PonyProg Tutorial

(for Version 2.06a Beta Apr 4 2003)

Updated - 3 September, 2004

Author: Len Payne, modified by Peter Sutton

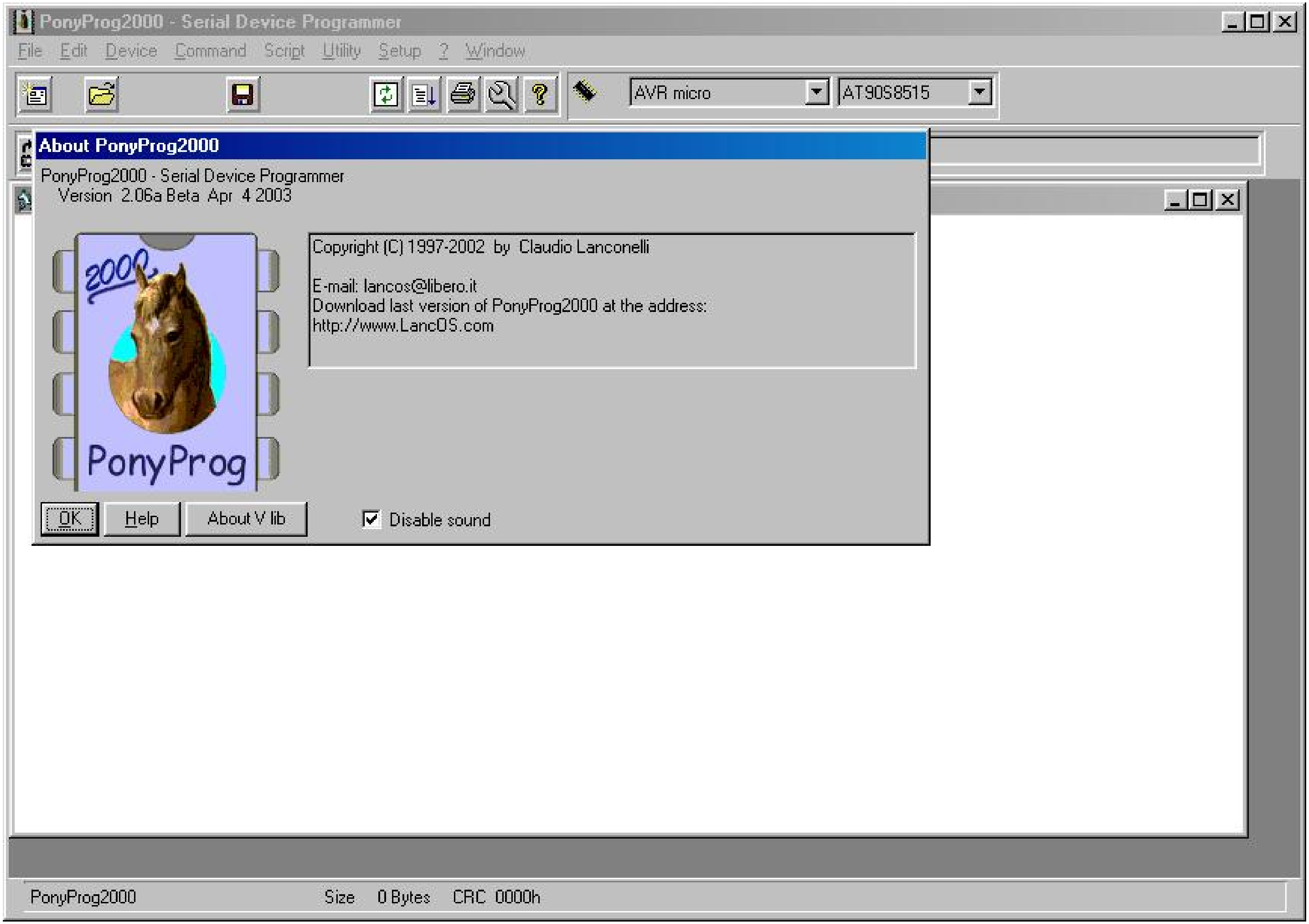
Contents

Starting PonyProg

- Start the PonyProg program by clicking on:

  ```
  Start->Programs->PonyProg->PonyProg2000
  ```

Once the program has started, you will be looking at a screen like this:


PonyProg2000 - Serial Device Programmer
File Edit Device Command Script Utility Setup ? Window
AVR micro
AT90S8515
About PonyProg2000
2000
PonyProg
OK
Help
About V lib

PonyProg2000 - Serial Device Programmer
Version 2.06a Beta Apr 4 2003

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E-mail: lancos@libero.it
Download last version of PonyProg2000 at the address:
http://www.LancOS.com

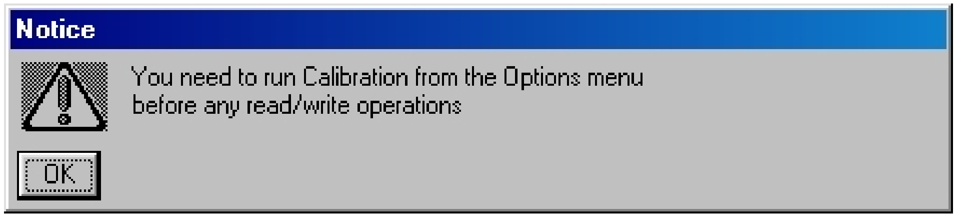
☑ Disable sound

PonyProg2000 Size 0 Bytes CRC 0000h

Tick the "Disable sound" checkbox if it isn't already. It's fun, but only for the first couple of times.

Calibration

The following window will only appear the first time PonyProg is run after it has been installed on the computer. Skip this section if this window did not appear.



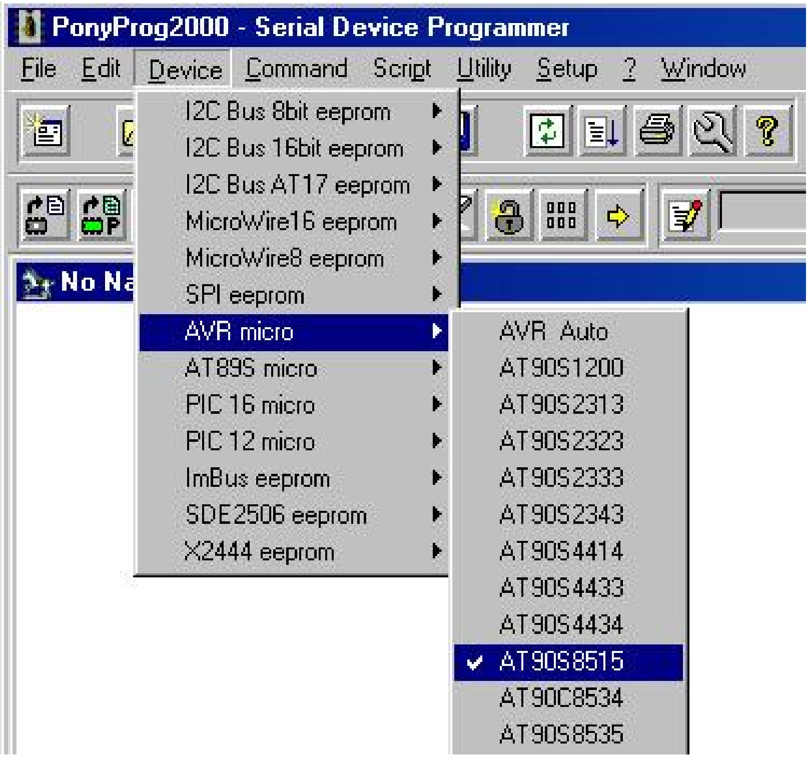
Notice

You need to run Calibration from the Options menu before any read/write operations

Open the help documentation by selecting "Help" from the "?" menu. Follow the instructions provided in section 2.6.2 (Setup->Calibration).

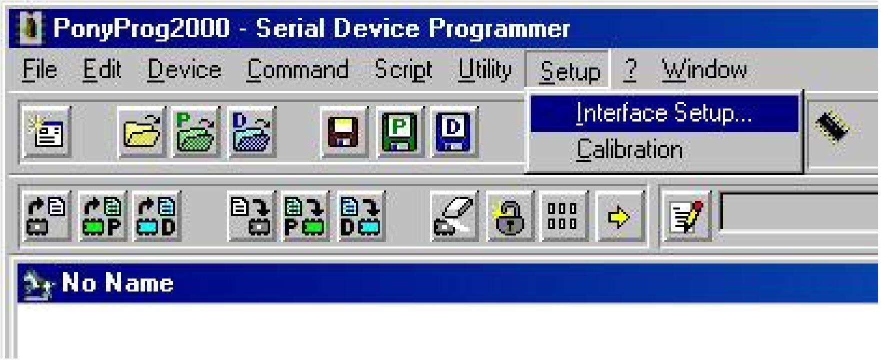
Setting the Device Type

Set the device by selecting "AVR Micro" then "AT90S8515" from the "Device" menu.

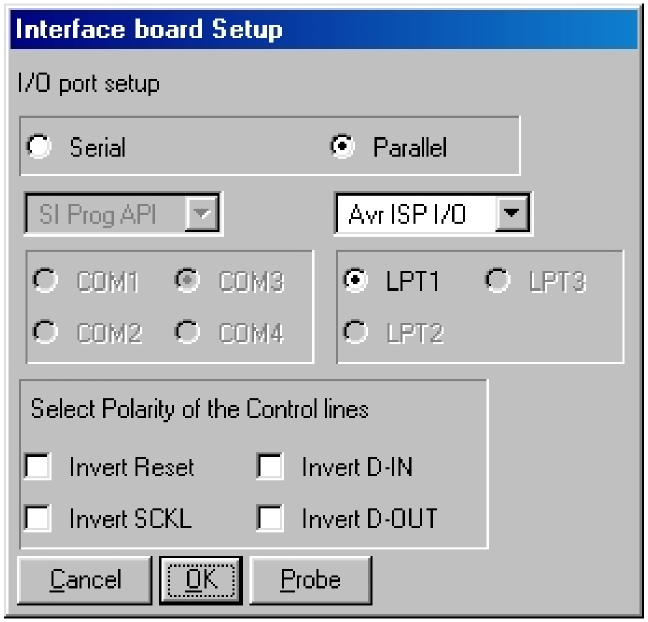


Interface Setup

We will be using an STK200 download cable connected to the computer's printer port (LPT1) to program the AVR8515 Project Board. Open the "Interface board Setup" window by selecting "Interface Setup..." from the "Setup" menu.



"I/O port setup" should be set to "Parallel". The drop-down should be set to "Avr ISP I/O" and "LPT1" selected. Leave all "Polarity of the Control lines" checkboxes unticked.



Interface board Setup

I/O port setup

○ Serial ● Parallel

SI Prog API

Avr ISP I/O

○ COM1 ● COM3
○ COM2 ○ COM4

● LPT1 ○ LPT3
○ LPT2

Select Polarity of the Control lines

□ Invert Reset □ Invert D-IN
□ Invert SCKL □ Invert D-OUT

Do not close this window just yet. We need to check that the interface will work correctly.

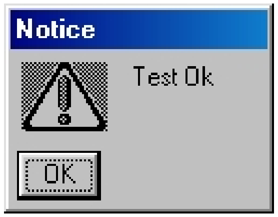
- Connect the YELLOW plug of the power lead for the AVR8515 Project Board to the +12V terminal on the power supply and the **BLACK** plug to the 0V terminal. Plug the power lead into the power connector at the top-right corner of the project board.

- Connect the parallel port cable (DB25-Female) from the computer to the DB25-Male connector on the STK200 download cable.

- If not already done so, connect the 10-pin IDC connector of the STK200 download cable to the STK200 connector (10-pin socket) on the project board.

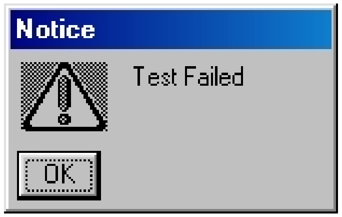
- Check that the jumper, J1 near the power connector, is set on pins 1 and 2. Pin 1 is the rightmost pin.
- Switch on the power supply. The **RED** LED on the project board should light.

Now, press the "Probe" button on the "Interface board Setup" window. If all goes well, you should see the following message appear. Press "OK" and "OK" again on the "Interface board Setup" window.


Notice

Test Ok

If you get the following message, something is not configured correctly. Work through this section, *Interface Setup*, again and if the probe test still fails, consult a tutor.


Notice

Test Failed

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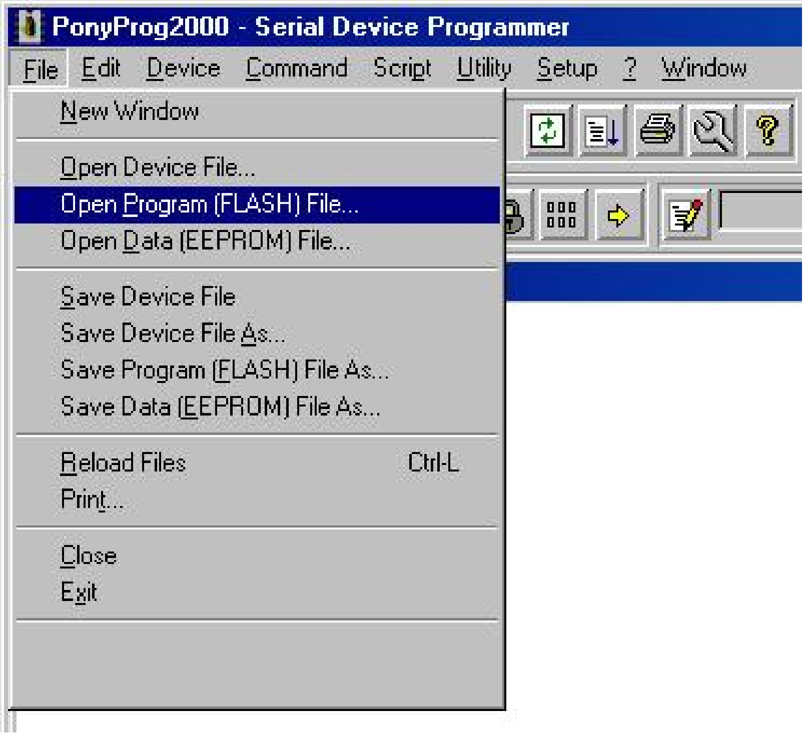
Programming the Project Board

This section assumes that you have just completed the *AVR Studio Tutorial* and the file led.hex exists in the one of your folders (e.g. H:\CSSE1000\pracs).

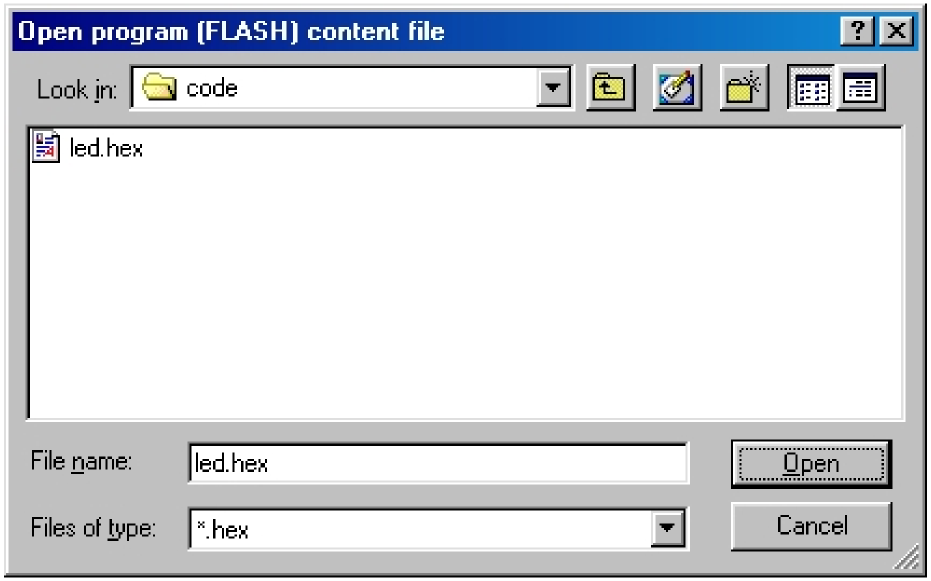
If you have just completed the *GNU C Tutorial,* use the file count.hex (in whichever folder it is in) instead of led.hex. In the following, replace led.hex with count.hex.

Loading the Program File

Select "Open Program (FLASH) File..." from the "File" menu.


PonyProg2000 - Serial Device Programmer
File
Edit
Device
Command
Script
Utility
Setup
?
Window
New Window
Open Device File...
Open Program (FLASH) File...
Open Data (EEPROM) File...
Save Device File
Save Device File As...
Save Program (FLASH) File As...
Save Data (EEPROM) File As...
Reload Files
Ctrl-L
Print...
Close
Exit

You will then get the "Open program (FLASH) content file" dialog box. Go to the "File of type:" drop-down and select *.hex. Navigate to the folder which contains led.hex and select led.hex as the filename and press the "Open" button.



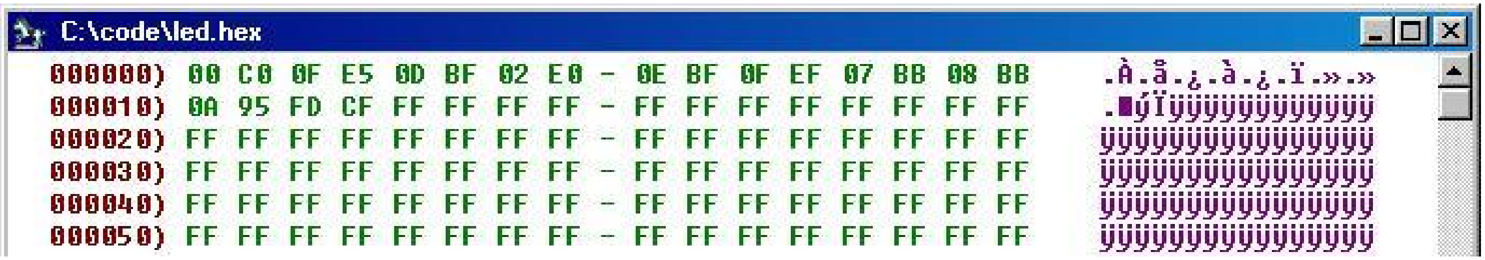
File name: led.hex

Files of type: *.hex

The window changes to show the contents of the led.hex program file. Displayed down the left side in red, are the address offsets of each line of data in the window. The addresses are displayed in hexadecimal. Each line contains 16 bytes of data, so the address offsets increment by 16 (10 in hex) for each line.

The data in the program file, shown in green, are displayed in hexadecimal. These are the data that will be programmed into the program memory of the AT90S8515 device.

On the right side of the window, shown in violet, are the ASCII representation of the data. Only data with values in the range of 32 (20 hex) to 127 (7E hex) will be recognisable as printable characters. Data with values that fall outside this range will still be displayed in their ASCII representation.



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000000) 00 C0 0F E5 0D BF 02 E0 - 0E BF 0F EF 07 BB 08 BB    .À.å.¿.à.¿.ï.».»
000010) 0A 95 FD CF FF FF FF FF - FF FF FF FF FF FF FF FF    .■ýÏÿÿÿÿÿÿÿÿÿÿÿÿ
000020) FF FF FF FF FF FF FF FF - FF FF FF FF FF FF FF FF    ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
000030) FF FF FF FF FF FF FF FF - FF FF FF FF FF FF FF FF    ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
000040) FF FF FF FF FF FF FF FF - FF FF FF FF FF FF FF FF    ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
000050) FF FF FF FF FF FF FF FF - FF FF FF FF FF FF FF FF    ÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿÿ
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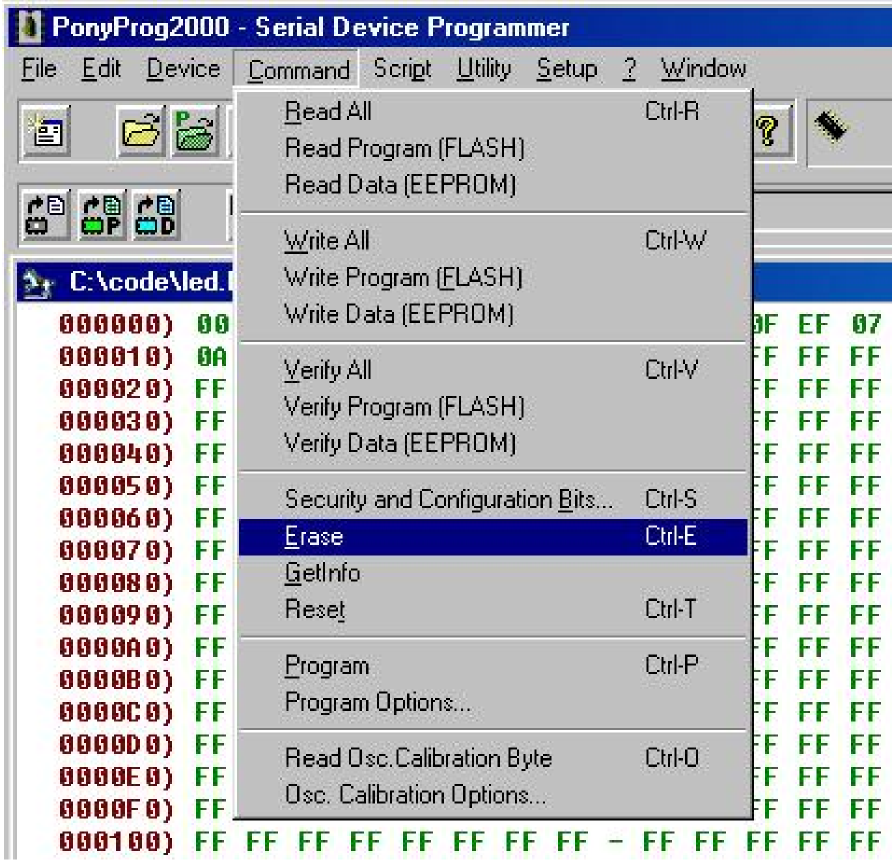
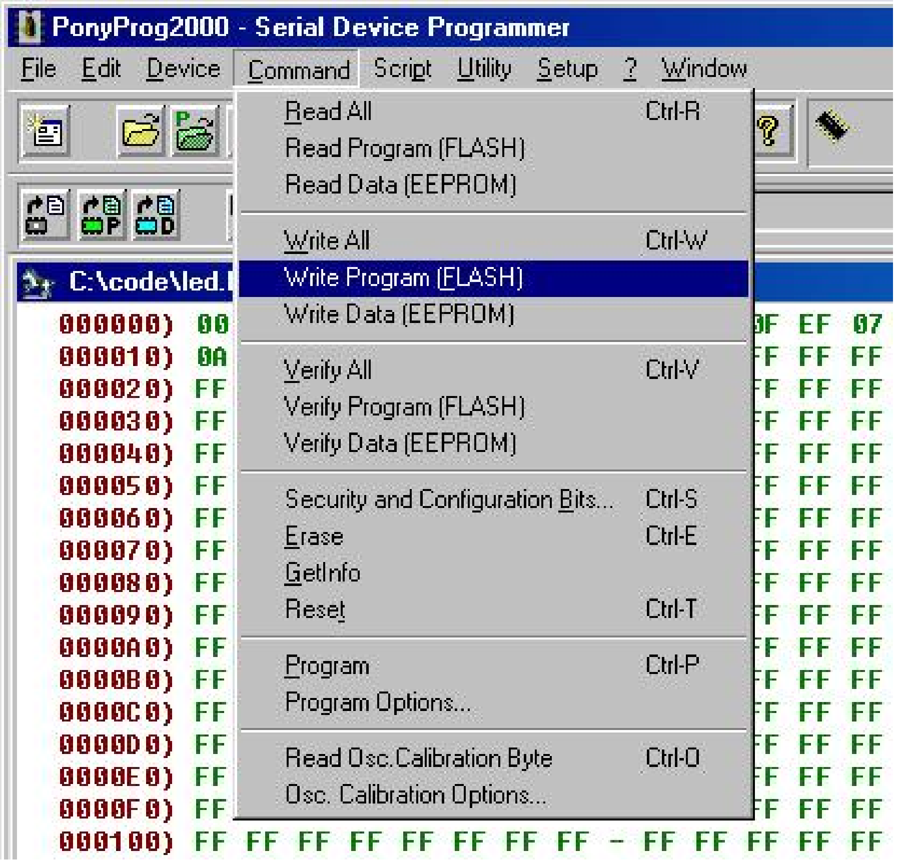
Programming the Device

Before the device can be programmed, it must be erased. Select "Erase" from the "Command" menu.

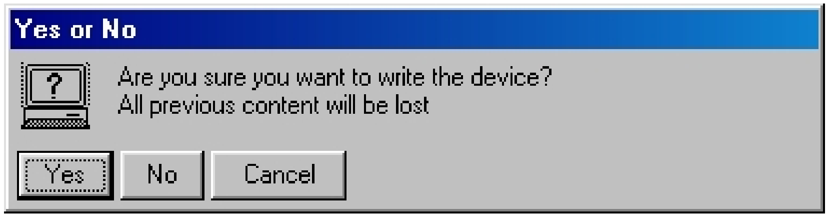


A status dialog will appear showing the erasing progress. You will also see the YELLOW LED on the project board come on. The erasing process only takes a second or two to complete after which you should get an "Erase Successful" message. Press the "Ok" button to continue.

The device can now be programmed. Select "Write Program (FLASH)" from the "Command" menu.



You are then asked to confirm writing to the device. Press the "Yes" button.



Are you sure you want to write the device?
All previous content will be lost

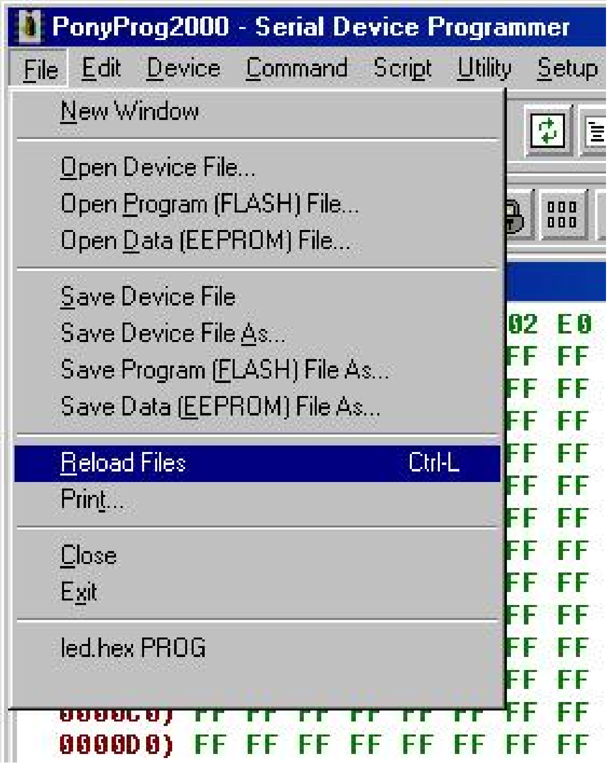
A status dialog will appear showing the writing and verifying progress. Again, you will see the YELLOW LED on the project board come on. The writing and verifying process takes longer to complete than the erasing process. You should finally be greeted with a "Write Successful" message. Press the "Ok" button to continue.

Running the Program

This is nothing more to do, the led program is now running on the project board. You can try probing the PORT B pins on the project board with an oscilloscope or logic probe if either of these is available. You should see the pins toggling.

Reloading the Program File

Program development can take several cycles of writing code, assembly, and device programming. It is important to *Reload* the program file into PonyProg before erasing and programming the device again. This is done by selecting "Reload Files" from the "File" menu.



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0000D0) FF FF FF FF FF FF FF FF
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