

# Programming the parallel flash on Hitex LPC1850EVA-A4

Device types on the Rev. A4 board:

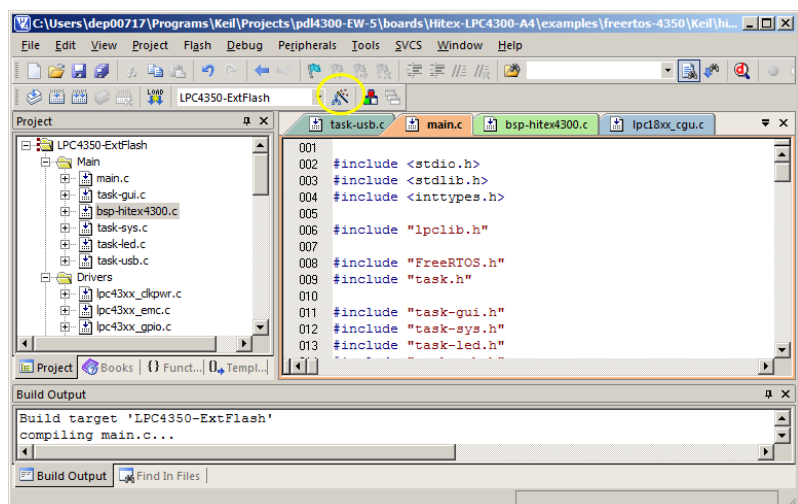
- SST39VF3201 or SST39VF3201B (16-bit bus, 4 MByte)
- Spansion S25SL129 serial NOR flash (quad SPI)

The parallel flash can be programmed with the flash utility inside KEIL  $\mu$ Vision 4. The JTAG connection between the  $\mu$ Vision debugger and the LPC1850/4350 is used to download and program data into the external flash device. For each flash type you need a specific flash algorithm.

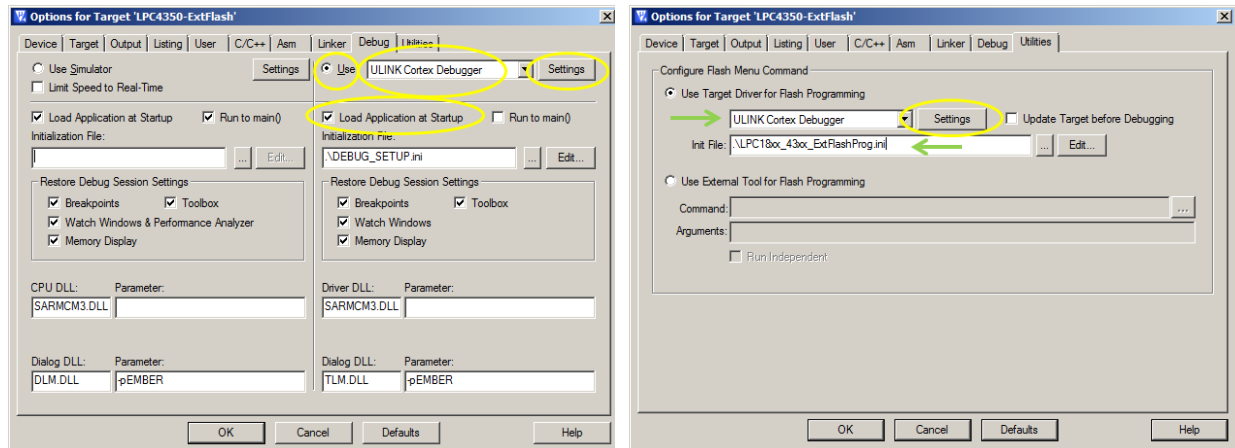
- The algorithm for the SST39VF3201/3201B can be found in the folder `.\software_design\μVision4` of the CDROM (SST39VF3201x\_Hitex.FLM)
- Please put this file into the following folder of your KEIL  $\mu$ Vision installation: `.\KEIL\ARM\Flash`
- The source project of the flash algorithm is also on the CDROM, to recompile it you need a licensed version of  $\mu$ Vision, because the creation of position independent target code does not work with the evaluation version.
- The INI file `LPC18xx_43xx_ExtFlashProg.ini` needs to be in a convenient place on your computer, e.g. copy it into the folder of your own  $\mu$ Vision project

If you have a project for the LPC1850 or LPC4350 which should run from external flash you need to do the following things in  $\mu$ Vision:

1. Enter the configuration settings for your project:

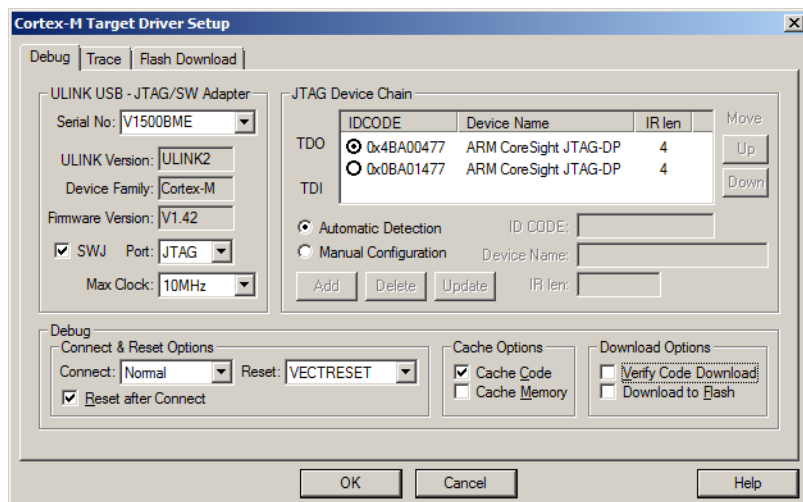


2. Select the correct debugger hardware and the INI file:  
Working debuggers are e.g. ULINK2, ULINK Pro, J-Link

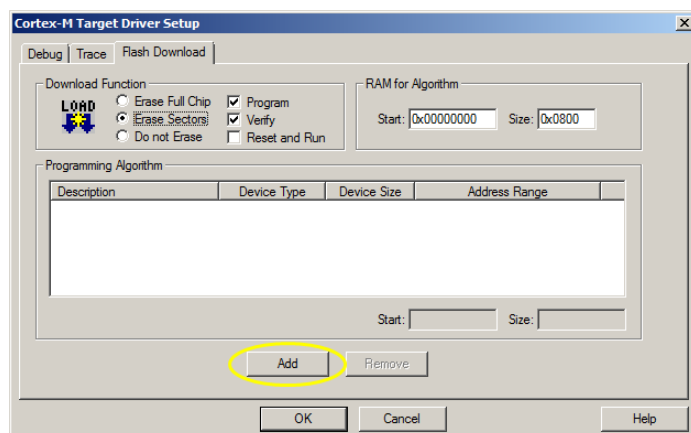


3. Enter the Settings for Debug and set the parameters as shown in the screenshot:

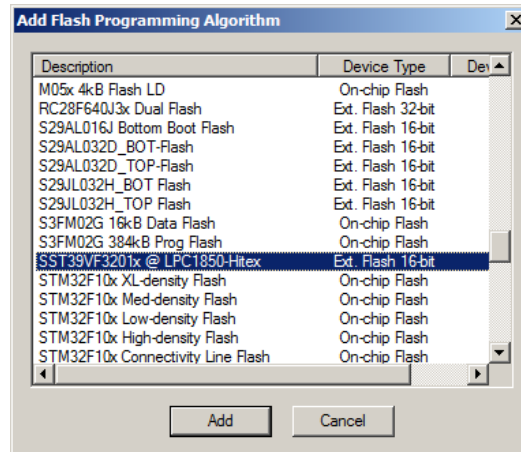
In case of the LPC4350 the first ARM core is the Cortex-M4, the second is the Cortex-M0. With the LPC1850 you will see only one core, the Cortex-M3.



4. Enter the Settings for Flash programming:

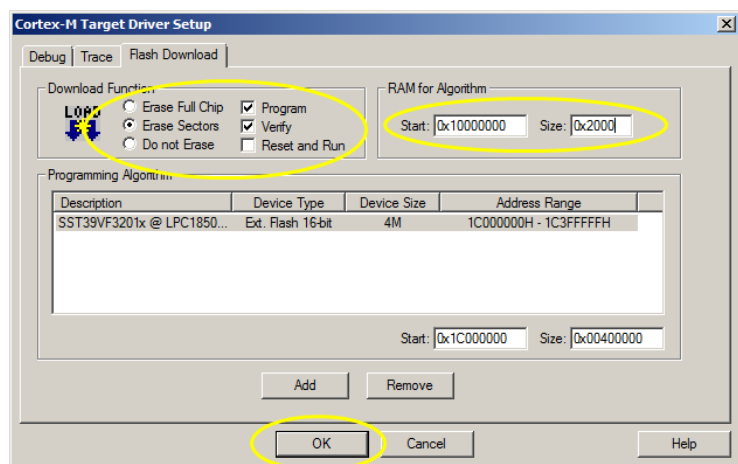


- Click on Add and select the SST39VF3201x device for the Hitex board, then finish with a click on Add

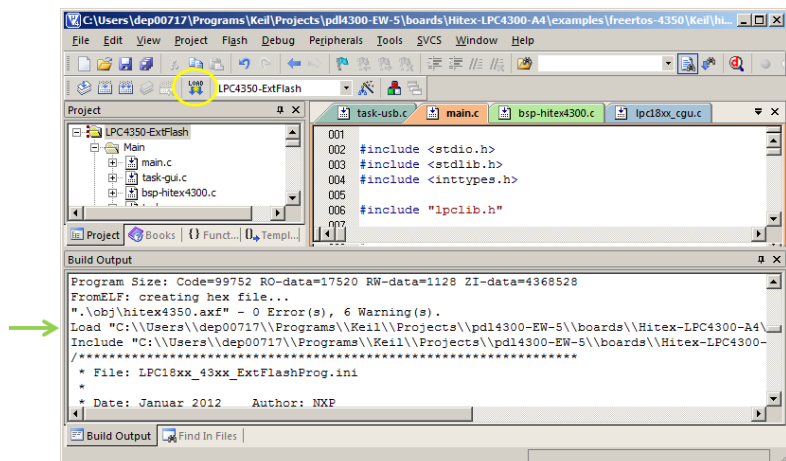


- Fill in the correct parameters for the “RAM for Algorithm” settings:
  - Start = 0x10000000
  - Size = 0x2000

Choose the appropriate Download Functions and then confirm with OK.

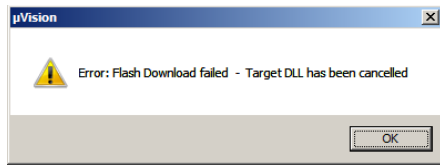


- With a click on the Load icon a correctly compiled project is now downloaded to the flash memory.



## Troubleshooting:

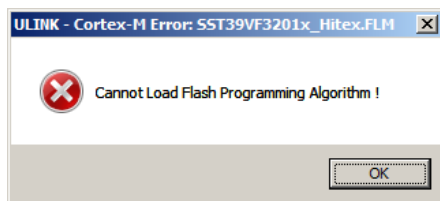
1.



That's the most common problem and can have a lot of root causes:

- Wrong settings in the Debug mask (see step 2 above)
- Memory access to the target failed. Check if you provided the correct start address for the flash algorithm (see step 2 above)
- Debugger does not get access to the target because of a problem on the target board.
  - 1) Check the physical connection.
  - 2) Choose another bootmode on the Hitex board. (see below at 3).

2.



The value for the size of the RAM for the flash algorithm is too low. Please choose 0x2000 (see step 6 above)

3. The debugger connection to the LPC1850/4350 can be a problem in case the ARM core(s) are already executing code from the boot flash with interrupts and/or high speed. Then it helps to select a boot mode which does not start any code, but remains in the bootmode.

Change one of the jumpers Boot1/Boot2/Boot3/Boot 4 to another position and then try to flash again.