User Guide on i.MX21 HAB ToolKits v2.0

After the installation, User can use either Serial com port or USB to download the code to the SDRAM of the ADS board or Flashing the 32-Bit NOR Flash with their code.

I. Flashing/Download

Using USB / Serial COM port

- 1. Using Bootstrap mode: i.e. Boot0, Boot1, Boot2, Boot3 of S2 are ON-ON-ON.
- 2. Connect the USB cable between the PC and the ADS board and Power on the ADS board. USB -- Open the "i.MX21 HAB ToolKit v2.0.exe". You will see USB is selected.

Please Select: — C COM 1 C C COM 2 C I USB	COM 3	of Operation lashing: 32 Bit NOR	- 🔽 Downloa	ad Only Browse
Init Memory	((400)			
Memory Init File:	mory (for ADS)		Bro	wse
Image File:	art at 0xC0004000	RAM Appl Sta	art at 0x	
Image File: Downloading: Flashing:			Brov	
Load/Save Profile	-		Choose	Open
tatus:			[Execute
				4

If no USB is connected, Serial COM port: the following window will show, please select the COM port that the PC was connected

Please Select: C COM 1 C COM 3 C COM 2 C COM 4	Type of Operation Flashing: 32 Bit NOR Browse
Init Memory	- ^DC)
Memory Init File:	Browse
Mage File:	20004000 RAM Appl Start at 0x Browse
Flashing:	
Profile File:	<u>C</u> hoose <u>O</u> pen
tatus:	Execute
	<u> </u>

3. "Type of Operation"—

a. Download Only

0				
⊢ Type of Opera	ation			
🔲 Flashing:	32 Bit NOR	- I	Download	i Only
Flash Library:				Browse
	Downl	oad Only	v	

For Download, the code will be downloaded to the SDRAM and execute. Then please select the Memory Init. By default, if Default Init Memory (for ADS) was selected, it will automatically init the SDRAM.

− Init Memory ✓ Default Init Memory (for ADS)	
Memory Init File:	Browse
Image File:	
RAM Appl Start at 0xC0004000	RAM Appl Start at 0x
Image File:	Browse
Downloading:	

If user would like to init the memory by different setting, please unclick the Checkbox and input the init script. The format of the init script is

"setmem 0x10000000 0x00040304 32" – to write register 0x10000000 with value 0x00040304 in 32 bit format. Please refer to example imx21_meminit.txt.

Then please input the image file, if the file is compiled and start at 0xC0004000, just leave the checkbox clicked, if it's at other address, please unclick the checkbox and enter the RAM Application Start Address. Then please click the "Execute" button, it will then download to that address and execute from that address.

Example on Download

i. Using Default RAM Start Address (0xC0004000)

-- please try using the example\Download Image\LED-at-RAM_0xC0004000.bin

Please Select: C COM 1 C C COM 2 C	COM 3 COM 4	- Type of Operat	iion 32 Bit NOR 💌	🔽 Downlo	bad Only Browse
Init Memory —		(2)			
Memory Init File:	remory (for AL			Bro	owse
RAM Appl S	tart at 0xC000	14000 ad Image\I ED-a	RAM Appl Start	at 0x C00000	000 wse
Image File: Downloading: Flashing:	npie (Downloa	ad Image (LED-a	(-HAM_0XC00040	Jo. bin <u>B</u> ro	
Load/Save Profi	le				
Profile File:				<u>C</u> hoose	<u>O</u> pen
tatus:					<u>E</u> xecute

After clicking Execute:

i.MX21 H	AB ToolKit v2.0
⚠	Download Success & Completed
	OK

Then LED3 & LED4 keep lighting alternately.

ii Using Default RAM Start Address (0xC000000)

-- please try using the example\Download Image\LED-at-RAM_0xC000000.bin

Please Select: C COM 1 C COM 3 C COM 2 C COM 4 I USB	Type of Operative Statement of Statemen	ation 32 Bit NOR 🔽	☑ Downle	bad Only Browse
Init Memory	400			
Memory Init File:	ADSJ		Br	owse
Image File:				
RAM Appl Start at 0xC	0004000	RAM Appl Start	at 0x 00000	000
Image File: nple\Down	nload Image\LED-	at-RAM_0xC000000	0.bin <u>B</u> ro	wse
Downloading:				
Load/Save Profile				
Profile File:			<u>C</u> hoose	<u>O</u> pen
tatus:				<u>E</u> xecute

After clicking Execute:

i.MX21 H	AB ToolKit v2.0	J
1	Download Success & Completed	
	OK	

Then LED3 & LED4 keep lighting alternately.

b. Flashing

Type of Opera	tion	
🔽 Flashing:	32 Bit NOR 💌 🔲 Downloa	d Only
Flash Library:		Browse
	Flashing	

For Flashing, the code will be downloaded to SDRAM together with the Flash loader, the Flash loader will be executed to flash the image to the selected flash.

By Default, if Flashing is clicked, it will select the 32-Bit NOR Flash Loader. If user would like to load the Flash Loader by Clicking the User Specify, then please browse the Flash Library and the Flash Base Address. There are some requirements for the the Flash Loader, please refer to the \User Specific Flash.

Default Init	Memory (for ADS)		
Memory Init File	£		Browse
- Image File:			
🔽 Flash Start	at 0xC8000000	Flash Appl Start at 0x 🗌	
Image File:	example\Flashing Image\	.bootloader_0xC8000000.bin	Browse
Downloading:			
Flashing:			

If user would like to init the memory by different setting, please unclick the Checkbox and input the init script. The format of the init script is "setmem 0x10000000 0x00040304 32" – to write register 0x10000000 with value 0x00040304 in 32 bit format. Please refer to example\ imx21_meminit.txt.

Then please input the image file, user can select where the image is downloaded to the flash. If the image is flashed to 0xC8000000, so please leave the "Flash Start at 0xC8000000", the image will then be flash to 0xC8000000.

Init Memory Default Init	Memory (for ADS)		
Memory Init File	:		Browse
Image File:			
🔲 Flash Start	at 0xC8000000	Flash Appl Start at 0x 🛛	8004000
Image File:	D:\Profiles\r59847\My Docu	ments\Tahiti\Bootstrap\'	Browse
Downloading: Flashing:			

If user would like to flash the image to other flash location, please unclick the "Flash Start at 0xC8000000" and input the Targeted Flash address at "Flash Appl Start at 0x".

Example on Flashing

i. Using Default Flash Start Address (0xC8000000) -- please try using the example\Flashing Image\TO2_bootloader_0429_C8000000.bin

sning/Download	I linage Co					
Please Select: C COM 1 C C COM 2 C USB	COM 3 COM 4	─ Type of Ope	eration p: 32 Bit NOR		Downloa	ad Only Browse
Init Memory						
Memory Init File:	emory (for A	ADSJ			Brot	100
	1				010	/////
Image File:	0.00000	00	Elash Anal	C1-41-11-01-		
Flash Start at	UXC800000	00	riash App	Start at UX		
Image File: 🛛	lashing Ima	age\T02_boot	oader_0429_C8	000000.bin	Brov	vse
Downloading:						
Flashing:						
Load/Save Profile						
Profile File:				<u> </u>	hoose	<u>O</u> pen
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Tahiti-Lite HAB ToolKits v2.0 User Guide

After clicking Execute:

Please Select: C COM 1 C COH C COM 2 C COH USB	1 3 Image: Type of Operation 1 3 Image: Type of Operation 1 4 Flashing: 32 Bit NOR 1 4 Flash Library: Browse
Init Memory	
Memory Init File:	y (for AD'S) Browse
Image File: Flash Start at 0x0	8000000 Flash Appl Start at 0x
Image File: Flash	ing Image\T02_bootloader_0429_C8000000.bin Browse
Downloading: Flashing:	
Load/Save Profile	
Profile File:	<u>Choose</u> <u>Open</u>
itatus:	<u>E</u> xecute
Flashing Started! Flashing Completed! Please change Boot M	ode & Reset the Board

So please change the Boot Mode to ON-OFF-OFF-ON and connect the hyperterminal with baud rate 115200 8-N-1 with no flow control. Then you will see the Linux Boot Loader.

"Load/Save Profile" -

You can save your setting to a *.profile file by clicking the Save. Thus Next time you can click the Load to load the *.profile file.

	Load/Save Pr	rofile			
	Profile File:	Sav	/e	Load	
Y	ou can save	e the setting to a profile file for next time dow	nloa	ad	

II. Image Combine

_Image Type:	
Signed 🗌 Linux Segment	Single Image
- Siaped	
	Browse
	Browse
	Browse
Single Image	
Single Image:	Browse
Linux Boot Loader:	Browse
Linux Kernel:	Browse
Linux RootDisk:	Browse
Output File	
Output:	Choose,
Status:	

The Image Combine is used to combine the binary files to a single image such as Linux bootloader + kernel + rootdisk. This also helps to combine the HWC and CSF together with the image to form a single image so that it can use the Download/Flashing to download the image by one click.

1. Image Type:

Please select whether the Image is signed and it's a Linux Segment image or single image.

If it's signed, please input the CSF and the HWC file. The CSF will be inserted to offset 0x1200 and the HWC file will be inserted to offset 0x1010, and the three pointers will be inserted to offset 0x1000.

If it's a Linux Segment file, please enter the linux bootloader, kernel image and the rootdisk, they will be combined together to form the whole linux image. The bootloader

will be put to 0x0. Kernel image will be put to offset 0x100000 and Rootdisk will be put to offset 0x300000.

2. Then after select the input files, please click Choose and select the path where the final image to be saved.