

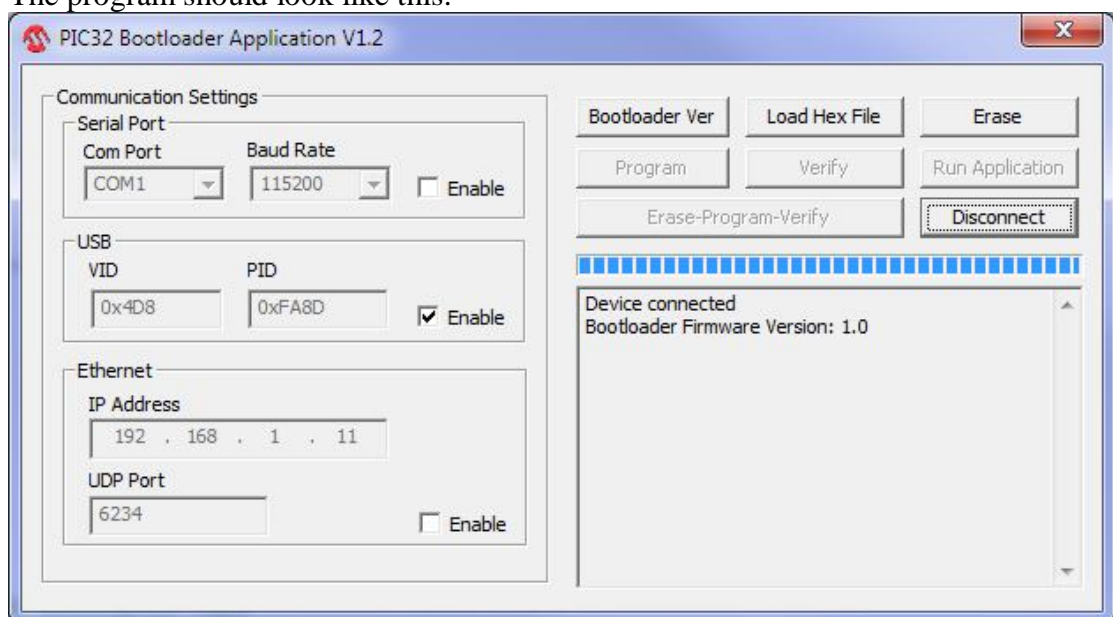
## Firmware Upgrade – Instructions

To load the new firmware onto the ASCII Video Terminal you need to follow these instructions. Avoid skipping a step or improvising as that could result in a faulty upgrade.

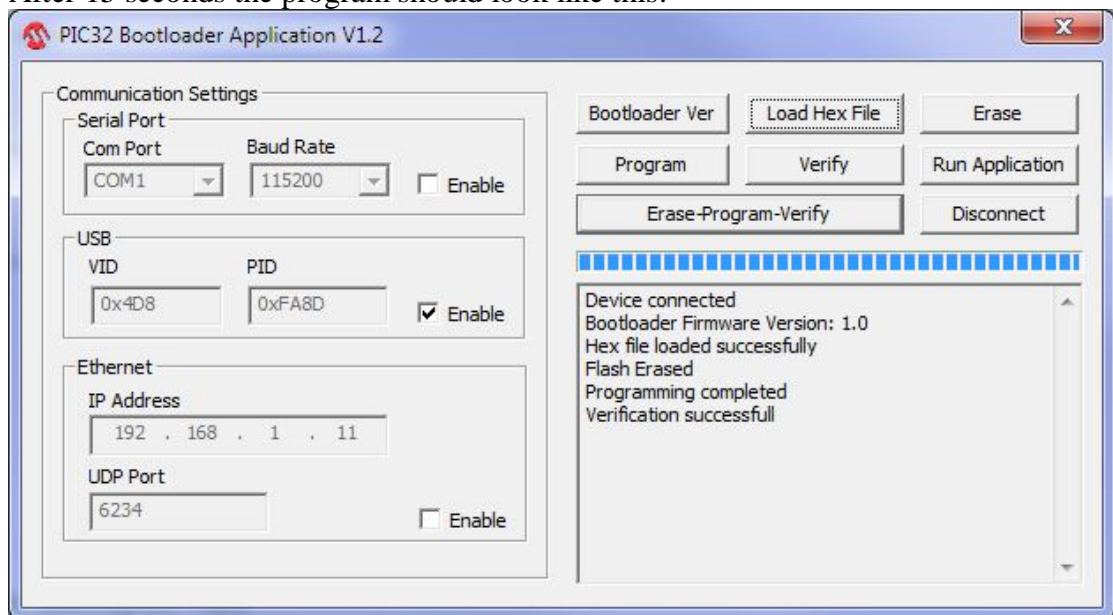
If something does go wrong you can always abort the upgrade and restart from step 1, even if the upgrade was interrupted in the middle of re-flashing the memory.

Step by step instructions:

1. Remove the power to the Terminal
2. Place a jumper across the two pins marked **BOOTLOAD**
3. Place a jumper across the two pins marked **USB PWR**
4. Connect the Terminal's USB to your Windows computer – the LED should illuminate but nothing will show on the video output. This is because the Terminal is now in upgrade (or "bootload") mode.
5. Remove the jumper across the two pins marked **BOOTLOAD** – the LED should go out
6. Run the program **PIC32UBL.exe**. This is a Microsoft MFC based VC++ application developed using "Microsoft Visual Studio .Net 2003". Depending on your operating system you may need to install the latest .NET runtime on your computer for this to run correctly.
7. Tick the **Enable** box in the USB area
8. Enter **0xFA8D** into the **PID** text field
9. Click on the **Connect** button
10. The program should look like this:



11. Click on **Load Hex File** and navigate to the updated firmware file which should have an extension of .HEX.
12. Click on **Erase-Program-Verify**
13. After 15 seconds the program should look like this:



14. Click on **Disconnect** and close the program
15. The firmware is now upgraded. You need to remove power and restart the terminal to run the new firmware. Check that you have removed the BOOTLOAD jumper as that would put the Terminal back into bootloader mode whenever power is applied.

For firmware updates go to: <http://geoffg.net/terminal.html>