

Blueboard LPC1768 USB Boot-loader

USER MANUAL

Introduction

1.USB Boot-loader

The BlueBoard-LPC1768 COMBO and Blueboard-LPC1768-H will now be pre-loaded with the USB boot-loader firmware. With the USB boot-loader you can simply drag and drop your compiled binary file onto the device as you would with any USB flash drive, and it will update itself accordingly. No need for serial port for flashing.

After loading USB bootloader firmware hex* to the Blueboard-LPC1768 COMBO or Blueboard-LPC1768-H*, hold down SW1(USBBL) and SW3 (RESET), then release SW3 first and finally SW1.Now the pre-loaded USB bootloader allows you to enumerate the board as a Mass Storage Device .Drag the compiled binary file and drop onto the device and reset the board using SW3,and the firmware runs.

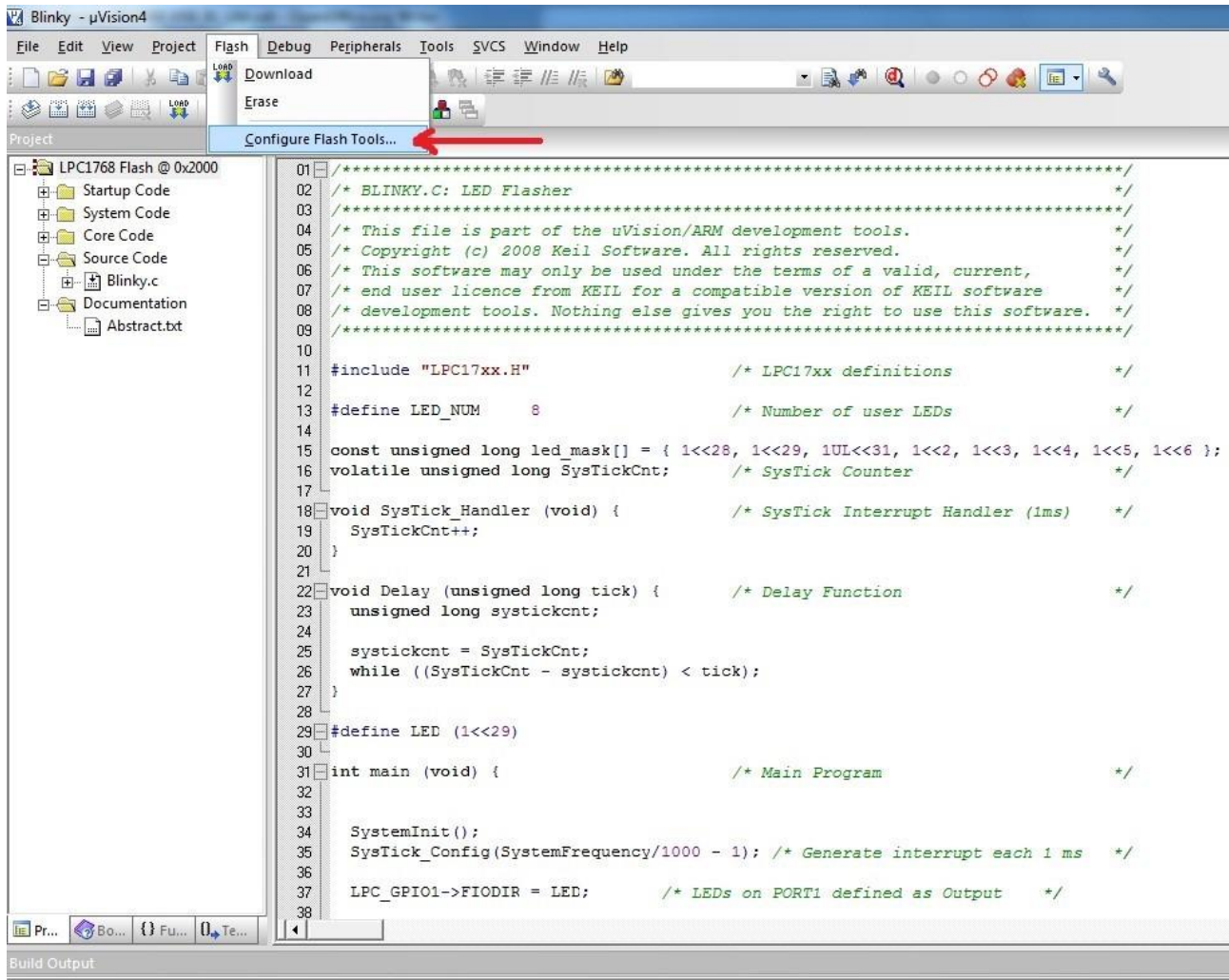
The new USB boot-loader concept for NGX Blueboard series of development boards continues with the rest of our boards in coming days.This is the way to making the BlueBoard LPC1768 easier to use, with less time and effort involved on the development side for people working with these chips.

Blueboard-LPC1768-H:Presently there is no USB boot-loader switch provided for Blueboard LPC1768-H.So you need to manually make the pin P2.12(J14) low by connecting it to any of the available GND pins on board using Jumper wire and press SW1 (RESET). Now the preloaded USB boot-loader allows you to enumerate the board as a Mass Storage Device.Delete the default binary.Drag the compiled binary file and drop onto the device,now remove the connection between P2.12 and GND and reset the board using SW1 and the firmware executes.Second time if you want to Enumerate the board as mass storage to change the running code you have to repeat the same procedure to make the board enter into boot-loader mode.*

Note: The USB boot-loader firmware hex `NGX_17xx_Bootloader_Bbase.hex` and `LPC1768H.bin` to test on board Test LED and EEPROM can be found [here](#)

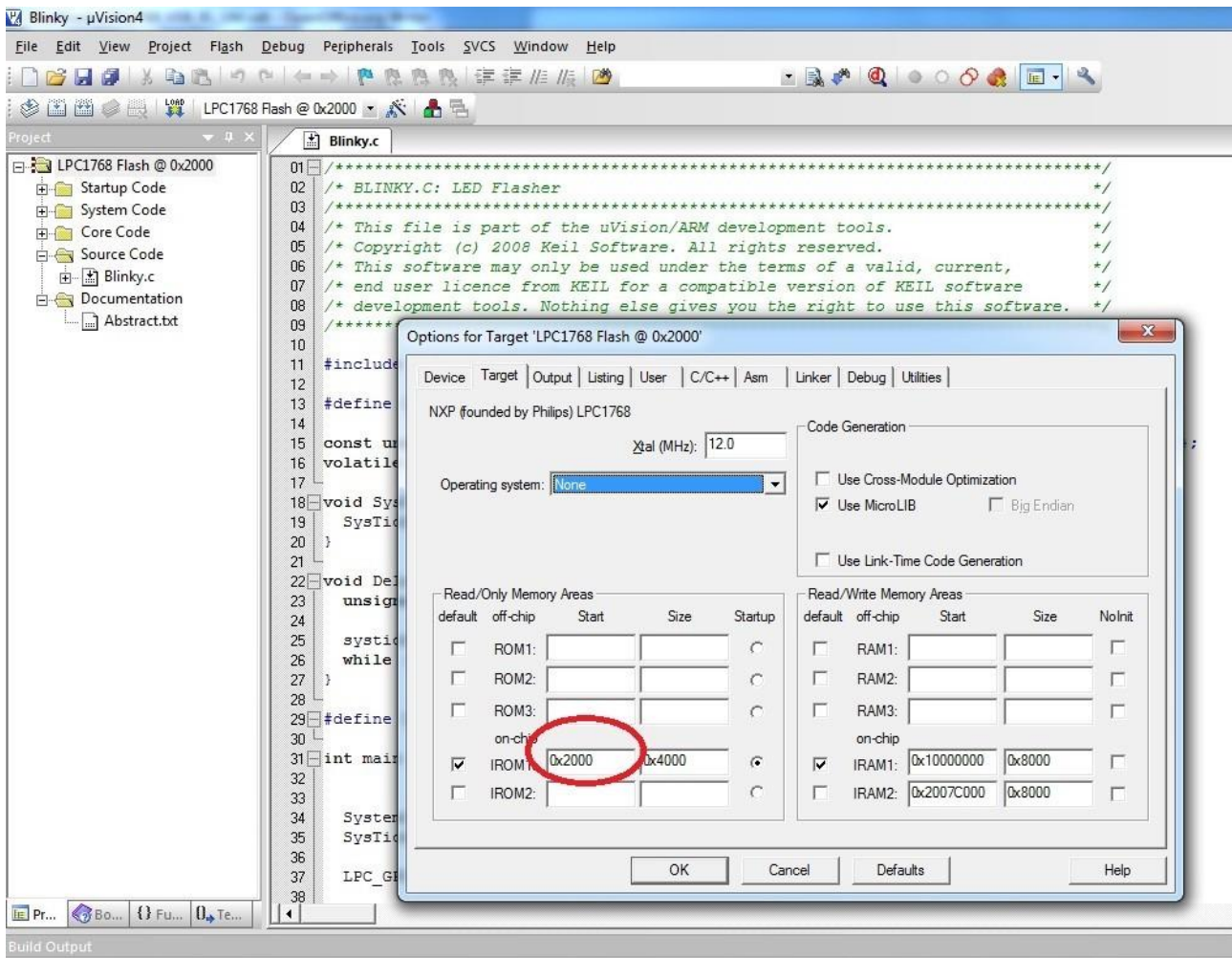
Steps involved in making your KEIL project compatible with the pre-loaded USB boot-loader using BlueBoard-lpc1768 COMBO / Blueboard LPC1768-H:

1) As shown in below fig. Open the μ Vision IDE and go to **Flash --> Configure Flash Tools-->Target.**

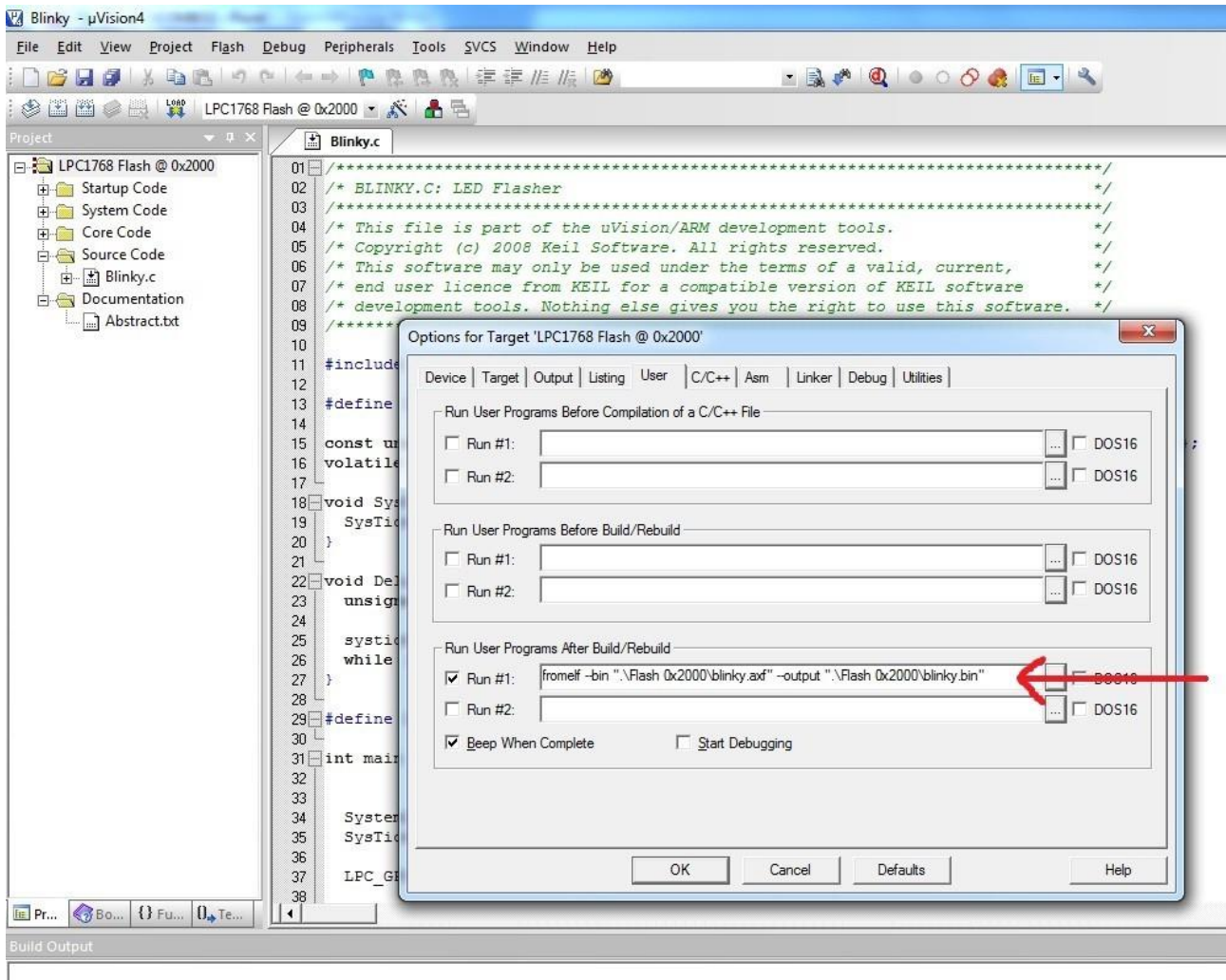


UM-Blueboard LPC1768 USB Boot-loader

- Change the start address of on-chip IROM1 memory from 0 to 0x2000 as shown in fig. Below .This is the area where user program is placed and has to run when the controller is reset.



3) Here in fig as below Go to Flash --> Configure Flash Tools-->User.



Insert the user command in Run #1 ticking the check box. After compile and build the entire project, from elf it creates hex file along with the hex file there will be another file with the extension .axf. This user command is used to convert .axf file to .bin. Here in fig. Above blinky.axf is converted to blinky.bin which is used for drag drop programming with the USB boot-loader that allows you to enumerate the board as a Mass Storage Device.

Note: The location of .axf file in the user command must be same where its located in the project folder. In the above fig the default location of .axf file is "Flash 0x2000" folder in the project folder so the user commands goes like .\Flash 0x2000\blinky.axf. The Boot-Loader Examples and BIN files can be found at [USB Boot-loader Information](#)

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