How to Flash Two or More Binary Files Using MCUXpresso IDE

This document introduce how to flash two or more binary files using MCUXpresso IDE.

Also can find some debug configuration methods in it.

I use FRDM-K64 board , it is the same way with other boards. Also there is no difference between flashing two files and more than two files, so here only introduce how to flash two binary files.

The DOC mainly includes two parts:

When using P&E Micro probe, how to flash two binary files.

When using LinkServer(CMSIS-DAP) probe, how to flash two binary files.

Software: MCUXpresso IDE v10.0.2_411

Hardware: FRDM-K64

Suppose that, first binary file is in the current project "frdmk64f _driver_examples_gpio_led_output", the second one is "user_app_red_blink.srec/.bin"

- When using P&E probe, how to flash two binary files?

1. Change the firmware of FRDM-k64 board to P&E (You can refer to "Quick Start Guide for the Freescale Freedom Development Platform FRDM-K64F").

2. Create and edit new P&E Micro probe: **Right click project->Launch Configurations-> Create and edit new...-> P&E Micro probes**



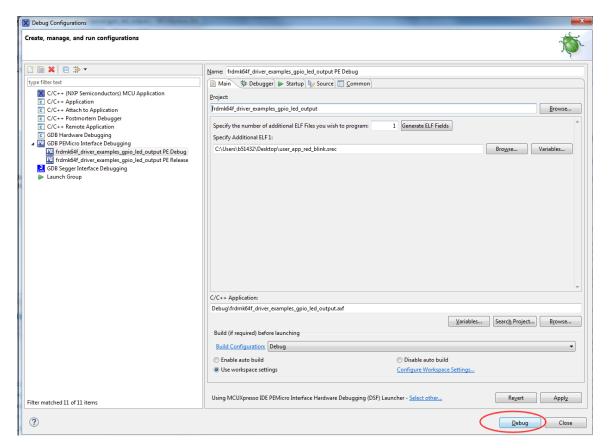
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	ß	Paste	Ctrl+V	69 */
	×	Delete	Delete	70⊖ int main(void)
Juntup startup_mk64f12.c	~	Source	belete	71 { 72 /* Define the init structure for th
b 😕 utilities		Move		<pre>573 gpio_pin_config_t led_config = {</pre>
🖻 🗁 Debug				74 kGPIO_DigitalOutput, 0,
👂 🗁 doc		Rename	F2	75 }; 76
	è	Import		77 /* Board pin, clock, debug console
	21	Export		78 BOARD_InitPins();
	_			79 BOARD_BootClockRUN(); 80 BOARD InitDebugConsole();
		Build Project		81
		Clean Project		82 /* Print a note to terminal. */
		Refresh	F5	83 PRINTF("\r\n GPIO Driver example\r\ 84 PRINTF("\r\n The LED is taking turn
		Close Project		85
		Close Unrelated Projects		86 /* Init output LED GPIO. */ 87 GPIO PinInit(BOARD LED GPIO, BOARD
		Puild Configurations	•	87 GPIO_PinInit(BOARD_LED_GPIO, BOARD_ 88
		Build Configurations		89 while (1)
		Build Targets	*	90 { 91 delay();
		Index	+	92 GPIO TogglePinsOutput(BOARD LED
		Run As	•	93 }
) Quickstart Panel (×)= Global V		Debug As	•	94 }
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3. Add the second file: Click the project under PEMicro Interface->Specify the number of additional ELF Files you wish to program to "1"-> Click "Generate ELF Fields"-> Click "Browse" button to choose the second binary file:

X Debug Configurations	
Create, manage, and run configurations	
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C/C++ Remote Application	Specify the number of additional ELF Files you wish to program:
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	Build Configuration: Debug
	Enable auto build Disable auto build
	Use workspace settings <u>Configure Workspace Settings</u>
Filter matched 11 of 11 items	Using MCUXpresso IDE PEMicro Interface Hardware Debugging (DSF) Launcher - <u>Select other</u> . Reget Apply
?	Close



4. Click "Debug" button to debug:



5. Now the two binary files are all flashed into chip, we can use "Memory" view to compare the date with binary file. (I configure the Memory view to Big Endian, please see the below picture. And about how to generate S-Record, Inter Hex and Binary files, please have a look at https://mcuoneclipse.com/2017/03/29/mcuxpresso-ide-s-record-intel-hex-and-binary-files/).



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- When using LinkServer(CMSIS-DAP) probe, how to flash two binary files?

In this way, Flash one file first, then flash the second one.

- 1. Change the firmware of FRDM-k64 board to LinkServer.
- 2. Click "LinkServer GUI Flash programmer" button:



3. Click "OK":



Probes discovered			
Connect to target: MK64FN1M	M0xxx12		
1 probe found. Select the probe t	o use:		
Available attached prob	es		
Name	Serial number/ID	Туре	Manufa
MBED CMSIS-DAP	024002015F2F1E48A2D1	LinkServer	MBED
Supported Probes (tick/untick to			
MCUXpresso IDE LinkServer (Inc. CIVISIS-DAP) probes		
Probe search options			
Search again			
-			
(?)	ОК		Cancel

3. Click "Browse" button to choose the first file to be flash, then click "OK". Note: here only support .elf .axf and .bin file, and for a bin file you must also provide an appropriate base address.



LinkServer GUI Flash programmer		×
Program Flash using MBED CMSIS-D O Image file " not found	AP	Gumu
Options		
📝 Display progress log	Reopen on completion	
Repeat on completion	Run flash command and copy to clipboard	
Just copy flash command to clipboar	d 🔲 Confirm command before executing	
Connection Options		
Use JTAG interface		
Additional options		
LinkServer connect script		Browse
Flash Driver		
Flash driver	<default></default>	Browse
Group		
Program flash memory Erase flash mer	nory Resurrect locked Kinetis device	
Select file C:\Users\b51432\Documen	ts\MCUXpressoIDE_10.0.2_411\workspace84\frdmk64f_driver_examples_gpio_led_output\Debug\frdmk64f_driver_examples_gpio_led_output.axf	Browse
Base address		
Reset target on completion		
Erase Options		
Mass erase	ase only required sectors	
	OK	Cancel

4. When it shows the below window, click "OK":

[KUXpressIDE	×
	Program Flash	Y
	crt, emu.cm.redink.~flash-mass-load-exec "CiUBers1b51432.Documents/MCUKpressoIDE_10.0.2_411/workspace841frdmk64f, driver, examples, gpio_led_output.Debug/irdmk64f, driver, examples, gpio_led_output.ad" - gdebug 2vendor NKP - p MK64FNLMDxxx12 - upport-flash-dri CiUBers1b51432/mcuxpressoi.	IDE
	NE: Word page-0-2 with J1436 bytes in 822mace Ne: Closing flash wore FTE4_LKCA Pb: (100) Finished writing Flash successfully. NE: Flash Write Done NE: Loadel 0:3754 bytes in 2406ms (about 548/s) NE: Reset target (cord)	*
	ОК	

5. Repeat steps 2-4 flash the second file, please pay attention, in step 3, choose "Erase only required sectors", not "Mass erase":



LinkServer GUI Flash programm	er		×
Program Flash using MBED Cl	MSIS-DAP		
😵 Image file '' not found			annum .
Options			
Display progress log	Reopen on completion		
Repeat on completion	Run flash command and copy	to clipboard	
Just copy flash command to c	lipboard 🔲 Confirm command before exe	uting	
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Additional options			
LinkServer connect script			▼ Browse
Flash Driver			
Flash driver		<default></default>	▼ Browse
Group			
Program flash memory Erase fla	ash memory Resurrect locked Kinetis device		
Select file C:\Users\b51432\De	sktop\user_app_red_blink.bin		▼ Browse
Base address 0x8000			
Reset target on completion			
Erase Options			
Mass erase	Erase only required sectors		
			OK Cancel

6. Now, the two files flashed into chip, if you want to check on the memory data, you can use method of "Attach to running target":

- Create and edit new LinkServer probe: **Right lick project->Launch Configurations-> Create and edit new...-> MCUXpresso IDE LinkServer (inc. CMSIS-DAP) probes**

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- Choose "True" in "Attach only"-> Debug:

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🔀 frdmk64f_driver_examples_gpio_led_output LinkServer Release	Debugger Options	
c C/C++ Application	Target configuration Main	
C/C++ Attach to Application		
C/C++ Postmortem Debugger C/C++ Remote Application	Debug options for NXP MK64FN1M0xxx12 (cortex-m4)	
GDB Hardware Debugging	Debug Connection SWD - Edit JTAG configuration	
GDB PEMicro Interface Debugging		
GDB Segger Interface Debugging	Configuration Option	Value
Launch Group	abj: Additional options	
	🗄 Attach only	True
	abj: Connect Script	kinetisconnect.scp
	ab): Debug Level	2
	E Debugger memory cache	Disable
	E Disconnect behavior	cont
	E Load image	True
	🕃 Maximum wire speed	
	E Memory Access Checking	off
	abj. Pre launch command	
	E Reset Handling	
	abj. Reset Script	
	E Run/Continue image	cont On
	E Semihosting support	false
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	ag: wirespeed (Hz)	
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	Emulator selection LinkServer -	
	Edit scripts	
	Debug options template	
	Debug Configuration (*)	- Show all
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ter matched 11 of 11 items		Revert Apply
?)		Debug Close

Now you can use the same method to compare file data and memory data as above.

