Using Flash Programmer Task for Standalone programming

By Jennie Zhang

Standalone Programming is widely used when user doesn't need a debugger for programming in CodeWarrior 10. Thus people only uses elf/s19 file to program target without using project and source files.

There is a very famous article written by Erich Styger regarding using "Flash File to Target" as a standalone programmer for target programming.

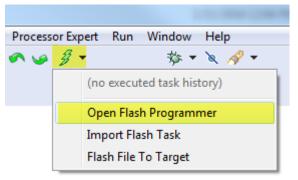
https://mcuoneclipse.com/2012/08/02/standalone-flash-programmer/

Besides this method, **Flash Programmer Task** is also good for standalone programming. As I know some customers prefer to use this method because it can also do checksum, dump flash,etc during programming. I will introduce how to utilize **Flash Programmer Task** step by step in the following for brainstorming. This article is based on CodeWarrior 10.6.4 and FRDM-K64 board, but the method is same for all Kinetis,HCS08,HCS12Z,etc devices

1. Open Target Task

Flash Programmer Task is contained in Target Task window. There are two methods to open Target Task:

Method 1: Open Target Task from "Open Flash Programmer"



Method 2: Open Target Task from CodeWarrior menu "Window", "Show view", "Others", "debug", "Target Task"

🥦 Show View	
have filter best	
type filter text	
🔉 🗁 CVS 🔹	
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© _☉ Breakpoints —	n I I
Cache	
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Executables	
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>>>> Jython Consoles	
Memory	
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MMU Configurator	
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100 Registers	
E Remote Launch	
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System Browser	
Target Tasks W= Variables	
▷ → Help ▷ → Make	
MQX MQX Performance Tool Category	
P&E Microcomputer Systems	
Processor Expert	
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OK Cancel	ן ר

Both of these two methods will trigger to open "Target Task" window:

🖹 Problems 📮 Console 📸 Target Tasks 🔀		÷	🕞 🖸 🗰 💥 🗎 ·	↑↓ ည⊿ ▽「	
Arrange By:Task Groups 🔻	E E	Tasks			0
i → Root		Name	Task Type	Run Configuration	

2. Create flash Programmer task

- 2.1 Before creating the target task, we need create a dummy K64 project for generating the connection configuration.
- 2.2 generate *.ttl file

*.ttf file is for targeting the needing target tasks for flash programming. Let's take K64 project as example. There are two methods to generate .ttf file.

Method 1: Generate flash Programmer target task from Target Task window:

Hit "new" button:



Then fill the Task Name, set Run Configuration as the dummy project connection configuration generated in 2.1.

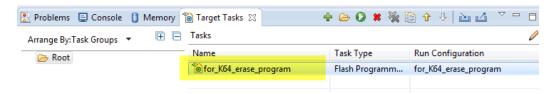
🥦 New Target Tasl	k 📃 🔀
Create a Target	Task
Task Name	for_k64_erase_program
Task Group	Root Browse
Run Configuration	K64_FLASH_Segger J-Link_Trace
Task Type	Flash Programmer for Kinetis
?	OK Cancel

Method 2: Generate a Target Task file by using "Flash File To Target" .

Flash File	e To Target		
rase and	program fla	sh devices.	
Simplified	l user interface	for Flash Programmer	
Connectio	on		
Connectio	on: 📥 K64_F	LASH_Segger J-Link_Trace 🔹	Edit New
Flash Con	figuration File		
K64FN1M	10M12.xml		▼ Browse
Unprot	tect flash mem	ory before erase	
File to Fla	sh		
File:	\${workspace	loc:/K64/FLASH/K64.elf}	Browse
Offset: 0x	0	File size is 0xdb654 bytes	
🔽 Save as	Target Task	2	
Task Nam	ie: for_K64_er	ase_program	
			0
?		Erase Whole Device Erase and F	Program Close

This screenshot is to generate a erase and program target:

Click on "Erase and Program" button, erase and program is executed and the target "for_k64_erase_program.ttf" is saved to local disk and contained in Target Tasks window:



2.3 Configure Flash Programmer Task

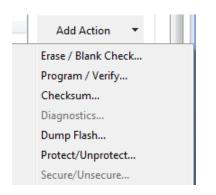
Double click on "for_k64_erase_program", the Flash Programmer Task is shown up

lash Device	25			Target RAM
Device Nar	me		Base Address	Address: 0x 1FFF0000
FTFE_PFlas	sh1M0 (128Kx64x1)		0×00000000	Size: 0x 00040000
				Verify Target Memory Writes
_				
				Þ
	Remove Device		III.	,
	e Remove Device		m	•
Add Device	e Remove Device		m	•
Add Device ash Progra		Description	m	Add Artion
Add Device ash Progra	ammer Actions	•	m K64\FLASH\K64.elf in FTFE_PFlash1M0 using restricted range 0x0000	
add Device	ammer Actions Operation	•		
Add Device	ammer Actions Operation	•		0000 - 0x000FFFFF

With the 2.2 method 1 Flash Programmer Actions field is empty, and with method 2 "Erase and Program" operation is loaded automatically. Double click on "Erase and Program", we can see how it is configured:

Add Program / Verify Action	Income Street of		×
Flash Devices		Use File from Launch Configuration	
Device Name FTFE_PFlash1M0 (128Kx64x1)	Base Address 0x00000000	File: C:\Users\b08277\workspace1064 File Type: Auto	\K64\FLASH\K64.elf Workspace) File System Variables
		 Frase sectors before program Restrict to Addresses in this Range Start: 0x 0000000 End: 0x 000FFFFF 	Verify after program Apply Address Offset Address: 0x 0000000
		Update Progr	am Action Update Verify Action Cancel

No matter in which of the cases, user can easy add Action in Flash Programmer Actions window to customize your own sequence. See the action options:



For example, if we want to dump a specific Flash range to a s19 file, we can add "Dump Flash". While adding "Checksum" can do checksum for flash.

	_program 🛛		Add Dump Flash Acti	on			
Device Nan			Flash Devices				
FTFE_PFlash	h1M0 (128Kx64x1)			0	File: C:\Users\b	Desktop\res.s19	Save As
			Device Name FTFE_PFlash1M0 (e Address 0000000 File Type: Srec		0000000
Add Device	Remove Device					End: 0x	000FFFFF
Flash Progra	mmer Actions					Update Dump Flash Ac	tion Cancel
Enabled	Operation	Descripti	C			Add Action 🔻	
V	Erase and Program	\Users\b08277\workspace1064\			restricted range 0x00000000 - 0.		=
	Dump Flash	FTFE_PFlash1M0 from 0x00000000				Duplicate Action	
V	Checksum	\${workspace_loc:/K64/FLASH/K64	.hex} in flash FTFE_PFlash	1M0 using restricte	ed range 0x00000000 - 0x000FFFF	F Remove Action	
		Add Cheo	cksum Action		Council Library		
		Flash D	Devices		Use File from Launch Conf	iguration	
uble click to	o configure	Devic	e Name	Base Address			
		FTFE	PFlash1M0 (128Kx64x1)	0x00000000	File: \${workspace_loc:/K64/	/FLASH/K64.hex}	
h Action					File Type: Auto	Wor	kspace) File System) Variable
					Compute Checksum Over	Restrict to Addresses in th	nis Range 👘 Apply Address Offse
					File on Target	Start: 0x 00000000	Address: 0x 0000000
					File on Host	End: 0x 000FFFFF	
					Memory Range	End. ox oddiririi	

2.4 Run Flash Programmer Task

After above configuration, click on Run button, Flash Programmer Task can do "Erase and Program", "Dump Flash", "Checksum" in continuously.

See attached video for running result.

Ē	Tasks	Run	• • • * *	▽ □ □ /
	Name	Task Type	Run Configuration	
	or_K64_erase	Flash Programm	for_K64_erase_pr	