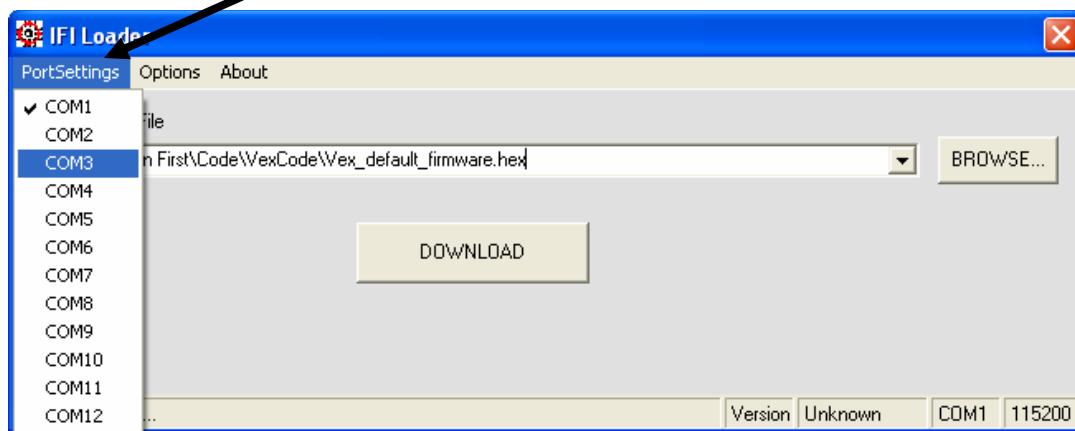
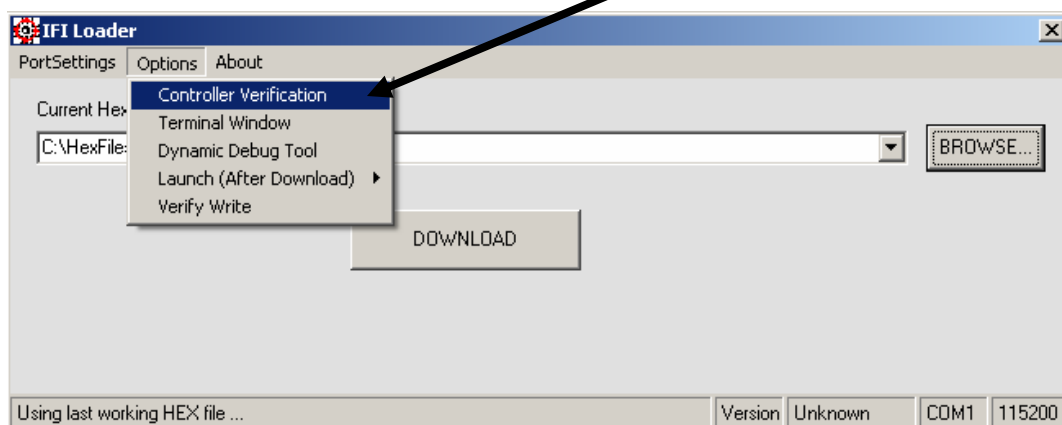


The following process is how to update firmware in the Master processor.

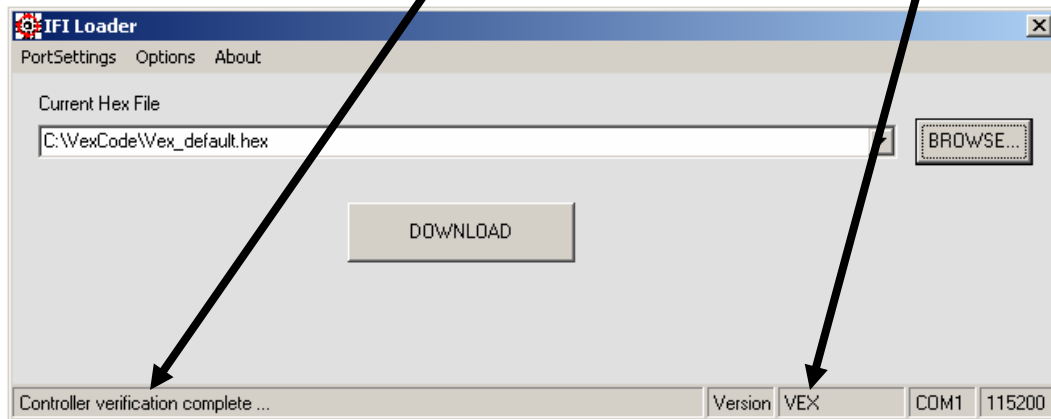
The **1st Step** is to make sure that the IFI Loader is configured on the correct Com Port. To do this, you must first find out what Com Port your PC is using for the USB Adapter. For Windows XP, look under Start, Control Panel, System, Hardware, and then Device Manager. Now click on Ports (Com & LPT) and if you are using the Vex USB Adapter you should see “Prolific USB-to-Serial Comm Port (COMX)” where X is the Com Port number you need for the IFI Loader. Open the IFI Loader and click on PortSettings. Now click on the appropriate COMX.



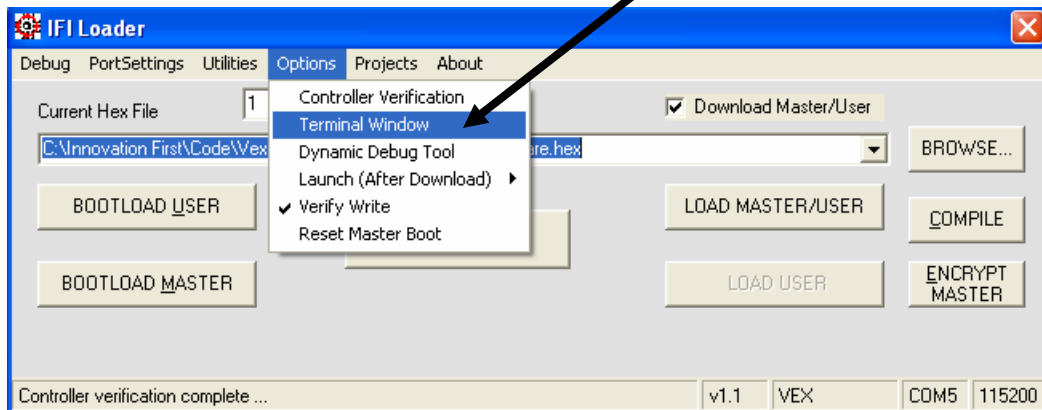
The **2nd Step** is to make sure that the Vex Microcontroller has been verified. Make sure there is a connection between the PC and the controller using the appropriate Programming Hardware prior to this operation and the controller is turned On. The IFI Loader supports many different controllers. The verification allows the Loader to select the appropriate protocol used during the download process. To do this, click Options and then Controller Verification.



Now you should see 'Controller verification complete ...' on the lower left and 'VEX' in the lower right of the status window.

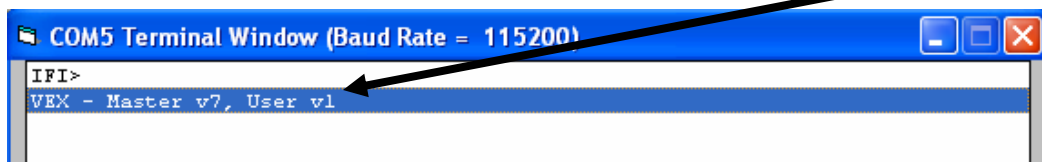


Step 3. You may want to verify the current version of Master and User Code in the controller. This step is not necessary and may not be possible if the controller is “locked up”. In order to do this, make sure the controller is turned Off then click on the “Terminal Window” from the “Options” menu of the IFI Loader.



Turn the controller unit “On” for a second then turn it “Off”. On the Terminal Window, you should see the IFI> prompt followed by the master version number and user version number.

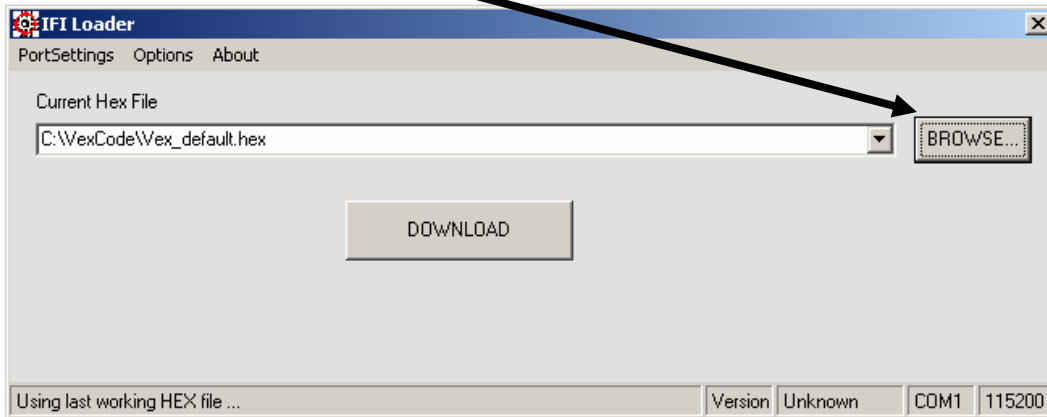
Note: the user has the ability to change the user version number—the default is shown below.



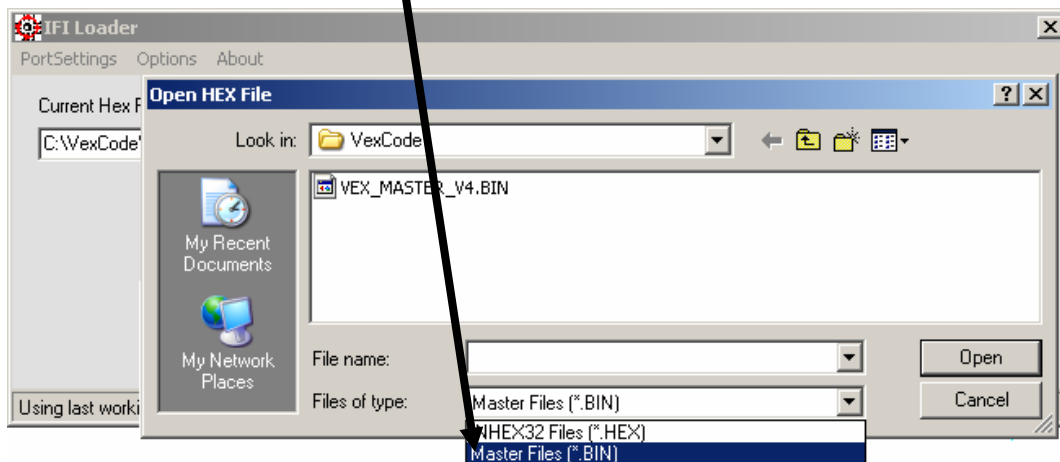
Note: “IFI User Processor Initialized” is the “out of box” default firmware. If you see that, the controller has never been re-programmed.

The text after the version numbers will vary and is determined by the print statements in the User Code. If there are no “printf” statements, there will be no text after the version status line.

The **4th Step** is to download the Master BIN file. To do this, you must first find the BIN file by clicking on the BROWSE button from the Main IFI Loader window.

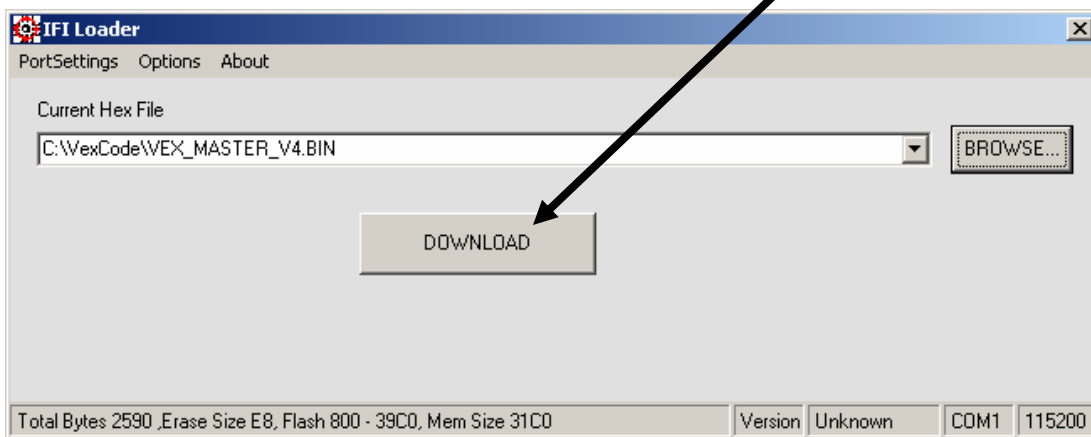


To view BIN files, select “Master Files (*.BIN)” in the “Files of type” combo box.

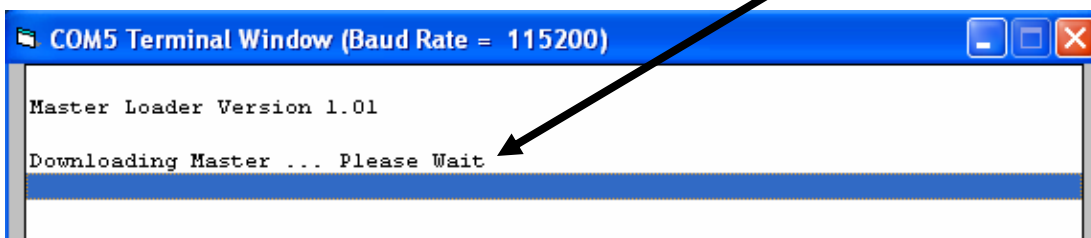


Navigate to the appropriate folder where you have stored the Master BIN file if it is not currently displayed. Once the appropriate BIN file has been selected, click on the “Open” button which will return you to the main IFI Loader Screen.

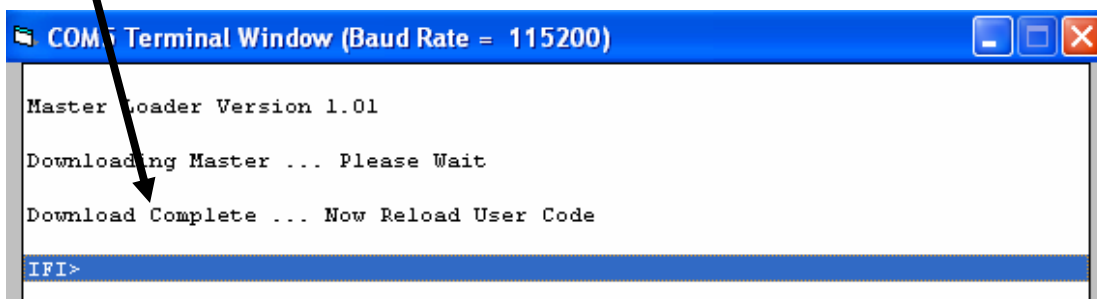
You should now see the path to the Master file displayed in the “Current Hex File” window box. Now download the Master BIN file to the controller by clicking the DOWNLOAD button.



As the Master code is being downloaded, you will see a status bar indicating the progress of the download on the IFI Loader window. The following Terminal Window will be displayed.



The following Terminal Window will be displayed when the Master Code download has been completed.



The **5th Step** is to download the User Code. Once the master firmware has been updated, the User Code must be reloaded. In order to do this, repeat **Step 4**. Rather than selecting “Master Files (*.BIN)”, you must select the “INHEX32 Files (*.HEX)” option. After downloading the appropriate user code (file), the controller is ready for use.

To verify that the master code and user code is downloaded correctly, follow the procedure at **Step 3**.