 1. Choose WinUSB (v6.1.7600.16385)
- 2. Install Driver or Install WCID Driver

(🔆 if you have installed this driver before, it will display Replace Driver, just click it)

3. Then, wait a second

evice Options Help		
Digilent USB Device (Interface 1)		∼ □ Edit
Driver FTDIBUS (v2.12.28.0)	WinUSB (v6.1.7600.16385)	More Information WinUSB (libusb)
	Install WCID Driver	libusbK WinUSE (Microsoft)
	Install Driver	

- 1. Click Close
- 2. Click Replace Driver



Wait a second

→ □ Edit
✓ □ Edit
More Information WinUSB (libusb)
libusb-win32 libusbK WinUSB (Microsoft)

Device Optic Driver Installation			
Digilent USB D The driver w	as installed successfully.		- Edit
Driver WinU		Close	iformation (libusb)
WCID ²	Reinstall Driver	libusbl WinUS	<u>K</u> SB (Microsoft)
iver Installation: SUCCESS			7adio 2 5 73

Then you can find Driver is changed to WinUSB Now, please restart your pc

Zadig	- 🗆 X
Device Options Help	
Digilent USB Device (Interface 1)	∽ □ Edit
Driver WinUSB (v6. 1. 7600. 16385) WinUSB (v6. 1. 7600. 16385)	More Information
	WinUSB (libusb)

After restart, you can check your USB Driver in "Device Manager"

Done !



- Download embarc_osp

Download Link :

https://github.com/foss-for-synopsys-dwc-arc-processors/embarc_osp

🛱 foss-for-synopsys-d	wc-arc-processors / embarc_osp			O Watch ▼ 28
<> Code () Issues 9	11 Pull requests 3 (Actions III Projects 3	🖽 Wiki 🕐 Security 🗠 Insights		1. Click here
រិ ^ទ maste	r 🗸 😵 8 branches 🔿 14 tags	Go to file Add file -	⊻ Code -	About
🔂 Yugu	IOWH Improve documents and makefile, expose linker script r	nakefile option Clone with HTTPS ③	Use SSH	embARC Open Software Platform (OSP) - An embedded software distribution
asty	le tool: update the code st	yle rule https://github.com/foss-for-syn	mopsys-d	for IoT and other embedded applications for ARC
📄 .ci	travis: Secureshield exan	nples don't sup		
📄 .gith	ub Update CONTRIBUTING	.md Open with GitHub Desktop		iot-platform iot-framework arc iot
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🖿 boar	d board: nsim: remove nsi	m_isa_host_timer options	15 months ago	
evic devic	ce doc: modify punctuation	n and spelling	13 months ago	C Readme
🖿 doc	Improve documents and	l makefile, expose linker script makefile option	3 months ago	ある BSD-3-Clause License
exan	nple example: bootloader: fix	unclear document	12 months ago	
inc 💼	arc: fix the bug caused b	by typos	13 months ago	Releases 14
📄 libra	ry Merge pull request #100) from BabaYB/ss_appl_gen	13 months ago	embARC Open Software Platf Latest on 3 Sep 2019

unzip embarc_osp-master.zip Open with VSCode

Open with VSCode **First way :**

×	檔案(F) 編輯(E)	選取項目(S) 檢視(V)	移至(G)	執行(R)	終端機(T)	說明(H)					
С)	新増檔案	Ctrl+N									
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		Alt+F4									

Open with VSCode Second way :

名稱	修改日期	類型	大小		
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📕 .ci	2020/2/18 上午 10:06	檔案資料夾			
📕 .github	2020/2/18 上午 10:06	檔案資料夾			
📕 arc	2020/2/18 上午 10:06	檔案資料夾			
📕 board	2020/2/18 上午 10:06	檔案資料夾			
🧵 device	2020/2/18 上午 10:06	檔案資料夾			
📕 doc	2020/2/18 上午 10:06	檔案資料夾			
📕 example	2020/2/18 上午 10:06	檔案資料夾		檢視(V)	>
📕 inc	2020/2/18 上午 10:06	檔案資料夾		排序方式(O)	>
📕 library	2020/2/18 上午 10:06	檔案資料夾		分組方式(P)	>
📕 middleware	2020/2/18 上午 10:06	檔案資料夾		重新整理(E)	
📕 options	2020/2/18 上午 10:06	檔案資料夾			
🦲 os	2020/2/18 上午 10:06	檔案資料夾			
📕 scripts	2020/2/18 上午 10:06	檔案資料夾		n上(P)	
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apply_embARC_patch.sh	2020/2/18 上午 10:06	Shell Script	2 KB	ofit GUI Here	
LICENSE	2020/2/18 上午 10:06	檔案	2 KB	🚸 Git Bash Here	
README.md	2020/2/18 上午 10:06	Markdown 來源	3 KB	🗙 以 Code 開啟	
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					>

內容(R)

This is begin page, you can see embarc_osp file at left side





You will see this window Then turn back to VSCode





Hot Key : Ctrl + Shift + `

Then you can find a new terminal appearing at bottom



- 1. Key in "cd example/baremetal/imu_mpu9250"
- 2. Key in "make run"
- 3. Wait a second, it is compiling file and preparing to run now



1. If you see the line

--Type <RET> for more, q to quit, c to continue without paging--

just key in "Enter"



問題 輸出 偵錯主控台 終端機

GNU gdb (ARCompact/ARCv2 ISA elf32 toolchain 2020.03) 10.0.50.20200307-git Copyright (C) 2020 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html> This is free software: you are free to change and redistribute it. There is NO WARRANTY, to the extent permitted by law. Type "show copying" and "show warranty" for details. This GDB was configured as "--host=i686-w64-mingw32 --target=arc-elf32". Type "show configuration" for configuration details. --Type <RET> for more, q to quit, c to continue without paging--



After a lot of "Enter" (about two or three), you will see "Continuing." Then, Open Serial COM Port window, you will see like below

問題 輸出 偵錯主控合 終端機		1: gmake	~ +	Ш I	Î ~	×
Loading section .vector, size 0x400 lma 0x20000400 Loading section .text, size 0xf400 lma 0x20000800						
Loading section .rodata, size 0x2668 lma 0x2000fc00	Putty		-	-	I X	
Type <ret> for more, q to quit, c to continue without paging</ret>	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.1				^
Start address 0x20000004, load size 77872 Transfer rate: 429 KB/sec, 9734 bytes/write.	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.2				
Continuing.	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.2				1.1
	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.3				- 1
	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.3				
	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.4				
If you see a lot of "dmp: " is printed	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.4				
in the window, this is that you succeed !	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.5				
	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.5				
If not, please ask TA for help	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.5				
Thanks ~	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.6				
	dmp: pitch=0000.0, roll=0000.5,	yaw=0036.6				~

If you want to stop the program

- 1. Go back to terminal
- 2. Hot Key : Ctrl + c, then you will see (gdb)

問題 輸出 偵錯主控合 終端機	1: gmake	+ [] @ ^ ×
Loading section .data, size 0xfb4 lma 0x20012268 Type <ret> for more, q to quit, c to continue without paging Start address 0x20000004, load size 77872 Transfer rate: 429 KB/sec, 9734 bytes/write. Continuing.</ret>		
Program received signal SIGINT, Interrupt. 0x2000ea74 in <u>udivdi3</u> () (gdb)		
3. Key in "q"		
(gdb) q		
4. Key in "y"		
Quit anyway? (y or n) y		
5. Key in "y"	_	

要終止批次工作嗎 (Y/N)? y

6. You will see bellow represented that you stop the program succeed !

gmake: *** [run] Error 255
PS C:\workspace\embarc_osp-master\embarc_osp-master\example\baremetal\imu_mpu9250>

Done !

If you have any question, please ask TA for help ~