Cc2652P Firmware Flashing

• Firmware acquisition

Download the ZNP firmware of CC2652P USB Dongle from the following link: <u>https://www.home-assistant.io/integrations/zha</u>

- Texas Instruments based radios (via the <u>zigpy-znp</u> library for zigpy)
 - CC2652P/CC2652R/CC2652RB USB stick or dev board hardware flashed with Z-Stack 3.x.x coordinator firmware
 - <u>CC1352P/CC1352R USB stick or dev board hardware flashed with Z-</u> Stack 3.x.x coordinator firmware
 - <u>CC2538 USB stick or dev board hardware flashed with Z-Stack 3.x.x</u> coordinator firmware



• Firmware flashing

CC2652P USB Dongle supports serial port Bootloader to flash firmware.

1.2.1 Enter the serial port Bootloader

There are two ways for Dongle to enter Bootloader:

Manual mode

Keep pressing the Boot button, restart the device, and release the Boot button after Dongle enters the serial port Bootloader.

• Automatically enter the serial port Bootloader through a python script

uriquy

Step to execute python script:

• Download, unzip and execute the file

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快复制 可	粘贴 人 剪切	移动到 复制到 删除 重命名	新建 文件夹	属性 / 历史记录			
	剪贴板	组织	新建	打开	选择		
→ * ↑	GC (D:) → Zigbee	> ZigBee 3.0 USB Dongle >	CC2652P1F → uart boo	ot test tool	ひ 2 搜索"□	art_boot_test_tool*	
Google	^ 名称	^ ,	修改日期	类型 :	大小		
release	📴 uartLog.p	y i	2021/8/6 11:27	JetBrains PyChar	13 KB		
ZigBee 〉							
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• Enter the serial port number inserted into the dongle



• After executing the file, enter 55 55 in the serial port assistant tool, and receive the returned result 00 CC, which means that the dongle has successfully entered the Bootloader.



Note: The serial port Bootloader does not enable hardware flow control.

1.2.2 Using Flash Programmer2 serial port flashing firmware



Note: There is no difference between the coordinator and routing firmware flashing steps.

Enable hardware flow control and generate firmware (optional)

If you need to enable the hardware flow control of the CC2652P USB Dongle, you need to use CCS to import the ZNP project to configure and compile the firmware that supports the hardware flow control.

Import the ZNP project of CC1352P into CCS

filmport CCS Projects	— 🗆 X
mport CCS Projects	1-0
Import existing CCS Projects or example CCS Projects.	
Select search-directory:	Browse
) Select archive file:	Browse
Discovered projects:	
	Select All
	Deselect All
	Refresh
Automatically import referenced projects found in same	e search-directory
✓ Copy projects into workspace Open <u>Resource Explorer</u> to browse a wide selection of example.	ample projects

Click [Browse] and select the ZNP project file under SDK:



Click [Finish]

• Configure engineering hardware flow control

Open the .syscfg configuration file in the ZNP project:

Znp_CC1352P_2_LAUNCHXL_tirtos_ccs	[Active - default]
> 🗊 Generated Source	
> 🖑 Binaries	
> 🗊 Includes	
> 😕 Application	
> 🔁 Common	
> 😕 default	
> 🔁 Stack	
> 😝 targetConfigs	
CC1352P_2_LAUNCHXL_fxns.c	
> 🍃 cc13x2_cc26x2.cmd	
> 🗭 src	
app.cfg	
🍛 Board.html	
🗋 makefile.defs	
Direction README.html	
\$ znp.syscfg	

Enable serial flow control in the UART option in the .syscfg configuration file:

A			
SD 🕀	Name	CONFIG DISPLAY LIAPT	
SHA2 1 🧭 🕀	The Headman	None	
SPI 1 🥑 🕀	Use Haroware	None	
Temperature 1/1 🥝 🕀	Data Direction	Send and Receive	*
Timer 🕀	Error Callback Function	Enter a function name to enable	
TRNG 1 🥝 🕀	Elow-Control		
UART 1 🛦 😽	Ring Buffer Size	32	
UART2	Interrupt Priority	7 - Lowest Priority	*
Watchdog	College Internet Details	0 Laurent Drindh	
 TI DRIVER APPS (2) 	software interrupt Profity	0 - Lowest Priority	-
Button 2 🤡 🕀	TX Interrupt FIFO Threshold	1/8	÷
LED 2 🥑 🕀	RX Interrupt FIFO Threshold	4/8	*
 INSTRUMENTATION (6) 	A Distance Device and Dis Orantemetica		
Bench (+)	A PINMUX Peripheral and Pin Conliguration		•
LogMain (+)	UART Peripheral	Any(UART0)	*
Logsite (+)	TX Pin	DI013/4 (XDS110 UART)	→ ⊖
		Connected to hardware(Un-suppress)	
LoggerTim (+)	DV D1-	DIG12/2 (VDC110 HADT)	- A
TUTUS DUNTIME (1)	RA PIN	A Connected to bardware/Universities	+ 0
 EXECUTION GRAPH (8) 			2
ExGr LoggerBut	CTS Pin	DI019/19 (Header)	* ⊡
Exer SYSBIOS	RTS Pin	DI018/36 (Header)	
ExGr tiutils		To a second s	
ExGr XDCtools	TX PIN Configuration While Pin is Not In Use		^
ExecGraphAdapter (+)			
ExecGraphFilter (+)	RX PIN Configuration While Pin is Not In Use		~
ExecGraphLogger			
ExecGraphSettings	CTS PIN Configuration While Pin is Not In Use		^
✓ RPC INFRASTRUCTURE (1)			
EmbeddedRPC TI UTILS (2)	RTS PIN Configuration While Pin Is Not In Use		^
JSON (+)	Other Dependencies		^

Then save and compile.

Adding routers to the gateway

The guide is for the routers that flashed with the official router firmware.

Download the official host computer SDK <u>https://www.ti.com.cn/tool/cn/SIMPLELINK-CC13X2-26X2-SDK</u>

下载		
SDK	影情形变量并(work) SIMPLELINK-CC13X2-26X2-SDK - SimpleLink [™] CC13x2 and CC26x2 software development kit 支持的产品和硬件	下载选项 🔔 订阅通知
SDK	软件开发套件 (SDK) SIMPLELINK-CC13X2-26X2-SDK-CLOUD — SimpleLink™ CC13x2 and CC26x2 software development kit cloud development on TI Resource Explorer	开始评估
	支持的产品和硬件	

• execute the Z-Tool.exe

	名称	修改日期	类型	大小	
	GlobalConfig.xml	2021/7/14 7:22	XML 文档	1 KB	
r.	TI.CommonLib.dll	2021/7/14 7:22	应用程序扩展	3,960 KB	
1	TI.Config.xml	2021/7/14 7:22	XML 文档	4 KB	
d.	TI.MasterKeyListDev.xml	2021/7/14 7:22	XML 文档	2 KB	
d.	TI.ZCmdMatchings.dll	2021/7/14 7:22	应用程序扩展	20 KB	
	TI.ZPI.dll	2021/7/14 7:22	应用程序扩展	436 KB	
	TI.ZPI.xml	2021/7/14 7:22	XML 文档	5,107 KB	
	TI.ZPortLib.dll	2021/7/14 7:22	应用程序扩展	60 KB	
	TI.ZScript.dll	2021/7/14 7:22	应用程序扩展	40 KB	
	😰 ZPI Help.chm	2021/7/14 7:22	编译的 HTML 帮	5,235 KB	
	Z-Tool.exe	2021/7/14 7:22	应用程序	320 KB	
	Z-Tool.exe.config	2021/7/14 7:22	XML Configurati	1 KB	
	ZToolConfig.xml	2021/7/14 7:22	XML 文档	1 KB	
	😰 Z-ToolHelp.chm	2021/7/14 7:22	编译的 HTML 帮	703 KB	

• Set the serial port baud rate to 115200

ile View Tools Window Help			
S & 2			
ZDO_UNBIND_REQ	^		
ZDO_MGMT_NWK_DISC_REQ	COM57 - COM57		
ZDO_MGMT_RTG_REQ	🔵 Log Enabled 🔻	Clear 🚽 Save	
ZDO_MGMT_BIND_KEQ	Settings		
ZDO_MGMT_DIRECT_JOIN_REQ	UE Scripts Serial Devices Sock	et Devices	
ZDO_MGMT_NWK_UPDATE_REQ	Ul Modify Serial Devices		
ZDO_MSG_CB_REMOVE	COM Port Name Dev	ice Alies Status	
- ZDO_STARTUP_FROM_APP_EX			
ZDO_SET_LINK_KEY			
-4 ZDO_GET_LINK_KEY			
ZDO_NWK_DISCOVERT_REQ			
ZDO_SET_REJOIN_PARAMETERS			
AddrMode OxO2 (ADDRESS_16)	BI	UISable	
DstAddr OxO Duration 120	Auto Scan		
TCSignificance 1	🖉 Scan all Enabled co	om ports (startup and manual scan)	
		OK Cancel Apply	
Significance de. Trust Center Significance			
	Active Device: COM57,	0x00124B0020CD0748, NONE	
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-Port Settings-			
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Port Alias COM57 Bate		Data Bits 8 ~ Parity	
Port Alias COM57 Rate		Data Bits 8 ~ Parity	
Port Alias COM57 Rate 115200	~	Data Bits 8 ~ Parity None ~	
Port Alias COM57 Rate 115200	~	Data Bits 8 ~ Parity None ~	
Port Alias COM57 Rate 115200 Handsbake	~	Data Bits 8 ~ Parity None ~	_
Port Alias COM57 Rate 115200 Handshake	~	Data Bits 8 ~ Parity None ~ Stop Bits	-
Port Alias COM57 Rate 115200 Handshake None	~	Data Bits 8 ~ Parity None ~ Stop Bits 1 ~	
Port Alias COM57 Rate 115200 Handshake None	~	Data Bits 8 ~ Parity None ~ Stop Bits 1 ~	
Port Alias COM57 Rate 115200 Handshake None	~	Data Bits 8 ~ Parity None ~ Stop Bits 1 ~	
C Port Alias COM57 Rate 115200 Handshake None	~	Data Bits 8 V Parity None V Stop Bits 1 V	
Port Alias COM57 Rate 115200 Handshake None	~	Data Bits 8 ~ Parity None ~ Stop Bits 1 ~	
Port Alias COM57 Rate 115200 Handshake None	~ ~	Data Bits 8 ~ Parity None ~ Stop Bits 1 ~ Cancel	



0x09 means establish network successfully



• Open network, and add device

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File View Tools Window Help		_
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ZDO_UNBIND_REQ	COM57 - COM57	
ZDO_MGMT_LQI_REQ	🕒 Log Enabled 🔻 🗙 Clear 🛛 😽 Save	
ZDO_MGMT_BIND_REQ	Start Time: 2021/7/28 10:09:30	
A ZDO_MGMT_DIRECT_JOIN_REQ	<rx>10:10:41.01 COM57 APP_CNF_BDB_SET_CHANNEL_SRSP (0x6F08) Status: SUCCESS (0x0)</rx>	
ZDO_MGMT_NWK_UPDATE_REQUEST	<tx> 10:10:41.01 COM57 APP_CNF_BD8_SET_CHANNEL (0x2F08) isPrimary: TRUE (0x1)</tx>	
ZDO_MSG_CB_REMOVE	Channel: CHNL_0x00001000 (0x1000)	
ZDO_STARTUP_FROM_APP_EX	CommissioningMode: (0x04) Network Formation (0x4)	
- 42 ZDO_SET_LINK_KEY - 42 ZDO_REMOVE_LINK_KEY	<rx> 10:11:09.17 COM57 APP_CNF_BDB_START_COMMISSIONING_SRSP (0x6F05) Status: SUCCESS (0x0)</rx>	
ZDO_GET_LINK_KEY	<rx>10:11:09.17 COM57 ZDO_STATE_CHANGE_IND (0x45C0) State: 9 (0x9)</rx>	
ZDO_JOIN_REQ	<rx>10:11:09.17 COM57 APP_CNF_BOB_COMMISSIONING_NOTIFICATION (0x+#80)</rx>	
	Commissioning Mode: 0x04 (Network Formation) (0x0) Commissioning Mode: 0x04 (Network Formation) (0x4)	
Addrede Ox02 (ADDRESS_16_BIT) DatAddr Ox0	<rx>10:11:09.38 COM57 APP_CNF_BDB_COMMISSIONING_NOTIFICATION (0x4F80)</rx>	
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