## How to program a LF240xA device using the SCI port and Codeskin programmer

It can be hard to locate JTAG based debug tools for LF240xA devices, in order to program the on-chip flash memory. A simpler option would be to leverage the SCI-bootloader in the on-chip boot-ROM and Codeskin's free Flash Programmer for TI MCU's which can be downloaded at <u>http://www.codeskin.com/programmer</u>

After you have installed tool from the link above, you need to invoke C2Prog.exe and follow the following steps:

1. Once you invoke C2Prog.exe the screen below should pop up.

_v3.3\C2400\c	gtools\bin\L20.	hex		Sele	ect File
ing Configura	tion				*
06_10MHz_4x					
07_10MHz_4x					
015_20MHz		Key 3:	++++	Key 4:	****
Ke	by 6: ****	Key 7:	****	Key 8:	****
ctor Selection		Programming			
Checksum					
T	4:	SA:	SIC	):	
	_v3.3\C2400\or ing Configura 06_10MHz_4× 05_10MHz_4× 07_10MHz_4× 07_20MHz_2× 016_20MHz 016_20MHz ke is to be Erased: D E F G E F G ctor Selection Checksum	_v3.3(C2400)(cgtools(bin)(L20.)           ing Configuration           06_100Htz_4x           05_100Htz_4x           07_10MHtz_4x           07_20MHtz_4x           05_20MHtz_2x           015_20MHtz_4x           015_20MHtz_4x           015_20MHtz_4x           015_20MHtz_4x           015_20MHtz_4x           015_20MHtz_4x           015_20MHtz_4x           016_20MHtz_4x           016_20MHtx_4x           016_20	_v3.3(C2400(cgtools(bin)(L20.hex ing Configuration 06_100Htz_4x 05_100Htz_4x 07_100Htz_4x 07_200Htz_2x 015_200Htz 105_2	_v3.3(C2400)cgtools/bin/L20.hex ing Configuration 06_100H+z_4x 05_100H+z_4x 07_100H+z_4x 07_200H+z_2x 07_200H+z_2x 016_200H+z_2x 106_	v3.3(C2400\opticols/bin\L20.hex         Set           ing Configuration         06_100Htz_4x         0.00Htz_4x         0.00Htz_4x

2. Select the Target from the pull down menu as shown above.

3. On an erased part, the flash password locations are FFFF, FFFF, FFFF, FFFF. So, we need to populate Key1/2/3/4 with FFFF, FFFF, FFFF, FFFF.

4. Click Configure ports. Click Scan Ports and then select COM1 from the drop down menu and click OK.

Serial port:	
COM1	Scan Ports
CAN port:	Disco
JTAG port:	

5. Make sure to pull BOOT\_EN and SPISIMO pins LOW on the LF240xA. This would put the device in SCI boot-mode.

6. Connect host (PC) and the target using RS-232 port.

7. C2Prog supports Intel-Hex files with 16 bit address and data widths. We need to use dsphex.exe to convert .out file into Intel hex format. So, copy your COFF file (.out file) into C:\CCStudio\_v3.3\C2400\cgtools\bin. We need to convert the .out file into Intel Hex format.

(HEX2000.exe shipped with later versions of CCS will not work)

8. Type the following command as shown below dsphex.exe -romwidth 16 - memwidth 16 - i - o filename.hex filename.out



9. Select the hex file to be programmed using Select file option provided in the Codeskin programmer.

- 10. Power up the device.
- 11. Click Program and you should see this window pop up.

C;\CCStudio_v3.3\C2400\cgtools\bin\L20.hex	
Programming	Close
<pre>*** PLEASE RESET TARGET IN SCI BOOT-LOADER MODE *** Pinging target Baudrate locked. Bootloading OK. Please wait Connecting with targetChip Rev: 0x00 OK. Unlocking target OK. Loading OK. Connecting with targetFlash API version: 130 OK. Erasing flash [A] OK. Programming OK. You may now close this window and reset the target.</pre>	
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