



UWB device firmware update

Version 1.1 (2023.01.01)



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All users who use this module for product development must obtain the approval of the local radio supervision and management department before marketing or selling the product, and the customer must assume all responsibilities for obtaining the approval from the relevant authorities.

1 Overview

Users can update the firmware of the research and innovation UWB module in the following ways, please download it according to the model you selected.

	已购源码客户	未购源码的客户
Applicable models	Mini3	Mini3
	Mini3s	Mini3s
	Mini3sPlus	Mini3sPlus
	Mini4sPlus	Mini4sPlus
	Mini4	Mini4
	Mini5	Mini5
	Protag(STM32)	Protag(STM32)
Update method	Download the firmware by	Download the .hex file
	using the Keil	upgrade program for the
		module
Tools & Software	hardware: ST-LINK Debugger	hardware: ST-LINK Debugger
	software: Keil MDK	software: ST-LINK Utility
Reference	Chapter 4	Chapter 2

Table 1.1 A list of upgrade methods for YCHIOT dev-kit series

Table 1.2 YCHIOT commercial product series upgrade methods

	Anchor upgrade	Tag upgrades			
Applicable models	ProAnc (STM32)	ProCard (NRF52832)			
		Protag (NRF52832).			
Update method	Download the .hex file	Download the .hex file			
	upgrade program for the	upgrade program for the			
	module	module			
Tools & Software	HARDWARE: ST-LINK	HARDWARE: J-LINK			
	Software: ST-LINK Utility	SOFTWARE: J-FLASH			
Reference	Chapter 4	Chapter 3			

2 Upgrade by ST-LINK Utility

2.1 About STM32 ST-LINK Utility

The main function of the STM32 ST-LINK Utility software is mass production (a tool for downloading codes in batches). It is also a more practical tool, when we need to view the chip FLASH data, we can quickly locate and find the data we want (provided that no protection is added).

The STM32 ST-LINK Utility software includes the ST-Link driver. If you install STM32 ST-LINK Utility software, your ST-Link does not need to install drivers separately, and can be used directly (such as Keil, IAR online debugging, downloading, etc.).

STM32 ST-LINK Utility software can quickly read STM32 chip model, ID, version and other information in addition to fast reading FLASH data.



Figure 2.1 STM32 ST-LINK Utility interface

2.2 Software installation

The STM32 ST-LINK Utility integrated development environment is relatively simple

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to install (basically all the way down). Take the "STM32 ST-LINK Utility v3.1.0 setup.exe" software downloaded above as an example.

1. Unzip the software, double-click "STM32 ST-LINK Utility v3.1.0.exe" to enter the process of preparing for installation (extraction).

2. Go to the installation wizard and click "Next".



3. Agree to the license and click "Yes".

Please read the following license agreement (carefullu	
riease reau the following license agreement (
Press the PAGE DOWN key to see the rest of	of the agreement.	
SOFTWARE LICENSE AGREEMENT		^
By using this Licensed Software, You are ag conditions of this License Agreement. Do not read and agreed to the following terms and c implies automatically the acceptance of the f indicate your acceptance or NON-acceptance ACCEPT' as indicated below in the media.	reeing to be bound by the terms and t use the Licensed Software until You have conditions. The use of the Licensed Software following terms and conditions. Please ce by selecting 'I ACCEPT' or 'I DO NOT	~
, Do you accept all the terms of the preceding setup will close. To install STM32 ST-LINK L	License Agreement? If you choose No, the Jtility, you must accept this agreement.	

4. Select the installation path (default here) and click "Next".



InstallShield Wizard	×
Choose Destination Location Select folder where Setup will install files.	
Setup will install STM32 ST-LINK Utility in the following folder.	
To install to this folder, click Next. To install to a different folder, click B another folder.	Frowse and select
Destination Folder	Browse
C. V., 13 FMICIOElectonics (3 FM32 3 F-LINK Dully)	
InstallShield	
< Back Ni	ext > Cancel

5. Enter the installation process, less than a minute.

6. At the end of the installation, prompt "Install Driver", click "Next", and finally click "Finish" to complete the installation.

7. Click "Finish" to complete the installation of the host computer software and ST-LINK driver.

8. Check the version: Open Software - > Help - > About, you can see that the version is updated.



STM32 ST-LINK Utility	- 🗆 X
Memory display	Device Information
	Device
Address: UXU8000000 V Size: UX11B98 Data Width: 32 bits	S V Device ID
Device Memory Riesery Ele	Revision ID
Device Memory Binary File	Flash size
About STM32 ST-LINK Utility	× LiveUpdate
Files info	
ST-LINK OTHOUGH	K1075 04.0
Utility SIM32SI-LIN	K Utility.exe V3.1.0
STLinkUSBDriv	ver.dli v4.2.4.0
ST-LINK_CLI.e	xe v1.7.0
	K
STM32 ST-LINK Utility v.	31.0
Copuright (C) 2013 STMicroel	
www.st.com	
Disconnected Device ID :	Core State : No Memory Loaded

2.3 Upgrade steps

2.3.1 Hardware connection

The Mini3s/Mini3sPlus hardware connection method is shown in the figure below.



The hardware connection method of Mini3/M ini 4/Mini5 is shown in the figure below.



The hardware connection method of Mini4sPlus is shown in the figure below.



The connection method between the wall-mounted anchor and the downloader: unscrew the screws on the anchor and open the cover. Connect the ST-LINK V2 downloader to the J-TAG base of the main control board of the anchor through a flat cable J-TAG



The connection method between the anchor with waterproof cast aluminum shell and the downloader: open the cast aluminum shell of the anchor and connect the ST-LINK V2 downloader to the J-TAG base of the main control board of the anchor through the flat cable. Since there are many styles of J-TAG pin, please refer to the definition of J-TAG pin on the PCB. The SWD download mode requires VCC SWDIO SWCLK GND.



2.3.2 Software connection

Open the STM32 ST-LINK Utility software and connect the chip: Target-> Connect or click the connection shortcut button directly (as shown below). NOTE: THE PREMISE OF READING FLASH INFORMATION IS THAT NO READ PROTECTION IS ADDED. Before clicking the "Quick Connect", you can set the address, size, and data width.

₩ STM32 ST File Edit Vi	-LINK Utility iew Target	ST-LINK	uick C	onnect				-		×
File Edit View Target FILINK External Loader Help Image: State of the s							Device Device ID Revision ID Flash size	evice Informa STM32F 0x418 Rev Z 128KBvtes	ition 10x Conne Livel	ectivit
Address	0	4	8	С	ASCII					^
0x08000000	20010000	08007801	08009E51	08009E99	xQ	?	??			_
0x08000010	08009EB9	08009EC1	08009EC9	0000000	??????.					
0x08000020	00000000	0000000	00000000	08009ED1		?	?			
0x08000030	08009EDD	0000000	08009EE9	08009F15	????.	?	?			
0x08000040	08007849	08007849	08007849	08009EF5	1x1x1	x .	. ??			
0x08000050	08007849	08007849	08009F45	08007849	x x E	?	1x			
0x08000060	08007849	08009F59	08007849	08007849	1 x Y ? I :	×	1x			
0x08000070	08007849	08007849	08007849	08007849	x x	x .	.lx			~
<										>
20:25:59 : ST-LINK Firmware version : V231754 20:25:59 : Connected via SWD. 20:25:59 : Connetion mode : Normal. 20:25:59 : Debug in sleep and stop mode enabled. 20:25:59 : Device ID:0x418 20:25:59 : Device family :STM32F10x Connectivity Line										
Debug in sleep a	nd stop mode e	nabled.	Device ID:0x	418		6	ore State : Live	Update Disa	bled	

2.3.3 Load Hex

After connecting the chip in the previous step and correctly identifying the chip, open the program (hex) file that needs to be downloaded. Open hex files can be opened from the menu bar (File -> Open File) or directly drag the hex file to the FLASH area.

5 STM32 ST	-LINK Utility						_		×	
File Edit Vi	iew Target	ST-LINK E	External Load	er Help						
🖴 🖥 🖕 🜾 🔗 🏁 🥏 🔤 👘 open hex file										
Memory display	Memory display Device Information									
	DeviceSTM32F10x Connectivit									
Address: Ux	Address: 0x0000000 V Size: 0x1590 Data Width: 32 Dits V Device ID 0x418									
						Revision ID	Rev Z			
Device Memory	@ 0x0800000	0 : Files SP1.n	ex			Flash size	128KBvtes			
[SPI.hex], Addre	ess range: [0x0	8000000 0x080	09898]							
Address	0	4	8	с	ASCII				^	
0x0800000	20002288	08007A49	0800428D	0800428F	?". lz?B.	.?B				
0x08000010	08004291	08004293	08004295	0000000	?B?B?B.					
0x08000020	00000000	0000000	0000000	08004297		?В				
0x08000030	08004299	00000000	0800429B	0800429D	?B ?B .	?B	hov f	lo h		
0x08000040	08007A63	08007A63	08007A63	08007A63	c z c z c z	rag the	nex n	ie ne	ere	
0x08000050	08007A63	08007A63	080042B9	08007A63	c z c z ?B	cz				
0x08000060	08007A63	080042C9	08007A63	08007A63	c z ?B c z	cz				
0x08000070	08007A63	08007A63	08007A63	08007A63	c z c z c z	c z			~	
<									>	
20:31:24: [SPI.hex] opened successfully. 20:31:27: ST-LINK Firmware version : V2J17S4 20:31:27: Connected via SWD. 20:31:27: Connection mode : Normal. 20:31:27: Debug in sleep and stop mode enabled. 20:31:28: Device ID:0x418 20:31:28: Device flash Size : 128KBytes 20:31:28: Device flash Size : 128KBytes										
Debug in sleep a	Vebug in sleep and stop mode enabled. Device ID:0x418 Core State : No Memory Grid Selected									

2.3.4 Download Hex

After opening the hex file in the previous step, click "Download" (Target -> Program, or you can directly click the QUICK DOWNLOAD shortcut button, as shown below).

STM32 ST-LINK Utility	DAD	-		×
File Edit View Target ST-LINK External Loader Help				
🖴 🖥 🖕 🕼 🖉 🚫 🏚 🔜				
Memory display	De	Device Information		
	Device	STM32F	10x Conne	ectivit
Address: UXU8000000 V Size: UX11898 Data Width: 32 bits V	Device ID	0x418		
	Revision ID	Rev Z		
Device Memory @ 0x08000000 : File : SP1.nex	Flash size	128KBvtes	3	

A pop-up confirmation window, such as hex file path, verification method, etc., confirm that the information is correct, click "Start" to start the download program. For example, I named the executable hex file "SPI.hex", which is located on the desktop.



📕 STM32 ST-	-LINK Utility			_		×
File Edit Vi	ew Target	ST-LINK External Loader Help				
- 🚽 🖕	b 🕼 🥢	💯 🧶 🔜				
Memory display			De	evice Informa	tion	
			Device	STM32F1	10x Conne	ctivit
Address: 0x	08000000 ~	Size: 0x9B98 Data Width: 32 bits V	Device ID	0x418		
	File + CDT her		Revision ID	Rev Z		
Device Memory	File : SPI.ne.		Flash size	128KBvtes		
SPI.hex], Addre	ess range: [0x0	8000000 0x08009B98J				
Address	0	4 8 C ASCI	_			^
0x08000000	20002288	Operation of the second	× –			
0x08000010	08004291	0 Start address : 0x08000000				
0x08000020	0000000	0 File path ::ag_4A8T_V1.8.5.2_20180610\0jBJ\SPI.hex	Browse			
0x08000030	08004299	Click "Program" to start programming.				
0x08000040	08007A63	Click Start				
0x08000050	08007A63	Reset after programming				
0x08000060	08007A63	0 Start Cancel				
0x08000070	08007A63	00007403 00007403 00007403 022				~
<						>

The length of the download process is related to the size of the program, which is generally fast, and the appearance of "Verification... OK", indicating that the download was successful.

20:01.27 : [3F1.HEA] Opened succession: 20:31:27 : ST-LINK Firmware version : V211754			^			
20:31:27 : Connected via SWD. 20:31:27 : Connetion mode : Normal.						
20:31:27 : Debug in sleep and stop mode enabl 20:31:28 : Device ID:0x418 20:31:28 : Device flash Size : 128KBytes	ed. DONE					
20:31:28 : Device family :STM32F10x Conflectivity Line 20:35:30 : Flash memory programmed in 2s and 797ms.						
20:35:30 : verificationOk			~			
Debug in sleep and stop mode enabled.	Device ID:0x418	Core State : Live Update Disabled				

2.4 Configuration UWB parameters

After updating the firmware, you also need to use the AT command to configure the rate, channel, and address of the UWB device so that the module can be used normally. For specific operation, please refer to the user manual AT command configuration method of each UWB device.



3 Upgrade by J-FLASH

3.1 J-Flash introduction

J-Flash is a separate Flash ISP programming software released by SEGGER (J-LINK emulator manufacturer), which supports flashing HEX and BIN format files to the Flash of a single-chip microcomputer.

J-Flash is integrated into the J-LINK driver, and when we install the J-LINK driver, we also install J-Flash.

Note: Sections 3.2 and 3.3 are operated using the J-LINK V9.0 downloader

3.2 Install J-LINK driver

Double-click ^{ILink_Windows_V646驱动} to start the installation and click NEXT



Figure 3.2.1 JLINK driver installation

Click [I Agree] to continue the installation



图 3.2.2 JLINK 驱动安装

Set the installation options of the J-LINK driver, recommend the default installation method, and click [Install] to start the installation

SEGGER - J-Link V6.46	SEGGER - J-Link V6.46 Setup					
SEGGER	Choose optional components Choose optional components to be in	nstalled.) Link	
IoT	Install USB Driver for J-Link	安装USB驱动				
	Create entry in start menu	添加快捷键方式				
	Choose destination: Update existing installation Install a new instance	安装目录方式				
Discover SEGGER solutions for the Internet of Things	Destination Folder C:\Program Files (x86)\SEGGER\	JLink	Bro	wse		
Learn More		< Back II	nstall	Ca	ncel	

Figure 3.2.3 JLINK driver installation

The installation process pops up as shown in Figure 3.2. 4, click OK

Note: The "Keil MDK-ARM" check box appears because the MDK development software is installed on this computer. If there is other development software in the computer, other check items may appear, but you can not check it. If you do not check

💛 үсніот



the items, you can also click [OK] directly

🔜 SEGGER J-Link DLL Updater V6.46	×
1 applications found that can be updated to V6.46 of the J-Link software:	
☑ Keil MDK-ARM (DLL V6.46 in ''C:\KeiLv5\ARM\Segger'')	
Select All Select None	
Select the ones you would like to replace by this version. The previous version will be renamed and kept in the same folder, allowing manual "undo". In case of doubt in dnot renace existing DI (s)	
You can always perform this operation at a later time via start menu.	Ok Cancel

Figure 3.2.4 JLINK driver installation

Click [Finish] to complete the installation of the J-LINK driver



Figure 3.2.5 JLINK driver installation

3.3 Steps of upgrading by J-Flash

Find the J-LINK installation directory, the default installation location is shown in Figure 3.3.1, and double-click to open the J-Flash software



文件 主页 共享	查看 应用程序工具					~
> • 🛧 📙 > -	此电脑 > 本地磁盘 (C:) > Program Files (xB	16) > SEGGER > JLink		5 v	/ 搜索"JLink"	
	名称	修改日期	类型	大小		
A 1天1至151月	Devices	2020/7/29 10:54	文件夹			
OneDrive	Doc	2020/7/29 10:54	文件夹			
一世由院	ETC	2020/7/29 10:54	文件夹			
- 10-E00	GDBServer	2020/7/29 10:54	文件夹			
🥏 网络	RDDI	2020/7/29 10:54	文件夹			
	Samples	2020/7/29 10:54	文件夹			
	USBDriver	2020/7/29 10:54	文件夹			
	🔜 JFlash	2019/5/23 23:55	应用程序	855 KB		
	JFlashLite	2019/5/23 23:55	应用程序	184 KB		
	🛃 JFlashSPI	2019/5/23 23:55	应用程序	562 KB		
	🔜 JFlashSPI_CL	2019/5/23 23:55	应用程序	467 KB		
	🔜 JLink	2019/5/23 23:55	应用程序	293 KB		
	JLink_x64.dll	2019/5/23 23:56	应用程序扩展	14,252 KB		
	JLinkARM.dll	2019/5/23 23:55	应用程序扩展	13,452 KB		
	🔜 JLinkConfig	2019/5/23 23:55	应用程序	443 KB		
	JLinkControlPanel	2019/5/23 23:37	Chrome HTML D	3 KB		
	JLinkDevices	2019/5/23 23:45	XML 文档	148 KB		
	🛃 JLinkDLLUpdater	2019/5/23 23:55	应用程序	140 KB		
	🔜 JLinkGDBServer	2019/5/23 23:55	应用程序	395 KB		
	🛃 JLinkGDBServerCL	2019/5/23 23:55	应用程序	336 KB		
	🔜 JLinkLicenseManager	2019/5/23 23:55	应用程序	92 KB		
	JLinkRDI.dll	2019/5/23 23:55	应用程序扩展	313 KB		

Figure 3.3.1 Installation directory

After the software starts, a pop-up will pop up as shown in Figure 3.3.2, you can select the last retained J-Flash project, or you can choose to create a new project. Here we select Create a new project and click [Start J-Flash].

Junsa	SEGGE	R J-Flas	sh V6.46				_	\times
File	Edit	View	Target	Options	Window	Help		
						Welcome to J-Flash × Please select one of the following stat option: ① Open recent project. ① Create a new project. ① Do not show this message again. ⑤ Itart J-Flash		
	LOG							23
App 	Licatio J-Flash JLinkAR	n log : V6.46 M.dll V	started (J-Flash /6.46 (DL	. compiled 1 L compiled	May 23 201 May 23 20	9 17:50:48) 19 17:49:56)		^
<								> .
List o	of MCU	device	es read si	uccessfully	(7002 Dev	rices)		

Figure 3.3.2 J-Flash

As shown in Figure 3.3.3, click [...]



🔜 SEGGER J-Flash V6.46	_	\times
File Edit View Target Options Window Help		
Application log started - J-Flash V6.46 (JPLI ash compiled May 23 2019 17:50:48) - JLinkARM dll V6.46 (DLL compiled May 23 2019 17:49:56)		× •
List of MCU devices read successfully (7002 Devices)		_

Figure 3.3.3 J-Flash

Then click the drop-down arrow as shown in Figure 3.3.4 to find Nordic Semi as shown in Figure 3.3.5

Select device				×	
Manufacturer *					
Manufacturer	Device	Core	Flash size	RAM size	
Unspecified	ABM7	ABM7			
Unspecified	ABM9	ARM9			
Unspecified	ABM11	ABM11			
Unspecified	Cortex-A5	Cortex-A5			
Unspecified	Cortex-A7	Cortex-A7			
Unspecified	Cortex-A8	Cortex-A8			
Unspecified	Cortex-A9	Cortex-A9			
Unspecified	Cortex-A12	Cortex-A12			
Unspecified	Cortex-A15	Cortex-A15	-		
Unspecified	Cortex-A17	Cortex-A17	-		
Unspecified	Cortex-M0	Cortex-M0			
Unspecified	Cortex-M0+	Cortex-M0			
Unspecified	Cortex-M1	Cortex-M1			
Unspecified	Cortex-M3	Cortex-M3			
Unspecified	Cortex-M4	Cortex-M4			
Unspecified	Cortex-M7	Cortex-M7			
Unspecified	Cortex-M23	Cortex-M23			
Unspecified	Cortex-M33	Cortex-M33			
Unspecified	Cortex-R4	Cortex-R4			
Unspecified	Cortex-R5	Cortex-R5			
Unspecified	Cortex-R8	Cortex-R8			_
G Unspecified	BX	BX			
ation Unspecified	RISC-V	RISC-V	-		
lash V Unspecified	BV32	RISC-V	-		
nkARM. Unspecified	BV64	RISC-V	-		
Data and Co.d.	DTEE11	DTEE11		~	

Figure 3.3.4 J-Flash

	Select device					×	
	Manufacturer ×		•				
	Gigal	Device	^				
	Manufacture Hilsch	her		Core	Flash size	RAM size 🔥	
	Unspecified Holte	sk.		ABM7	-		
	Unspecified IDT			ARM9			
	Unspecified Irrine	on		ABM11			
	Unspecified Mary	all		Cortex-A5			
	Unspecified Maxir	m		Cortex-A7			
	Unspecified Medi	aTek		Cortex-A8			
	Unspecified Micro	ochip		Cortex-A9			
	Unspecified Micro	onas		Cortex-A12			
	Unspecified Micro	osemi		Cortex-A15			
	Unspecified Mind	Motion		Cortex-A17			
	Unspecified Nord	ic Semi		Cortex-M0			
	Unspecified NUVC	ton		Cortex-M0			
	Unspecified OK			Cortex-M1	-	•	
	Unspecified ON S	Semiconductor		Cortex-M3	-		
	Unspecified Qorv	0		Cortex-M4	•	•	
	Unspecified Realt	tek		Cortex-M7	•	•	
	Unspecified Rene	esas	~	Cortex-M23	-	· ·	
	Unspecified	Lortex M33		Cortex-M33	-	· ·	
	Unspecified	Lortex-H4		Lortex-H4		· ·	
	Unspecified	Lortex-H5		Lortex-HS	-		
OG	Unspecified	Lortex-H8		Lortex-H8			
	Unspecified	DA DICCV		DO DICOV		· ·	
-Flach V	Unspecified	D1/22		DISC V		· ·	
LinkARM	Unspecified	DVC4		DISC V		· ·	
	Unspecified	DTEE11		DTEE11		· · ·	
		111.6111					
					OK	Canad	
					UN	Cancer	

Figure 3.3.5 J-Flash

After clicking Nordic Semi, select the nRF52832_xxAA chip and click [OK] as shown in Figure 3.3.6

E	Select device				×	1
	Manufacturer Nord	ic Semi 💌	Core	Flach size	BóM size	
	Maria Sami	pDE51422 uuAA	Cotev M0	250 KD + 1 KD	16 K D	
	Nordic Semi	nBE51422_xxAB	Cortex-M0	128 KB + 1 KB	16 KB	
	Nordic Semi	nBF51422_xxAC	Cortex-M0	256 KB + 1 KB	32 KB	
	Nordic Semi	nRF51801_xxAB	Cortex-M0	192 KB + 1 KB	16 KB	
	Nordic Semi	nRF51802_xxAA	Cortex-M0	256 KB + 1 KB	16 KB	
	Nordic Semi	nBF51822_xxAA	Cortex-M0	256 KB + 1 KB	16 KB	
	Nordic Semi	nRF51822_xxAB	Cortex-M0	128 KB + 1 KB	16 KB	
	Nordic Semi	nRF51822_xxAC	Cortex-M0	256 KB + 1 KB	32 KB	
	Nordic Semi	nRF52810_xxAA	Cortex-M4	192 KB + 4 KB	24 KB	
	Nordio Somi	nPE52911_mAA	Corton M4	192 KB - 4 KB	24 KB	
	Nordic Semi	nRF52832_xxAA	Cortex-M4	512 KB + 4 KB	64 KB	
	Nordic Semi	hHF52832_XXAB	Lortex-M4	256 NB + 4 NB	32 NB	
	Nordic Semi	nHF52840_XXAA	Contex-M4	1024 KB + 4 KB 1024 KB + 56 Putee + 760 Putee	206 KB	
G						
ation 1ash V .nkARM.						







Click OK again, as shown in Figure 3.3.7

J HASH	SEGGE	R J-Flas	h V6.46		-		_	\times
File	Edit	View	Target	Options	Window	Help		
						Create New Project X Welc Plee C Target Device Nordic Semi nRF52832_xx4A Little endian Target Interface Speed (kHz) U U U U U U U U U U U U U		
3	LOG						-	8
App] - :	icatio -Flash LinkAR	n log s V6.46 M.dll \	started (J-Flash 6.46 (DL	compiled 1 L compiled	May 23 201 May 23 20	9 17:50:48) 19 17:49:56)		< ~ ~
<								>
List c	f MCU	device	s read s	uccessfully	(7002 Dev	ices)		

Figure 3.3.7 J-Flash

The following interface appears, as shown in Figure 3.3.8







nRF52832 requires the download of two hex files, one (application \Box nrf52832_qfaa.hex) and one (application), \Box s132_nrf52_6.1.0_softdevice.hex the entire download process is described below.

Run "File->Open data file" to find the protocol stack hex file, or drag the hex file directly into the J-Flash software

Name Value Address Out vit	Project - nev	w p 😐 🔍		D:\Deskt	op\s	132_	nrf52	2_6.1	.0_so	ftde	vice.ł	nex													×
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Figure 3.3. 9 J-Flash

Plug JLINK into the download port of the target board (Note: the download line should not exceed 10cm, the pin of the download port should be corresponding, the target board must be powered on), and then execute "Target->Connect", if the connection is successful, the content displayed is shown in Figure 3.3.10

File Edit View Target Options Window Help Project - new p. P P DDbetkop)s132_nf52_0.10_sofdevice.hex P Address Construction Hat correction USB [Device 0] Target interface SVD SVD P A B C D E F ASCII Address 0 1 2 3 4 5 6 7 8 9 B C D E F ASCII Address 0 1 2 3 4 5 6 7 8 9 B C D E F ASCII Address 0 1 2 3 4 5 6 7 8 9 B C D E F ASCII F Address 0	SEGGER J-FI	ash V6.46 - [new project	*]																	-		×
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00100 03 07 00 00 1F B5 06 F0 03 F8 80 E8 06 01 B5 06 07 03 F8 50 60 1F B0 03 03 03 00			000F0 7	в Ø	7 00	00	85	07	00	00	8F	07	00	00	99	07	00	00	٠			-
00110 00 F0 E0 E0 BB 1F B5 6F F0 01 00 00 90 40 10 03 900			00100 A	3 0	7 00	00	1F	B5	00	FØ	03	F8	8D	E8	ØF	00	1F	BD				
- Konthal [0] [0]: E000E000, CID: E106E000, PID: 000EB00C SCS-M7 - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB00C SCS-M7 - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [0] [1]: E0001000, CID: E106E000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106E000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106E000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106E000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106E000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106000, PID: 000EB001 TMM - Konthal [1] [5]: E0041000, CID: E106000, PID: 000EB001 TMM - Lait Alized successfully - J-Link fewal 1 TAG device. Core ID: 0x2BA01477 (None) - Connected successfully Keady Connected Core Id: 0x2BA01477 Speed: 4000 kH M			00110 0	10 F	0 E0	BB	1F	B5	6F	FØ	01	00	00	90	40	10	03	90		.0.		· •
Connected Successfully Connected Core Id: 0x2BA01477 (None) Connected Core Id: 0x2BA01477 Speed: 4000 kH			00100 0	0 01	A 194	00	AD	DU DU	10	20	00	20	00	ΩD	49	90	99	P0		•	; D	
- KonTh51[0][0]: E0000E000, CID: B105E000, FID: 000EB002 SCS-M7 - KonTh51[0][1]: E0001000, CID: B105E000, FID: 002EB003 FVB - KonTh51[0][2]: E00040000, CID: B105E000, FID: 000EB001 ITM - KonTh51[0][5]: E0041000, CID: B105E000, FID: 000EB025 FTM - Linitized successfully - Unit and I TAK device. Core ID: 0x2EM01477 (None) - J-Link fund I TAK device. Core ID: 0x2EM01477 (None) - J-Link fund I TAK device. Core ID: 0x2EM01477 (None) - Connected successfully Keedy Connected Core Id: 0x2EM01477 Speed: 4000 kH	106						-															8
- Buffillo 102: B0002000, CH: B105B000, FH: 002B001 FF: - Buffillo 13: B0004000, CH: B105B001, FH: 002B001 FF: - Buffillo 13: B0040000, CH: B105B000, FH: 000BB01 FF: - Buffillo 15: B004000, CH: B105B000, FH: 000BB01 FF: - Buffillo 15: B004000 H: (Fixed) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - J-tink fund 1 JFAG device. Core ID: 0x2BA01477 (None) - Longeted Successfully	- ROMTb1[0][0]	: E000E000, CID: B105E00	D, PID: 000BB000		M 7																	~
- RomFb1[0][3]: E0000000, CID: B105E00D, FID: 003EB01 ITM - RomFb1[0][4]: E0040000, CID: B105900D, FID: 000EB94I TFUV - RomFb1[0][5]: E0041000, CID: B105900D, FID: 000EB94I TFUV - NamFb1[0][5]: E0041000, CID: B105900D, FID: 000EB94I TFUV - Target interface speed: 4000 MHr (Fixed) - J-Link face speed: 4000 MHr (Fixed) - J-Link face speed: 4000 MHr (Fixed) - Connected successfully Ready Connected	- ROMTb1[0][2]	: E0002000, CID: B105E00	D, PID: 003BB002	S FPB																		
- Ready Connected Core Id: 0x2BA01477 Speed: 4000 kH //	- ROMTL1[0][3]	: E0000000, CID: B105E00	D, PID: 003BB00:	ITM	,																	
- Executing init sequence - Init ilited successfully - Target interface speed: 4000 kH (Fixed) - J-Link found 1 JTAG device. Core ID: 0x2BA01477 (None) - Connected successfully Ready Connected Core Id: 0x2BA01477 Speed: 4000 kH //	- ROMTb1[0][4]	: E0040000, CID: B105900	D. PID: 000BB925	5 ETM	,																	
- In thaired successfully - Target interface speed: 4000 kHz (Fixed) - J-Link found 1 JTAG device. Core ID: 0x2BA01477 (None) - Connected successfully Ready Connected Core Id: 0x2BA01477 Speed: 4000 kH //	- Executing in	it sequence																				
- J-Link found 1 JTAG device. Core ID: 0x2BA01477 (None) - Connected successfully	- Target inter	ea successfully face speed: 4000 kHz (Fi:	xed)																			
Connected successfully	- J-Link found	1 JTAG device. Core ID:	0x2BA01477 (Nor	ne)																		
د	- Connected su	ccessfully																				~
Ready Connected Core Id: 0x2BA01477 Speed: 4000 kH	<						-															>
	Ready											С	onn	ected	ł	Cor	e Id:	0x2	BA0147	7 S	beed: 400	0 kH /

Figure 3.3.10 J-Flash

Press the shortcut key F4 or execute "Target->Manual Programming->Erase Chip" to erase the chip, as shown in Figure 3.3.1 1, the chip is erased successfully, click OK

	v Target	Options W	/indow Help																	
🔝 Project - ne	w p	• 🛛	D:\Deskt	op\s	132_	nrf52	2_6.1	.0_sc	ftde	vice.	hex									
Name	Value		Address:	0x0			_	x1	x2	×4										
Host connection	USB [Device	: 0]				-				·· <u>·</u>		-	-							
Target interface	SWD		Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ASCII
Init SWD speed	4000 kHz		00000	00	04	ии	20	Eà	08	uи	NN	7D	05	ии	ии	CA	68	ии	иu	
SWD speed	4000 kHz		00010	87	05	00	00	91	05	00	00	9B	05	00	00	00	00	00	00	
			00020	00	00	00	00	00	00	00	00	00	00	00	00	ØD	09	00	00	
мси	Nordic Semi	nRF5283	00030	A5	05	00	00	00	00	00	00	AF	05	00	00	B9	05	00	00	
Lore	Lortex-M4		00040	C3	05	00	00	CD	05	00	00	D7	05	00	00	E1	05	00	00	
Check core ID	Yes (0x4BA0	0477)	00050	EB	05	00	00	F5	05	00	00	FF	05	00	00	09	06	00	00	
Use target RAM	64 KB @ 0x2	20000000	00060	13	06	00	00	1 D	06	00	00	27	06	00	00	31	06	00	00	
_			00070	38	06	ØЙ	ØЙ	45	06	ØØ	ØØ	4F	06	ЮЙ	ØŊ	59	06	00	00	;EO
Flash memory	Internal bank	J-Flash V6.	.46												×	81	Ø6	00	00	
Base address	516 KP														- 1	69	Ø6	00	00	
1 10311 3120	STORD														[D-1	06	00	00	
			Frase operation	com	nleter	d suc	cossf	ully -	Com	nlate	d aft	or 0.0	00		- [FO	90	00	00	
			crase operation	com	pieter	a suc	CESSI	uny	Con	piere	u an	er 0.0	155 30		- 1	F7	00	00	00	
															1	21	07	99	99	
		-														49	67	00	00	+5
											Г				1	21	65	ИИ	ИИ	S]
												1	哺定			99	07	00	00	<i><</i>
				-												ØF	00	1F	BD	
			00110	00	FØ	EØ	BB	1F	B5	6 F	FØ	01	00	00	90	40	10	03	90	
			00100	60	00	M 1	00	ЛD	DO	10	20	013	٢0	66	ΠD	49	90	66	DU	0 ÷
3 106																				
= 129 sectors	2 renges (- 0v1	0001	FFF														
- Start of pre	paring flash	n programmin;	g	OA1	.0001															
- End of prepa	ring flash p	programming	£111.																	
- End of deter	mining dirty	rty areas in / areas	IIash cache																	
- CPU speed co	uld not be n	neasured.																		
- Start of era	sing chip ng chip																			
- Start of res	toring																			
- End of resto	ring		11	1 . C	0	000														
 - trase operat 	ion complete	ea successfu	iiy — complete	a art	er U	. 099	sec													

Figure 3.3.11 J-Flash



Press the shortcut key F7 or run "Target->Production programming" to program the protocol stack hex, as shown in Figure 3.3.12, the hex download is successful, click OK

SEGGER J-Flash V6.46 - [new project	*]																	_		\times
File Edit View Target Options W	indow Help																			
Project - new p	D:\Deskt	op\s13. 0x0	2_nrf5	2_6.1	.0_so	ftde ×2	vice.l ×4	nex												23
Host connection USB [Device 0]	Address	0 1	2	3	4	5	6	7	8	9	۵	B	C	n	F	F	09011			
Target interface SWD	00000	00 0	4 00	20	E9	08	00	00	7D	05	00	00	C9	08	00	00		>		
Init SWD speed 4000 kHz SV L-Elash V6.46							×	00	9B	05	00	00	00	00	00	00				
								00	00	00	00	00	ØD	09	00	00		• • • •		
			_					00	AF	05 95	00	00	B9	05 05	00	00	•••••	• • • •		
En larget erased, programmed	and verified suc	cessfull	y - Coi	nplet	ed aft	ter		00	FF	05 05	90 00	00 00	БТ Ø9	05 Ø6	00 00	00 00				
Us								00	27	06	00	00	31	06	00	00		,	1	
FI								00	4F	06	00	00	59	06	00	00	;E	0	Y	
Ba					确定		1	00	77	06	00	00	81	06	00	00	сп	•••••		
Fla					вш	MIN	_	00	9F	Ø6	90	00	H9 D1	106 106	00 00	00 00		• • • •		
	000B0	DB Ø	6 00	00	E5	06	00	00	EF	06	00	00	F9	06	00	00				
	00000	03 0	7 00	00	ØD	07	00	00	17	07	00	00	21	07	00	00			•	
	000D0	2B Ø	7 00	00	35	07	00	00	3F	07	00	00	49	07	00	00	+5	?	I	
	000E0	53 0	7 00	00	5D	07	00	00	67	07	00	00	71	07	00	00	S]	•••a	· · · q · · ·	
	000F0	7B 0	7 00 7 00	00	85 1 F	07 B5	00 00	E0	8F 03	67 F8	80	60 F8	99 ØF	07 00	1 F	BD	٠	• • • •		
	00110	00 F	0 E0	BB	1F	B5	6F	FØ	01	00	00	90	40	10	03	90			e	
	00100	60 0	A 141	00	лD	DØ	10	20	00	<u> </u>	99	ΩŊ	49	WO	99	TO.	0		: р	-
LOG																				X
 Frogramming range 0x00020000 - 0x000 End of flash programming Tlash programming performed for 1 re 0x0000 - 0x20FFF (38 Sectors, 182 F Start of verifying flash End of verifying flash Start of restoring 	125FFF (6 Se unge (155648 b B)	rtors, /tes)	24 KB)																	^
- Executing exit sequence																				
- De-initiaLized successfully - Target erased, programmed and verifi	ed successful	ly - Co	nplete	d aft	ter 2	. 789	sec													
<																				<u> </u>
														_						·
Ready										C	Conne	ected	1	Cor	e Id:	: 0x2	BA0147	7 Sp	eed: 4000) kH 🖉

Figure 3.3.12 J-Flash

Execute "File-> Open data file" to locate the application hex file, or drag the hex file directly into the J-Flash software, as shown in Figure 3 As shown in 3.13.

SEGGER J-Fl	ash V6.46 - [new project	*]	Holp																	- 0	×
Project - net	w p	D:\	Deskto	p∖n x260	rf528	332_0	qfaa.	hex	×2	×4											×
Host connection	USB [Device 0]	Add	ress	0	1	2	3	4	5	6	7	8	9	A	B	С	D	E	F	ASCII	
Init SWD speed SWD speed	4000 kHz 4000 kHz	26	300 310 320	20 E9 00	63 60	00 02 00	20 00 00	EB	63 69	02 02 00	00 00	ED	63 ØØ	02 02 00	00 00	60 60	63 63	02 00 02	00 00	· · · · · · · · · · · · · · · · · · ·	
MCU Core	Nordic SeminRF5283 Cortex-M4	26	030 040	F1 93	63 7B	02 02	00 90	00 F7	00 63	00 02	00 00	F3 87	63 87	02 02	00 00	E7 AB	81 81	02 02 02	00 00	.cc	
Endian Check core ID Use target RAM	Little Yes (0x48A00477) 64 KB @ 0x20000000	26	050 060	C3 F7	81 63	02 02	00 00	F7 77	63 85	02 02	00 00	31 91	72 85	02 02	00 00	43 D9	7F 7E	02 02	00 00	C1rCo .cw~	
Flash memory Base address	Internal bank 0 0x0	26 26	070 080	F7 F7	63 63	02 02	00 00	F7 ED	63 7E	02 02	00 00	F7 F7	63 63	02 02	00 00	F7 F7	63 63	02 02	00 00	.cccc	
Flash size	516 KB	26	390 360	D7 F7	81 63	02 02	00 00	F7 F7	63 63	02 02	00 00	DF AB	81 85	02 02	00 00	F7 F7	63 63	02 02	00 00	c	
		26	900 900 980	F7 F7 9F	63 70	02 02 02	00 00	F7 F7	63 63	02 02 02	00 00	99 F7	63 63	00 02 02	00 00	99 F7	63 69	00 02 00	00 00	.ccc	
		26	0E0 0F0	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00		
		26: 26:	100 110	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00	00 00		
		92.	1.010	66	88	66	66	99	99	99	99	99	00	99	99	99	99	00	66		

Figure 3.3.13 J-Flash

Press the shortcut key F7 or execute "Target->Production Programming" to program

the application hex, as shown in Figure 3.3.12, the hex download is successful, click OK.

Then press the shortcut key F9 or run "Target->Manual Programming->Start Application" to run the programmed program.

When closing J-Flash, it will prompt whether to save the current project, here we can save the project configured this time, so that the next time you use it, you can directly open the saved project in the welcome interface, without configuring the project again.

3.4 Configuration UWB parameters

After updating the firmware, you also need to use the AT command to configure the rate, channel, and address of the UWB device so that the module can be used normally. For specific operation, please refer to the user manual AT command configuration method of each UWB device.



4 Upgrade by Keil

4.1 Develop software

Two pieces of software are required, the Keil5 installation software mdk520 and Keygen. Please note that enterprise users are requested to purchase genuine Keil software, and YCHIOT will not bear any consequences if there is a legal dispute caused by using Keygen.

4.2 Install KEIL 5

📲 mdk520 Double-click to start the installation and click Next Setup MDK-ARM V5.20 \times Welcome to Keil MDK-ARM **ARM**[®]KEIL Release 5/2016 Microcontroller Tools This SETUP program installs: MDK-ARM V5.20 This SETUP program may be used to update a previous product installation. However, you should make a backup copy before proceeding. It is recommended that you exit all Windows programs before continuing with SETUP. Follow the instructions to complete the product installation. Keil MDK-ARM Setup << Back Next>> Cancel

Figure 4.2.1 MDK520 installation startup screen

Select I agree to all terms of the preceding License Agreement, click Next;

License Agreement	
Please read the following license agreement carefully.	Microcontroller Tools
To continue with SETUP, you must accept the terms of the License Agreement. To acce	ept the agreement, click the check box below.
END USER LICENCE AGREEMENT FOR MDK-ARM	^
THIS END USER LICENCE AGREEMENT ("LICENCE") IS A L	EGAL AGREEMENT BETWEEN
YOU (EITHER A SINGLE INDIVIDUAL, OR SINGLE LEGAL ENT FOR THE USE OF THE SOFTWARE ACCOMPANYING T	(ity) and arm limited ("arm") This licence, arm is only
WILLING TO LICENSE THE SOFTWARE TO YOU ON COND	DITION THAT YOU ACCEPT ALL
OTHERWISE USING OR COPYING THE SOFTWARE YOU IN	NDICATE THAT YOU AGREE TO
BE BOUND BY ALL OF THE TERMS OF THIS LICENCE. IF	YOU DO NOT AGREE TO THE
I A I A MARA AN	
I agree to all the terms of the preceding License Agreement	

Figure 4.2.2 mdk520 License Agreement screen

Select the appropriate installation path to install Keil5, if there are no special requirements, install it according to the default path.

Ider Sele Select the	e tion e folder where SETUP will install files.		
00.00t (II			Microcontroller Tools
Press 'Nev	t' to install MDK-ARM to these folders. Press 'Browse' to sele	ot different folders for installation	
FIESS NEX	a to install MDR AnM to these folders. Pless blowse to sele	ee unereni rouers for Installation.	
Destinat	ion Folders		1
Core:	C:\Keil_v5		Browse
Pack:	C:\Keil_v5\ARM\PACK		Browse
	· -		
Keil MDK	-ARM Setup		

Figure 4.2 3 MDK520 Select the installation path

Fill in personal information, which can be filled in at will, and do not need to fill in real information.

 ҮСНІОТ

ustomer Information Please enter your inform	ation.	ARM [®] KEIL Microcontroller Tools				
Please enter your name,	the name of the company for whom you work and your E-mail address.					
First Name:	[
Last Name:	[inlingpeng@live.cn					
Last Name: Company Name:	linlingpeng@live.cn					
Last Name: Company Name: E-mail:	Inlingpeng@live.cn					

Figure 4.2.4 The MDK520 information filling interface

Until completion, the desktop generates a Keil shortcut icon, and the installation prompt of the pack automatically pops up.

Welcome to the Keil Pack Installer Pack Installer is a utility for managing Software Packs on the local computer and provides the following windows:
\mbox{Packs} : List and manage Software Packs. Install a Pack for access within $\mu Vision.$
$eq:Example:List example projects. Copy projects and launch \mu Vision for testing examples.$
Devices : List supported devices. Select a device to show related Packs and examples.
Boards : List supported boards. Select a board to show related Packs and examples.
Pack Installer connects to <u>www.keil.com/pac</u> to obtain the published Software Packs. To install a local Software Pack use File - Import from the menu.
Show this dialog at startup

Figure 4.2.5 Pack Installer

4.3 KEIL 5 PACK INSTALLATION

Click OK to enter the package installation interface (if it does not pop up, click ^(M) on the menu bar).

Figure 4.3.1 Keil 5 Menu Bar

In the Pack column, all the types of single-chip microcomputers are listed, and there



is an Install button on the right side of each single-chip microcomputer, to develop which single-chip microcomputer, click the corresponding Install, and the corresponding package will be automatically installed. For the single-chip microcomputer used in the device hardware, select the corresponding model as shown in the following table. Taking STM32F103T8U6 as an example, the project packages that must be downloaded are:

ARM::CMSIS Wedge::ARM_Complier Keil::MDK-Middleware Wedge::STM32F1xx DFP

Model	MAIN CONTROL SINGLE-CHIP MICROCOMPUTER
Mini3	STM32F103T8U6
Mini3s	STM32F103T8U6
Mini3sPlus	STM32F103T8U6
Mini4sPread	STM32F103T8U6
Mini4	STM32F103RCT6
Mini5	STM32G070RBT6
ProAnc (STM32).	STM32F103RCT6
ProCard (NRF52832)	NRF52832
Protag (NRF52832).	NRF52832
Protag (STM32).	STM32F103T8U6

Table 4.3.1 List of core microcontrollers of different UWB devices

🛞 Pack Installe	er - D:\Program Files\Keil5\AR	M\PACK				- 🗆 ×
File Packs Wi	indow Help					
2 Device: S	TMicroelectronics - STM32F103T	8				
1 Devices	Boards		₽	Packs Examples		
Search:	• ×			Pack	Action	Description
Device	/	Summary		Device Specific	2 Packs	STM32F103T8 selected
	STM32F103R4	ARM Cortex-M3, 72 MHz, 6 kB RAM, 16 kB ROM	•	Keil::STM32F1xx_DFP	🔶 Up to d.	STMicroelectronics STM32F1 Series Device Support, Drivers and Exa
	STM32F103R6	ARM Cortex-M3, 72 MHz, 10 kB RAM, 32 kB ROM		E-Keil::STM32NUCLEO_BSP	Up to d.	STMicroelectronics Nucleo Boards Support and Examples
	STM32F103R8	ARM Cortex-M3, 72 MHz, 20 kB RAM, 64 kB ROM	- 1	⊟ Generic	20 Packs	
	STM32F103RB	ARM Cortex-M3, 72 MHz, 20 kB RAM, 128 kB ROM	- 1	ARM::CMSIS	Up to d.	CMSIS (Cortex Microcontroller Software Interface Standard)
	STM32F103RC	ARM Cortex-M3, 72 MHz, 48 kB RAM, 256 kB ROM	- 1	ARM::CMSIS-Driver_Validation	Install	CMSIS-Driver Validation
	STM32F103RD	ARM Cortex-M3, 72 MHz, 64 kB RAM, 384 kB ROM		ARM::CMSIS-FreeRTOS	Install	Bundle of FreeRTOS for Cortex-M and Cortex-A
	STM32F103RE	ARM Cortex-M3, 72 MHz, 64 kB RAM, 512 kB ROM	-	ARM::CMSIS-RTOS_Validation		CMSIS-RTOS Validation
	STM32F103RF	ARM Cortex-M3, 72 MHz, 96 kB RAM, 768 kB ROM		ARM::mbedClient	Install	ARM mbed Client for Cortex-M devices
	STM32F103RG	ARM Cortex-M3, 72 MHz, 96 kB RAM, 1 MB ROM		ARM::mbedTLS	Install	ARM mbed Cryptographic and SSL/TLS library for Cortex-M devices
	STM32F103T4	ARM Cortex-M3, 72 MHz, 6 kB RAM, 16 kB ROM		B-ARM::minar	Install	mbed OS Scheduler for Cortex-M devices
	STM32F103T6	ARM Cortex-M3, 72 MHz, 10 kB RAM, 32 kB ROM		Huawei::LiteOS	Install	Huawei LiteOS kernel Software Pack
	STM32F103T8	ARM Cortex-M3, 72 MHz, 20 kB RAM, 64 kB ROM		Keil::ARM_Compiler	Up to d.	Keil ARM Compiler extensions for ARM Compiler 5 and ARM Compi
	STM32F103TB	ARM Cortex-M3, 72 MHz, 20 kB RAM, 128 kB ROM	- 1	Keil::Jansson	Install	Jansson is a C library for encoding, decoding and manipulating JSOI
	STM32F103V8	ARM Cortex-M3, 72 MHz, 20 kB RAM, 64 kB ROM	-	Keil::MDK-Middleware	Up to d.	Middleware for Keil MDK-Professional and MDK-Plus
	STM32F103VB	ARM Cortex-M3, 72 MHz, 20 kB RAM, 128 kB ROM		⊕ lwIP:IwIP	Up to d.	IwIP is a light-weight implementation of the TCP/IP protocol suite
	STM32F103VC	ARM Cortex-M3, 72 MHz, 48 kB RAM, 256 kB ROM		Micrium::RTOS	Install	Micrium software components
	STM32F103VD	ARM Cortex-M3, 72 MHz, 64 kB RAM, 384 kB ROM		Oryx-Embedded::Middleware	Install	Middleware Package (CycloneTCP, CycloneSSL and CycloneCrypto)
	STM32F103VE	ARM Cortex-M3, 72 MHz, 64 kB RAM, 512 kB ROM	-	RealTimeLogic::SharkSSL-Lite	Install	SharkSSL-Lite is a super small and super fast pre-compiled SharkSSL
	STM32F103VF	ARM Cortex-M3, 72 MHz, 96 kB RAM, 768 kB ROM		RealTimeLogic::SMQ		Simple Message Queues (SMQ) is an easy to use IoT publish subscril
	STM32F103VG	ARM Cortex-M3, 72 MHz, 96 kB RAM, 1 MB ROM		wolfSSL::CyaSSL	Oeprec.	Light weight SSL/TLS and Crypt Library for Embedded Systems
	CT 100540070		-			ŀ
Output						4
Refresh Pack desc	riptions					
Update available f	for Keil::STM32F3xx_DFP (installed	d: 1.3.0, available: 1.4.0)				
update available f	or Kell::STIVI32F4XX_DFP (Installed	1: 2.9.0, available: 2.11.0)				
Ready						ONLINE

Figure 4.3 2 Firmware library installation selection

If users cannot update Pack Device normally, you can choose manual installation, find the single-chip microcomputer model to be developed, the summary bar will appear blue words, click will automatically link to the download page. Click the Download button to download, double-click the downloaded Keil.STM32F1xx_DFP.2 1.0, start the installation, the same effect as the previous automatic installation.

воокs Links	and nome audio equipment LCD parallel interface, 8080/6800 modes - 5 V-tolerant I/Os - Timer with quadrature (incremental)			
Contact Information	encoder input - 96-bit unique ID	Device Family Pack		
Corporate Sales Channels	Core ARM Cortex-M3, 72 MHz	Support for this device is contained in: STMicroelectronics STM32F1 Series		
Distributors	Memory 20 kB RAM, 64 kB ROM	Device Support, Drivers and		
	Clock & Power 2.00 V 3.60 V, 72 MHz	Examples		
	Communication SPI, I2C, CAN, USART, USB, Device			
	Timer/Counter/PWM 4 x 16-bit Timer			

Figure 4.3 3 Install the Device Pack manually

4.4 Keygen cracks

Please note that enterprise users are requested to purchase genuine Keil software, and the company will not bear any consequences if there is a legal dispute caused by the use of Keygen!!! Open Keil5 as an administrator and open License Management.

💛 үсніот

W _s	C:\Users\linli\Desktop\sw_M	ini3s\Mir	i3s_f103_V1.8_dma_plus_vcp\Nano_f103_V1.8_dma_plus_vcp\USER\SF
File	Edit View Project Flash	Debug	Peripherals Tools SVCS Window Help
	New	Ctrl+N	📔 🥐 🏗 🐘 🕸 🕸 🕸 🕸 🖉 🖉 🖉 GetRecSwtich 🛛 🔽 🛸
6	Open	Ctrl+O	🔽 🔊 🛔 🖶 🔶 🐡 🎒
	Close		main c
	Save	Ctrl+S	465
	Save As		466
9	Save All		467 -
	Device Database		468 Display_SwitchInfo(temp_switch); 469 slswitch = Transfer Byte(temp switch & 0x7f
	License Management		470 printf("slswitch =%02x\r\n", slswitch);
	Print Setup		471 port_DisableEXT_IRQ(); //disable ScenSor IR 472 led off(LED ALL):
4	Print	Ctrl+P	473
	Print Preview		474 if(inittestapplication(slswitch) == (uint32 475 ⊡ {
			176 1ed on (IRD AIL) · //to dignlaw error

Figure 4.4.1 Opening License Management

License Management	×
Single-User License Floating License Floating License Administrator FlexLM License	1
Customer Information Name: Company: Email:	Computer ID CID: CHLLI-RAWV8 Get LIC via Internet

Figure 4.4.2 License Management interface

Copy the CID, open the crack file, Keil_ARM_MDK_5.00_Keygen_serial_Crack and click Generate to generate a Keygen

🗲 Keil Generic Keygen - EDGE 🛛 🗙
Keil Embedded Horkbench
-Keygen
CID: CHLLI-RAWV8 Target ARM Prof. Developers Kit/RealView MDK
ATTTG-VC0DN-12BLE-5FS33-8EHBS-C3HY1
Generate Exit

Figure 4.4.3 Screenshot of how to use the keygen

Fill in Keil's LIC with the obtained Keygen, click Add LIC, and the crack is successful.

New License ID Code (LIC):		Add LIC	Uninstall
			^
			~
	Close		Help

4.5 Open the project

Under the Project->MDK folder, open the project, and the interface is shown in the following figure.



Figure 4.5 Developing the project file interface

4.6 Compile and download

In Target->Debug, select the downloader as ST-LINK Debugger, set the hardware emulation to ST-Link, and click Settings, SWD download method, speed is 4M.

Device Target Output Listing User C/C++ Asm Linker Debug Utilities						
C Use Simulator with restrictions	Settings	(Use:	ST-Link Debugger	•	Settings	
Limit Speed to Real-Time			ULINK Pro Cortex Debugger CMSIS-DAP Debugger	^		
✓ Load Application at Startup ✓ Run to main()		🔽 Load A	J-LINK / J-TRACE Cortex Fast Models Debugger Cortex-M		main()	
Initialization File:		Initializatio	ST-Link Debugger			
	Edit		PEMicro Debugger NULink Debugger		Edit	

Figure 4.6.1 Downloader settings

📓 C:\Users\linli\Desktop\sw_Mini3s\Mini3s_f103_V1.8_dma_plus_vcp\Nano_f103_V1.8_dma_plus_vcp\USER\SPI.uvprojx - 礦ision						
File Edit View Pro	ect Flash Debug Peripherals Tools SVCS Window Help					
📄 💕 🛃 🍠 🕹 🗉	a 🖺 🔊 で ← → 陀 🏗 🎘 準 準 /// /// // @ GetRecSwtich 🛛 🔽 🗟 🌮 🍭 ● ○ 🔗 桑 🔲 🔹 🔦					
🔅 🗳 🕮 📦 📇 1	🗱 TREK1000 🔤 🔊 🛔 🖷 🔶 🐡 🏟					
Project	A 🖬 📄 main.c					
Project: SPI	1 #include "led.h" 2 #include "delay.h" *********************************					

Figure 4.6.2 Compile and download buttons

When finished, close it, click "Build ^{III}" to complete the compilation; Click "Download ^{III}" to consider the download successful.



5 Document Management Information Sheet

Subject	YCHIOT uwb device firmware update					
Version	V1.1					
Reference	[1] IEEE802.15.4-2011 or "IEEE Std 802.15.4™-2011"					
documents	(Revision of IEEE Std 802.15.4-2006). IEEE Standard for Local					
	and metropolitan area networks - Part 15.4: Low-Rate					
	Wireless Personal Area Networks (LRWPANs). IEEE Computer					
	Society Sponsored by the LAN/MAN Standards Committee.					
	Available from http://standards.ieee.org/					
	[2] Qorvo DW3000 Datasheet www.Qorvo.com					
	[3] Qorvo DW3000 User Manual www.Qorvo.com					
	[4] Partron (Now manufactured by Abracon) Dielectric Chip					
	Antenna, P/N ACS5200HFAUWB (Now ACA-107-T),					
	www.digikey.com also see www.abracon.com					
Creation time	2018/06/01					
Founder	Lynn					
Latest release date	2023/01/01					

Modifier	Date	Document change history
Lynn	2018-06-01	<u>V1.0</u>
		Release of V1.0 documentation
Lynn	2023-01-01	<u>V1.1</u>
		Support the device Mini4/Mini5/PROANC
		Change to YCHIOT new document style