

## Application Note Flashing Examples into the LPC3000 Evaluation Board

To program the NAND Flash of the LPC3000 board there is a utility that can be started by clicking on the flash button (figure 1) of the SeeHau Button Bar (figure 2).



Figure 1



Figure 2

The only address range in use on the External BUS is for the SDRAM – located from 80000000H ~ 81FFFFFFH.

We have examples using the IRAM of the micro from three different compilers, ARM, HI-TECH, and IAR the other example is one using the SDRAM on the evaluation board and this is located in the IAR examples.

For each of the IRAM examples, these files will be loaded as the “Secondary Boot Loader”, can be referred to as the user application. This means that the “User application” will run after the built in boot loader of the microcontroller.

The example using the SDRAM requires that two files get programmed in during the process. The first is the program that will initialize the bus to talk to the SDRAM, and the second is the actual application code.

Files available for loading are located under the install directory\examples\philps\lpc3000. There are three subdirectories here:

**ARM-C** based on the ARM-C compiler  
The programming file is located under the sub-folder - blinky\_lcd\_Data\IRAM\_Release  
Flash programming file: blinky\_lcd.bin  
Load file for Symbolic Debugging: blinky\_lcd.axf

**HITECH** based on the HiTide-C compiler  
The programming file is located in this folder.  
Flash programming file: Blinky\_IRAM.bin  
Load file for Symbolic Debugging: Blinky\_IRAM.hex

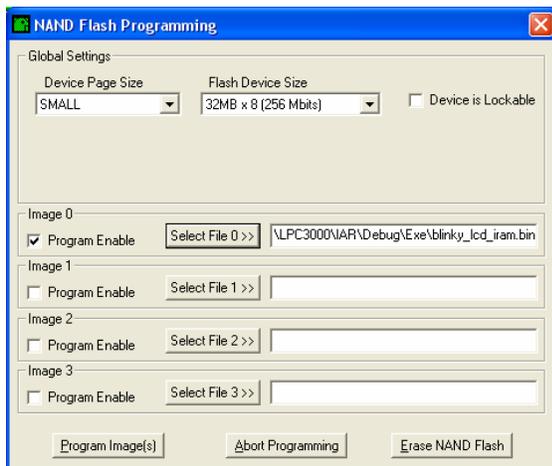
**IAR** base on the IAR-C compiler  
The programming files are located in this sub-folder - Debug\Exe  
Using IRAM:  
Flash programming file: blinky\_lcd\_iram.bin  
Load file for Symbolic Debugging: blinky\_lcd\_iram.elf

IAR base on the IAR-C compiler (continued)  
Using SDRAM:  
Flash programming files: secondary\_loader\_sdram\_init.bin (13Mhz)  
secondary\_loader\_sdram\_init\_104MHz.bin  
blinky\_lcd\_sdram.bin

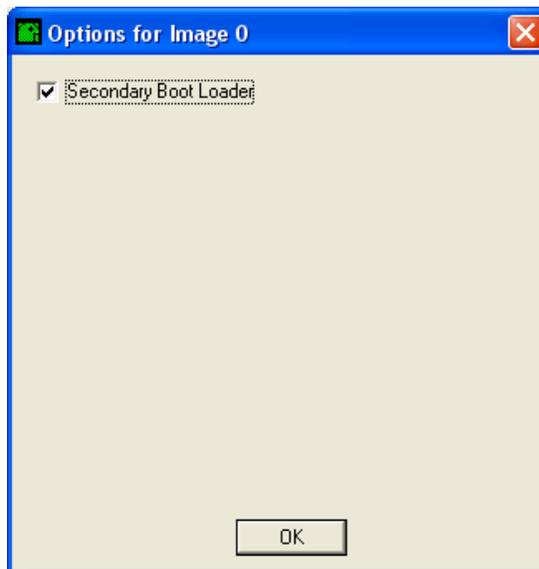
Load files for Symbolic Debugging: secondary\_loader\_sdram\_init.elf  
secondary\_loader\_sdram\_init\_104MHz.elf  
blinky\_lcd\_sdram.elf

### **Programming process for using any of the examples for the IRAM implementation:**

- 1) After starting Seehau, click on the flash button to open the programming macro dialog.
- 2) Setup the options as shown in figures 3 and 4. You will want to select the programming file for Image 0 then enable it using the check box (figure 3). When you click on the check box the other option dialog box will appear and you will want to make sure the check box for **secondary boot loader** is selected (figure 4)
- 3) The click on the button to Program Image(s). This will program the flash memory.



**Figure 3**



**Figure 4**

## Programming process for using any of the examples for the SDRM implementation:

- 4) After starting Seehau, click on the flash button to open the programming macro dialog.
- 5) Setup the options as shown in figures 5-. You will want to select the programming file for Image 0 then enable it using the check box (figure 5).
  - a) The correct files for the “Secondary Boot Loader” are the following:
    - 1) secondary\_loader\_sdram\_init.bin : to operate at the default reset speed of 13Mhz
    - 2) secondary\_loader\_sdram\_init\_104MHz.bin : to operate at 104Mhz
- 6) When you click on the check box the other option dialog box will appear and you will want to make sure the check box for **secondary boot loader** is selected (figure 6)
- 7) Then you will select the image for Image 1, this is the actually blinky application (figure 5).
- 8) Now when you enable this Image you will want to setup the option as shown in figure 7.
- 9) The click on the button to Program Image(s). This will program the flash memory.

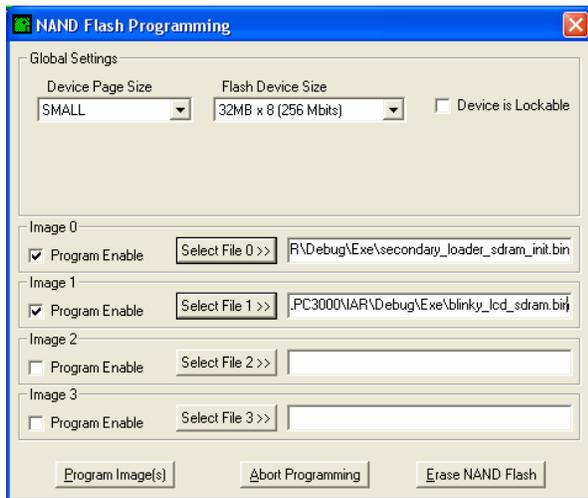


Figure 5

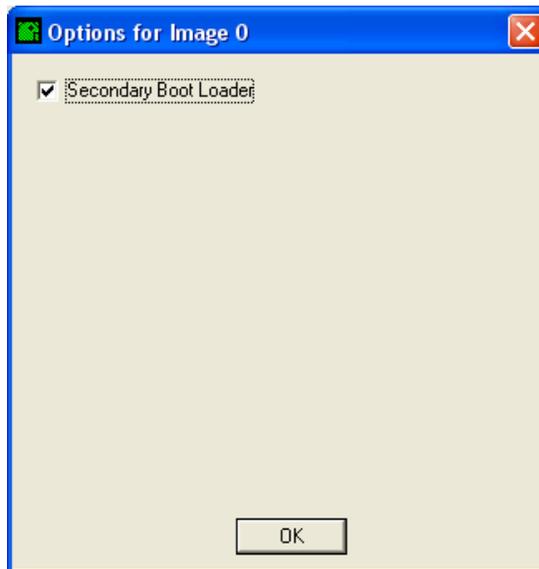


Figure 6

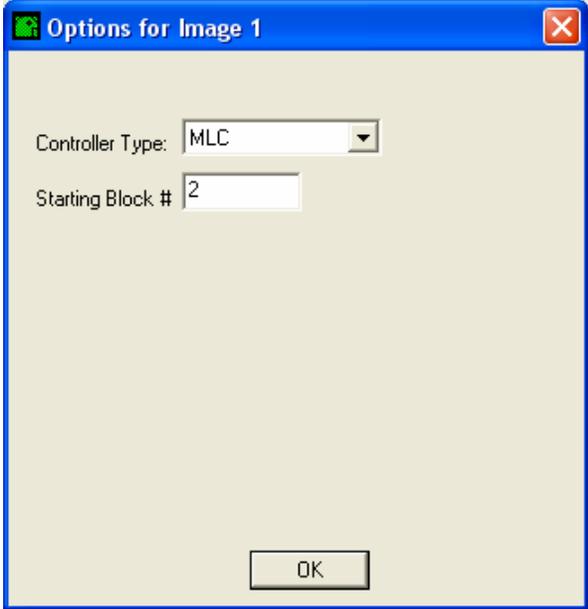


Figure 7