INT5500 Programming Procedure

Software Installation

Copy the content of the ***Programming_Tools*** directory located on the CD to a Windows 2000 PC.

Programming a Device for the First Time

1. Run the Config.exe program.
2. Enter a unique MAC Address for the device in the "MAC Address" edit box.
   Note: Each adapter required a unique MAC Address for correct network operation.
3. Enter Manufacturer's name in the "Manufacturer Name" edit box.
4. Enter Product's name in the "Product Name" edit box.
5. Save the configuration file.
   Note: Each device requires a unique *.cfg* file. Each file must be manually generated and saved under a unique filename. Previous configuration file can be loaded and modified then saved with its own unique file name. An automated procedure is under development.

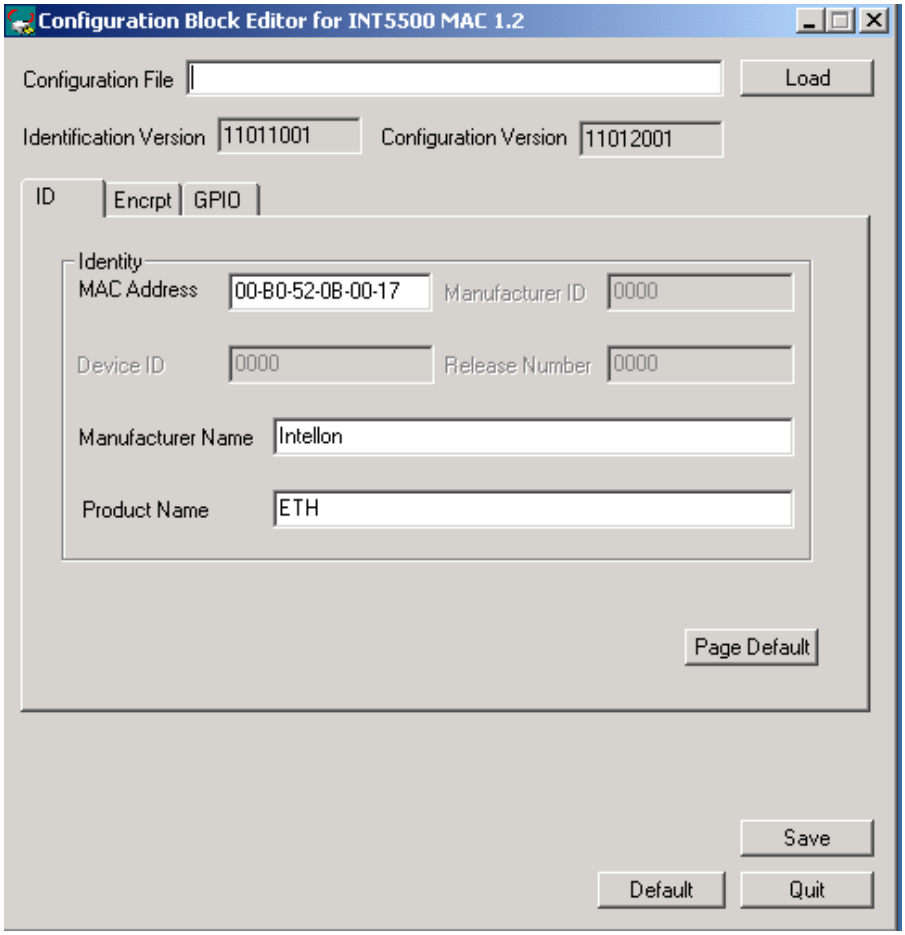


Figure 1. Config.exe Utility

6. Assign status functions to GPIO signals.
   Note: As shown in Figure 2, there are eight functions that can be mapped to one or more GPIO signals. The following gives a basic description of each function:
   - MPDU Transmit – Active when a power line packet is transmitted.
   - MPDU Receive – Active when a power line packet is received.
   - MSDU Transmit – Active when an Ethernet packet is transmitted.
   - MSDU Receive – Active when an Ethernet packet is received.
   - Collision – Active when a power line packets collide.
   - Link – Active when a power line link is established.
   - Network Status – Active when Ethernet link is established.
   - Privacy – Active when DEK is in use.

   The default page, shown in Figure 2, maps all power line functions to GPIO4 and all Ethernet functions to GPIO1. Likewise, Privacy is mapped to GPIO3.

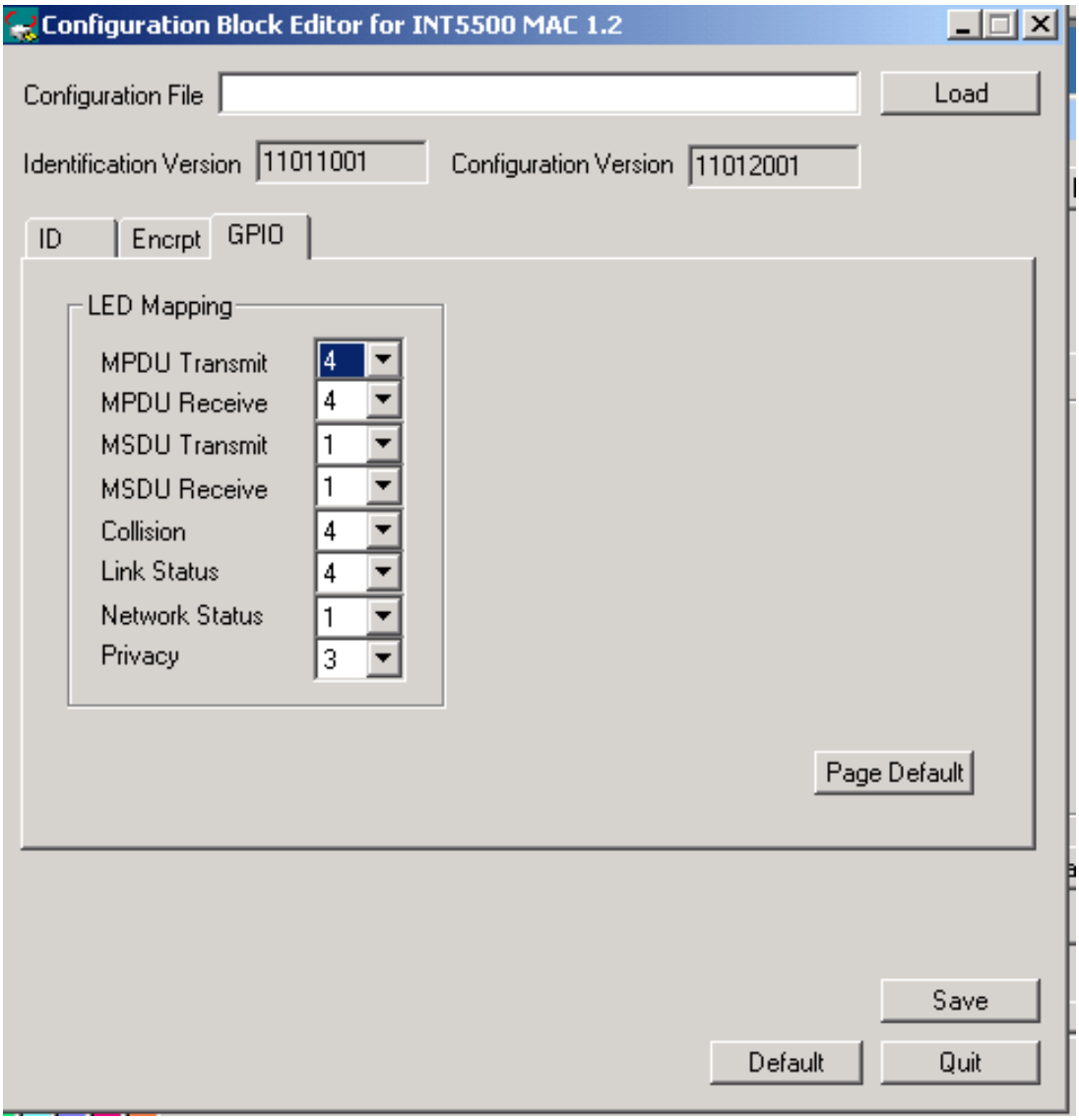


Figure 2: GPIO Page

7. Select the “Encrpt” tab and enter a unique DEK into the “DEK Password” edit box. The Encrpt tab is shown in Figure 3 below.
8. Press the “Set DEK” button. This will fill in the “Default Encryption Key” edit box with the correct hexadecimal value.

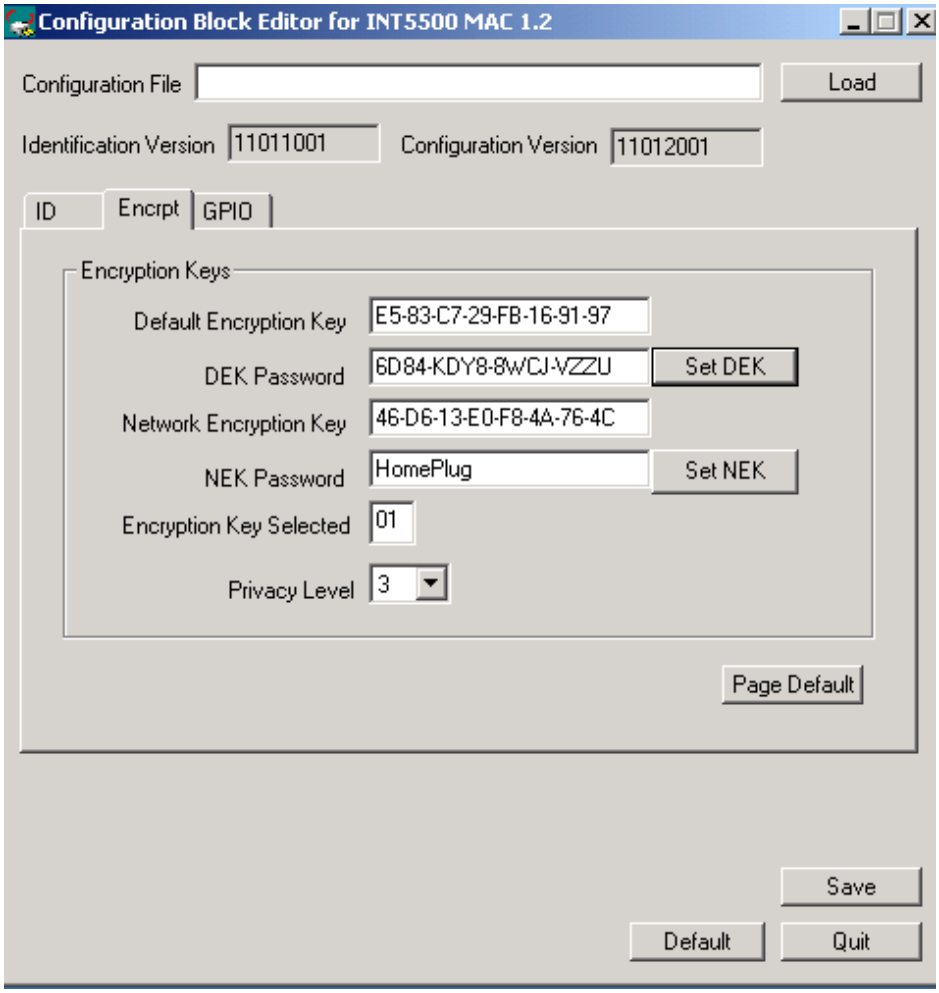


Figure 3: Encryption Page

9. Save each file with a unique name. Generate a configuration file for each device to be programmed. Press the “Save” button to save the file.
10. Exit the Config.exe program by pressing the “Quit” button.
11. Connect and power up the device to be programmed. After the Ethernet link is established, run the DV110X.exe program.

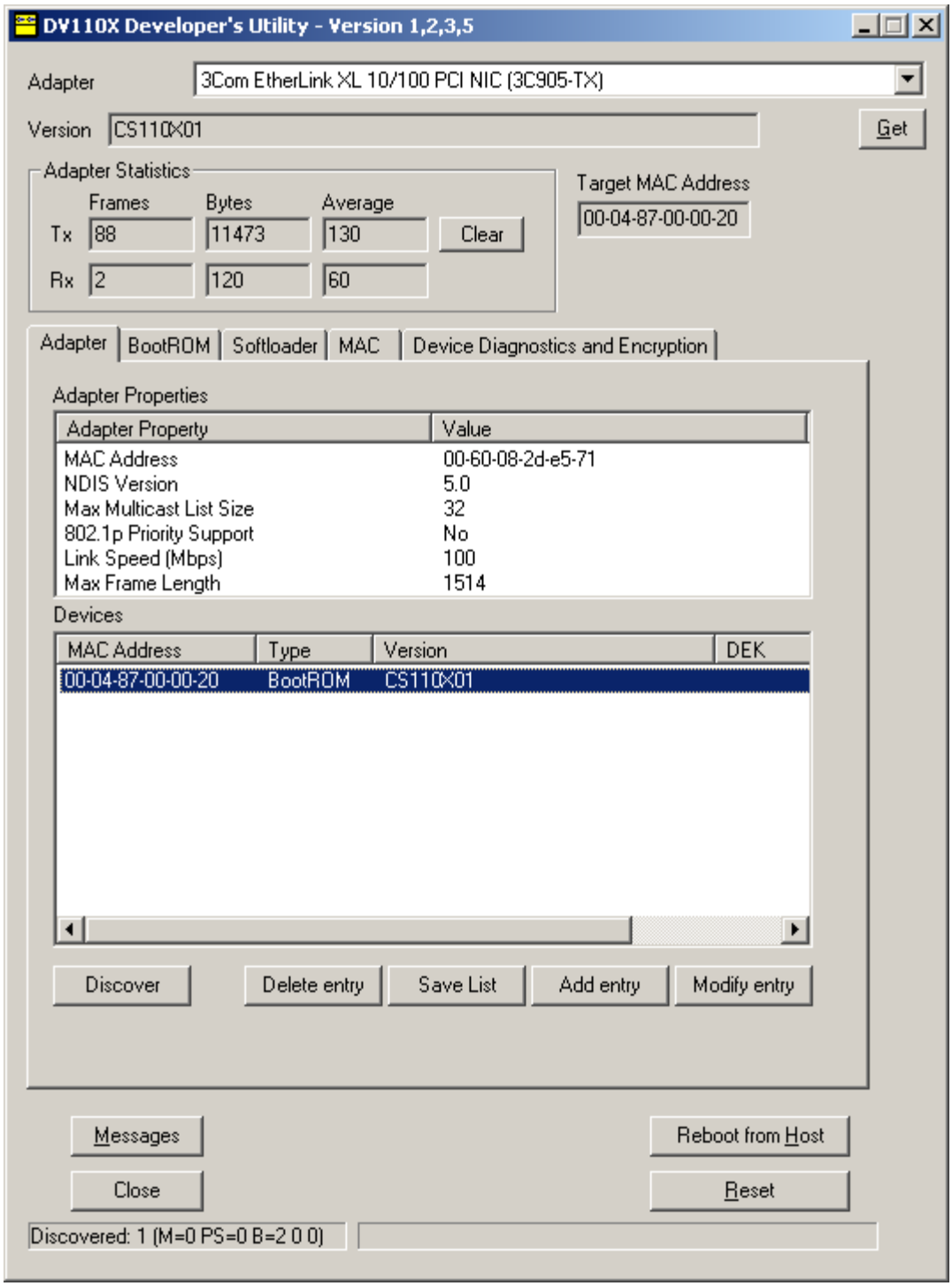


Figure 4: DV110X.exe Program

12. If there are multiple NICs in the computer, choose the Ethernet NIC connected to the device to be programmed from the Adapter pull-down menu.
13. The Adapter tab should indicate that the device is in BootROM mode with a version of CS110X01, as shown in Figure 4.
14. Select the BootROM tab. The BootROM tab page is illustrated in Figure 5.

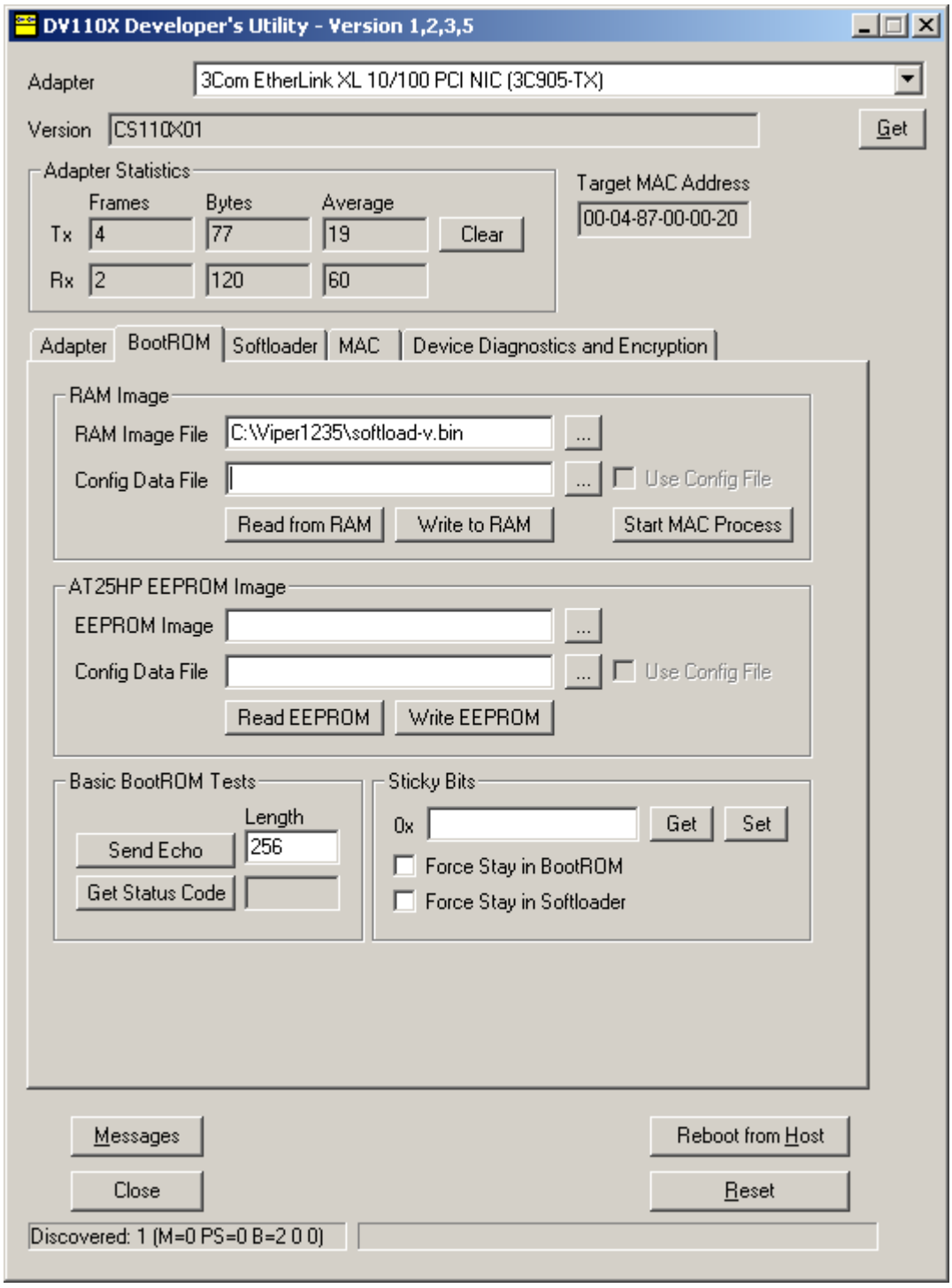


Figure 5: BootROM Tag Page

15. In the RAM Image group on the Boot ROM tab, set the RAM Image File to point to the current “softload-v.bin” file.
16. Press the “Write to RAM” button.
17. Press the “Start MAC Process” button. This will cause the warning dialog box to display, as shown in Figure 6. Press the OK button.

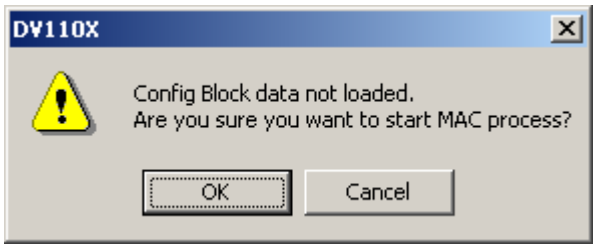
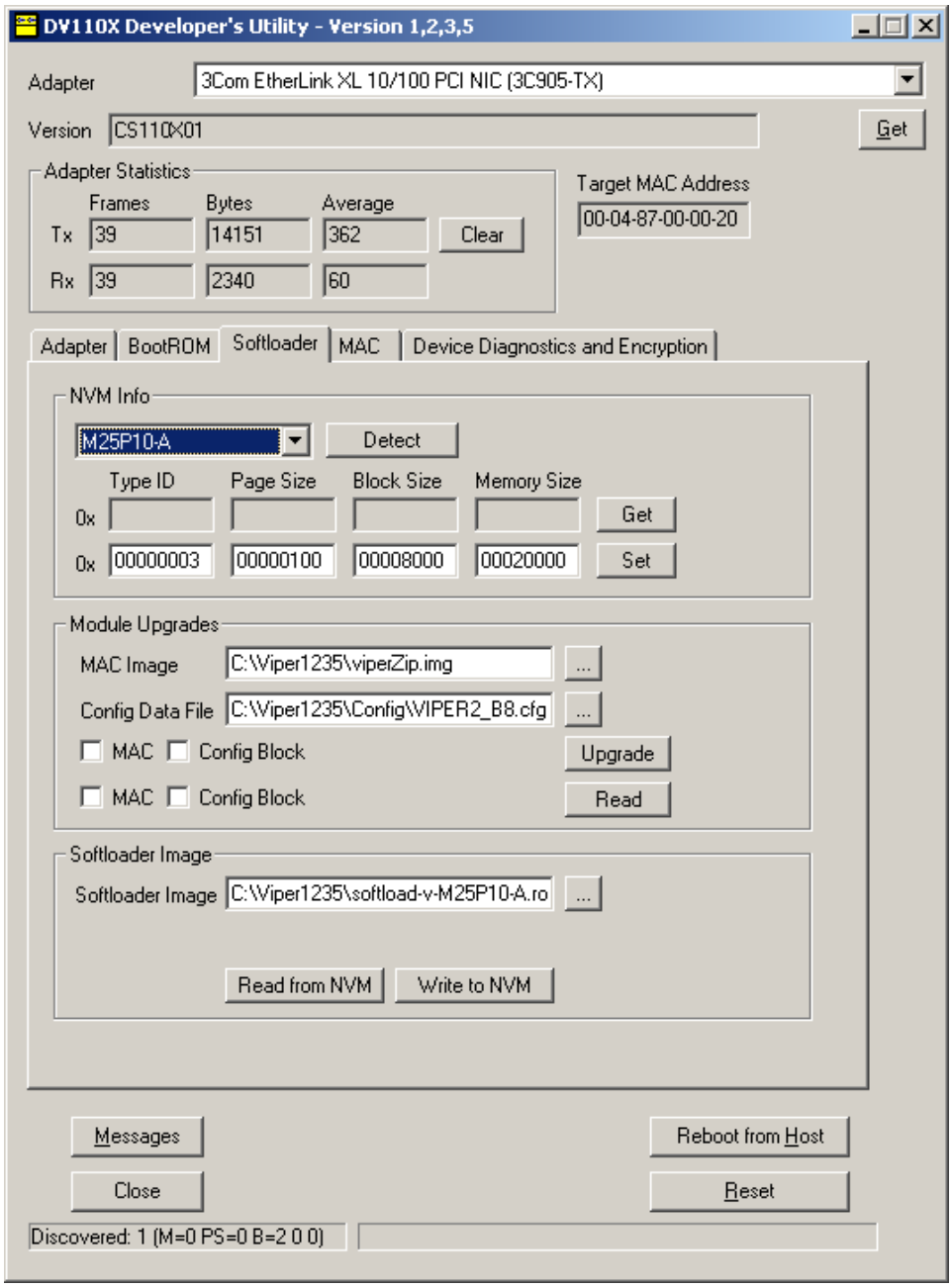


Figure 6: Warning Dialog Box

18. Select the Softloader tab.



19. Under the Softloader tab in the NVM Info group, select the Flash type. This is usually the M25P10-A. (Note: Only the M25P10-A is supported.)
20. Press the "Set" button.
21. In the Softloader Image group on the Softloader tab, set the Softloader Image File to point to the current "softload-v-M25P10-A.rom" file.
22. Press the "Write to NVM" button. Progress indicators will display while the device is being programmed with the softloader.
23. Wait until the status bar indicates that the verification is complete.
24. Power cycle the device.

25. After the Ethernet Link is re-established, select the Adapter tab and press the "Discover" button.

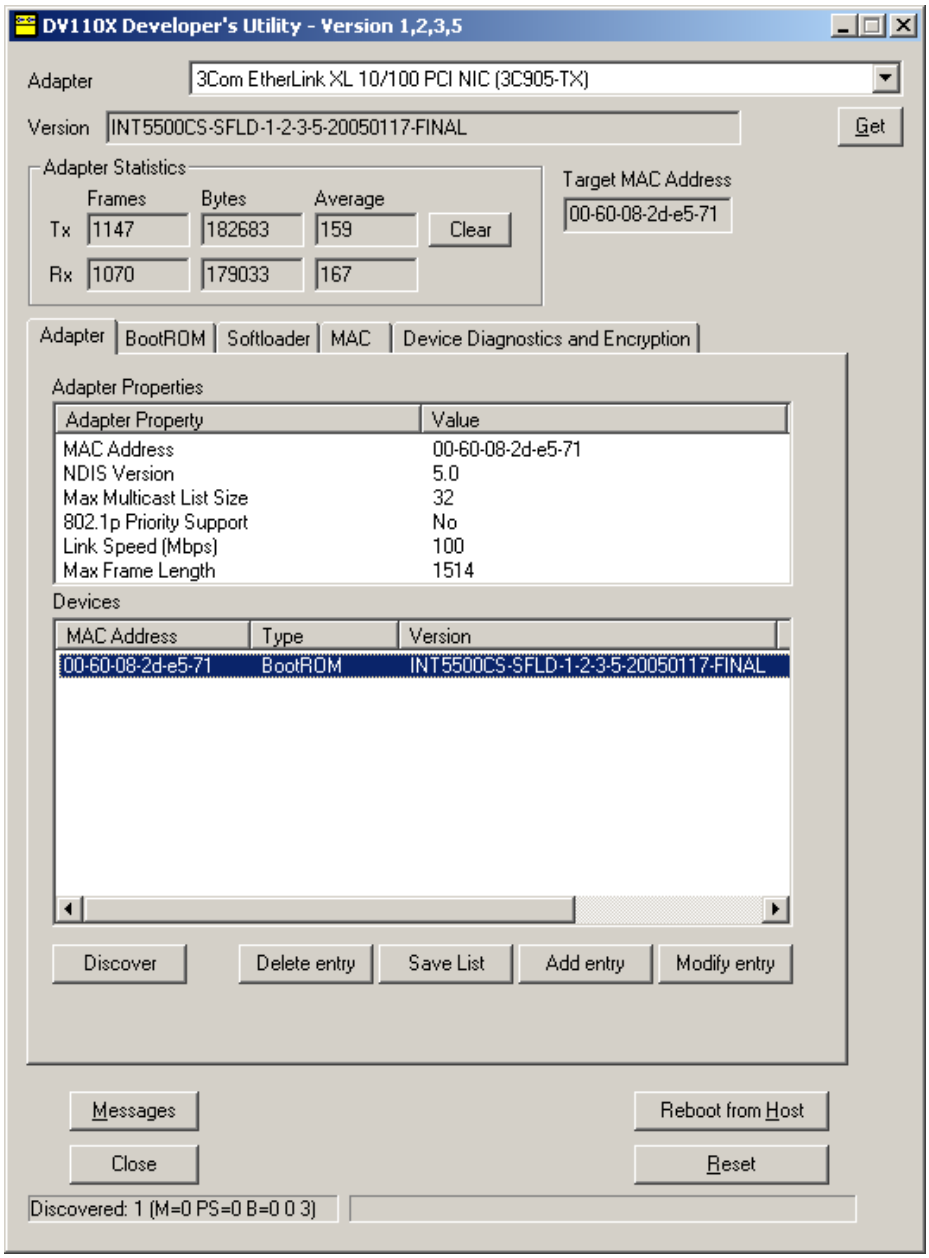
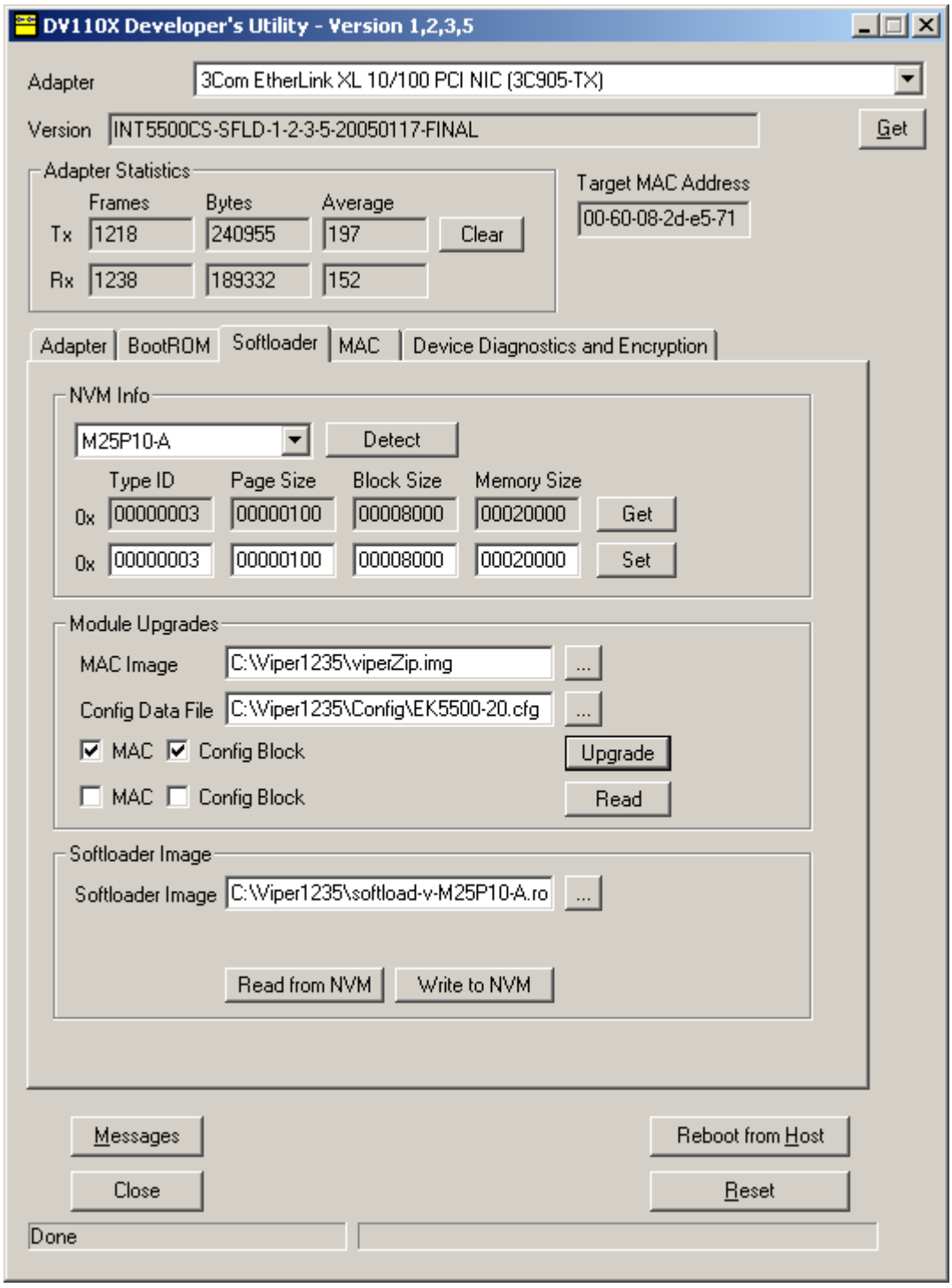


Figure 7: Adapter Tab with Softloader Version Displayed

26. Verify that the version field is updated with the updated firmware version name (e.g. INT5500CS-SFLD-x-x-x-x-xxxxxxxx-FINAL, where the "x" give version specific information, as shown in Figure 7).



27. Select the Softloader tab. Under the Softloader tab in the Module Upgrades group, set the MAC Image to point to the current "viperZip.img" file.
28. Under the Softloader tab in the Module Upgrades group, set the Config Data File to point to the configuration file created for this device in steps 1 through 6.

29. Select both the MAC and Config Block check boxes across from the “Upgrade” button.
30. Press the “Upgrade” button. The Progress indicator shows when the programming is complete.
31. Power cycle the device or Press the “Reset” button.
32. Select the Adapter tab. After the Ethernet link is established, the utility should show Type as “Local” along with the new MAC Address. The Version should show “INT5500CS MAC-xxxx…”, where the “x” gives version specific information.
33. The device may now be placed into service.

Updating a Device

1. Connect and power up the device to be updated.
2. After the Ethernet link is established, run the DV110X.exe program.
3. The device should come up as Local device.
4. Click the “Reboot from Host” button. This will change the device type from Local to BootROM as shown in Figure 8. Note that the Version should now indicate the softloader mode (e.g. INT5500CS-SFLD-xxxx…). Where the “x” stands for version specific information.

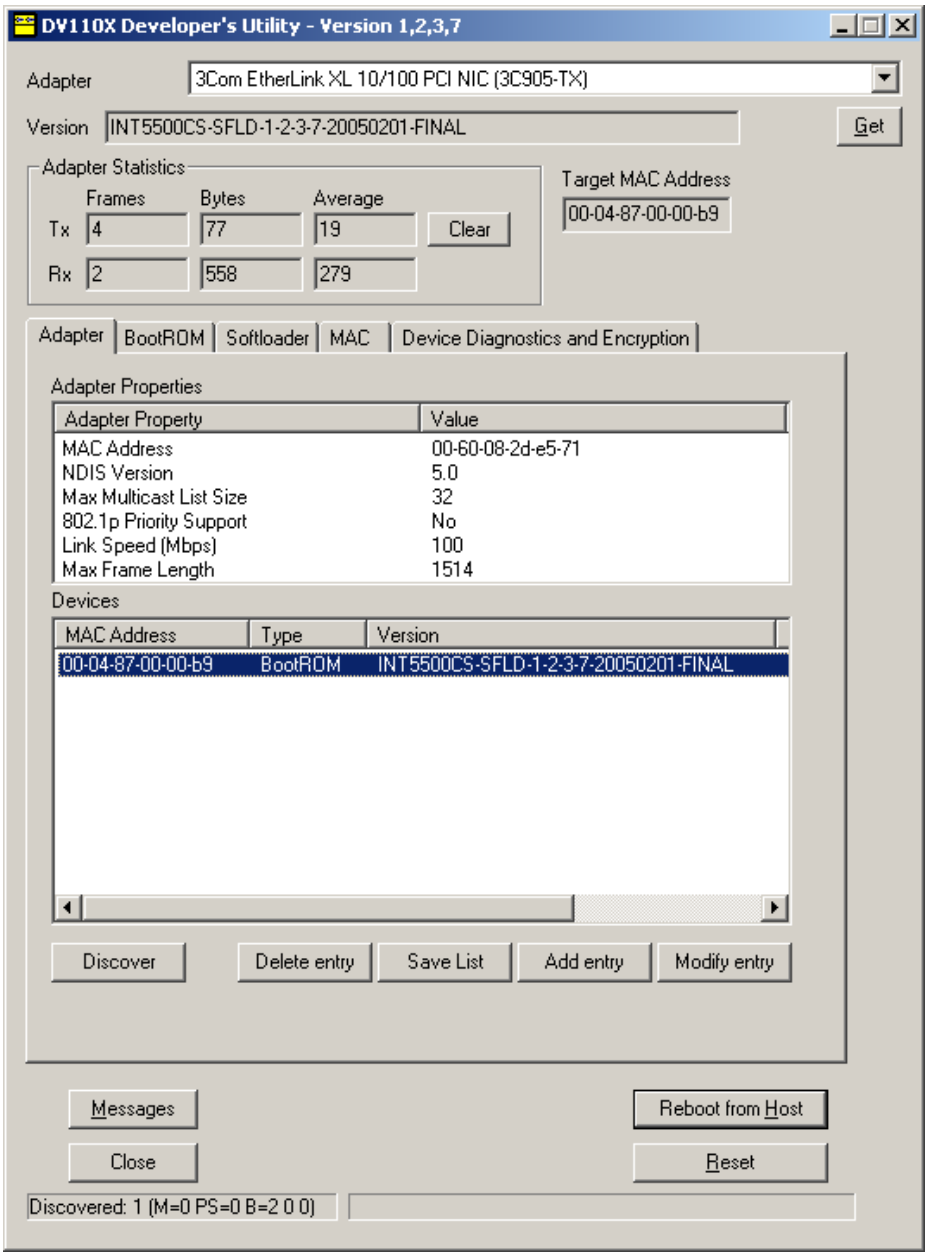


Figure 8: DV110X.exe Adapter page

5. Select the Softloader tab. This is shown is Figure 9.

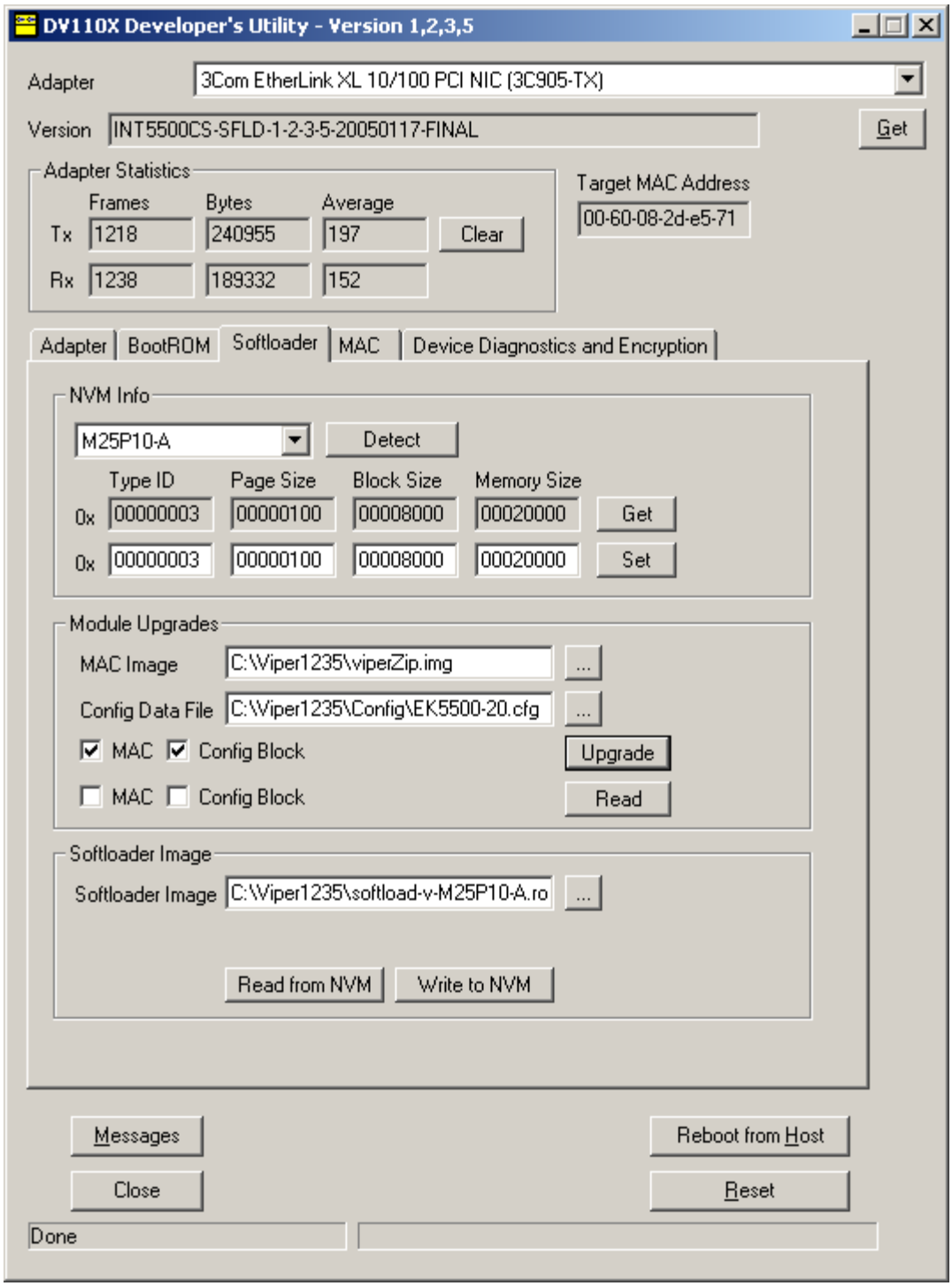


Figure 9: Softloader Page

6. Under the Softloader tab in the Module Upgrades group, set the MAC Image to point to the current "viperZip.img" file.

7. Under the Softloader tab in the Module Upgrades group, set the Config Data File to point to the configuration file for this device. This should have been created when the device was first programmed.
8. Select both the MAC and Config Block check boxes across from the "Upgrade" button.
9. Press the "Upgrade" button. The Progress indicator shows when the programming is complete.
10. Select the Adapter tab. Press the "Reset" button. It should report that it is in Local and the version of the Firmware to be "INT5500CS MAC-xxxx…" where the "x" gives version specific information.
11. Press the "Close" button.
12. The device may now be placed back into service.