JNMM-4LP-XT Driver
Installation Instructions for Linux

Revision A.3 JAN 2017

Revision	Date	Comment
A.0	01/09/2016	Initial release
A.1	21/09/2016	Updated the TX/Error Interrupt
A.2	02/11/2016	Updated the RW function in driver/Demo application, User to configure the Base address/DIO address for ISA mode.
A.3	2/1/2017	Updated GUI Monitor.

FOR TECHNICAL SUPPORT PLEASE CONTACT:

support@diamondsystems.com

Diamond Systems Corporation
555 Ellis Street
Mountain View, CA 94043 USA
Tel 1-650-810-2500
Fax 1-650-810-2525
www.diamondsystems.com

CONTENTS

1. INTRODUCTION

This document describes the steps to run the JNMM-4LP-XT Driver Installation for Linux OS.

2. INSTALL JNMM-4LP-XT DRIVER SOFTWARE FOR ISA MODE

- Open the terminal in root mode.
- Go to the “Driver” directory (version_01.04.000 →Driver).
- Compile the Driver using the “make” command.
- Please give the permission to all file using the command “chmod 777 *”.
- For changing the ISA mode and Base address then you have to open “installISA.sh” file.
- To change the base address and mode of a device in J13 & J14 CONFIG and please open “installISA.sh” file using the command “vi installISA.sh” and refer the below shown picture

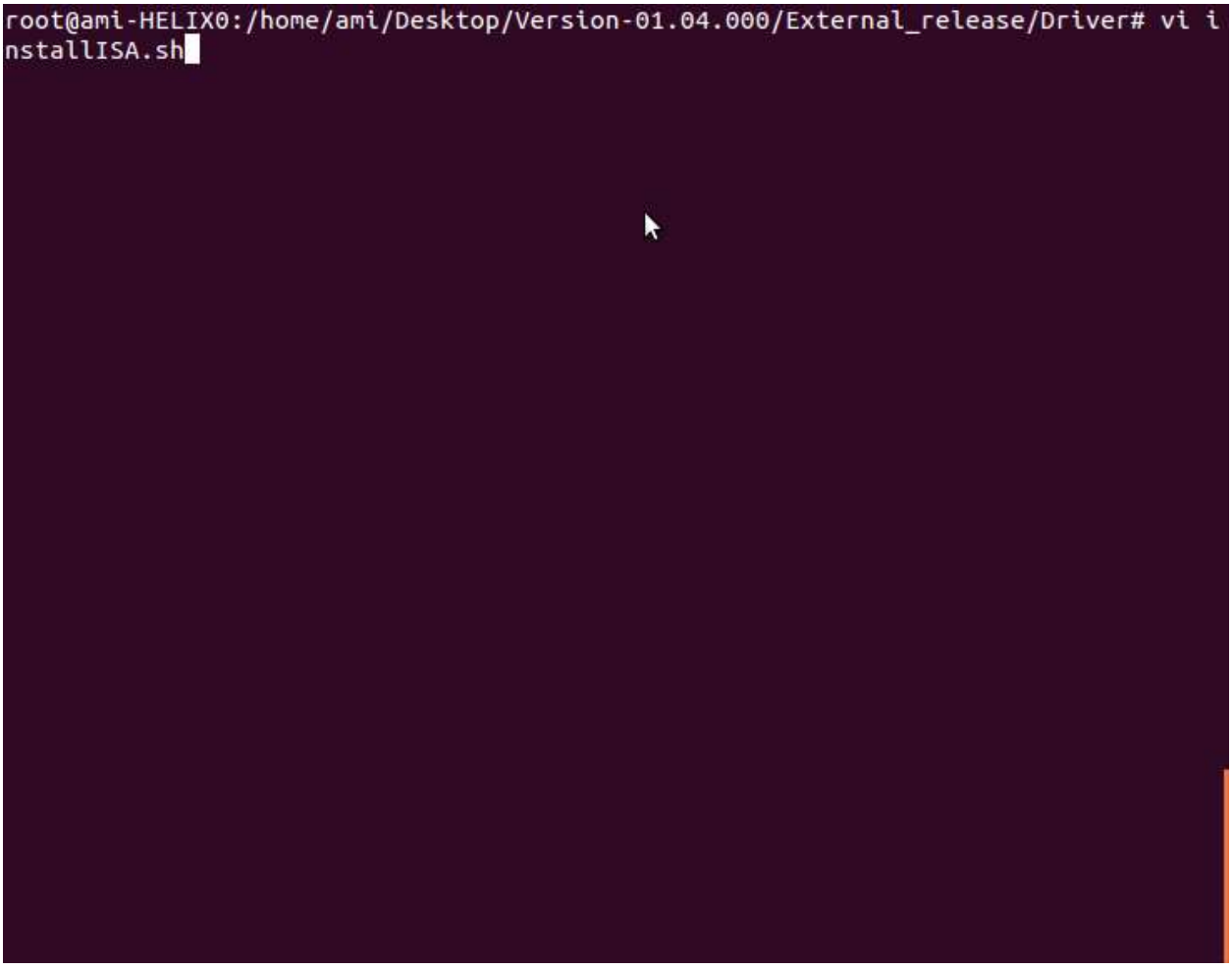


Figure 1: Diamond Systems JNMM-4LP-XT Driver Setup

- After opening the “installISA.sh” file, please enter “insert” key in write mode.
- Enter the mode = 1, base_addr_val, irq, isa_dio_base_addr which is configured on J13 and J14.
- After editing the file please enter the “ESC” key and “:wq” to save the file.
- Refer the ISA IRQ Jumper (J13), where place the jumper on selected IRQ and place it on “R” pin before installing the drivers.
- For ISA mode place the jumpers on selected base address (M2-M0), DIO base address (IO9-IO5), and place the jumper in “ISA” pin (J14).

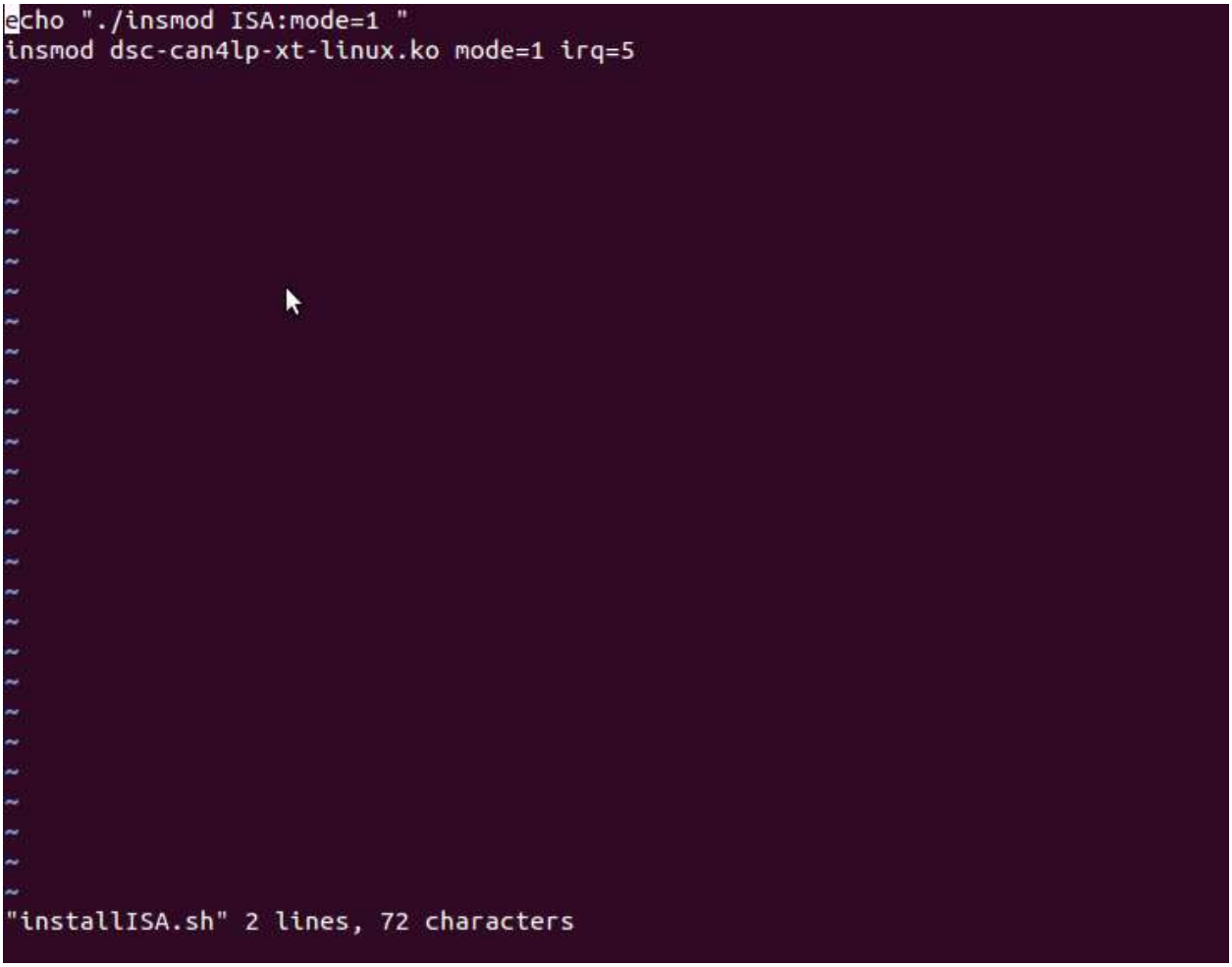


Figure 2: Diamond Systems JNMM-4LP-XT Driver Setup

- After you have changed in “installISA.sh” and Run the “./installISA.sh” file as shown in figure 1.

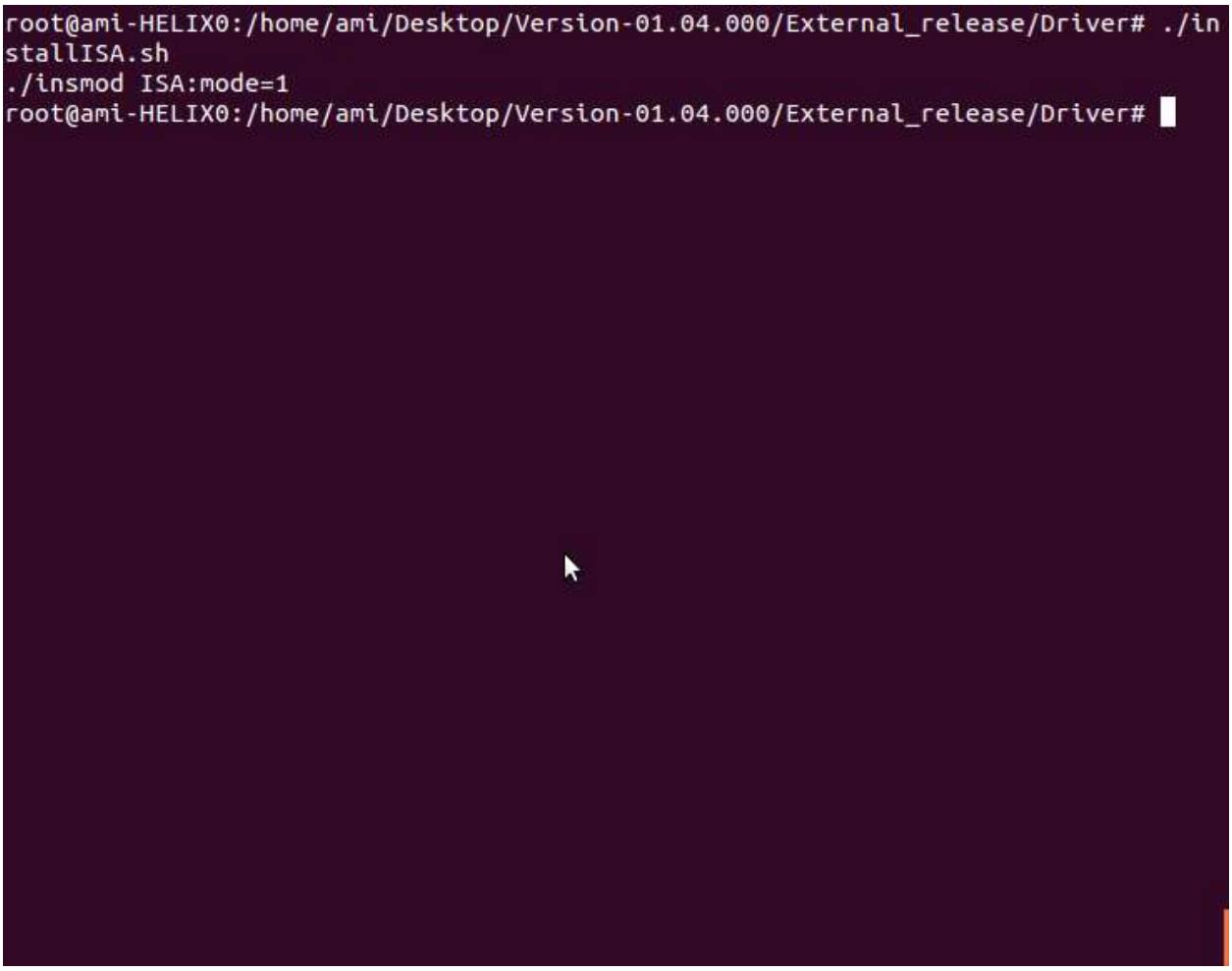


Figure 3: Diamond Systems JNMM-4LP-XT Driver Setup

- Open new terminal and run “dmesg” command for checking whether driver is installed or not.

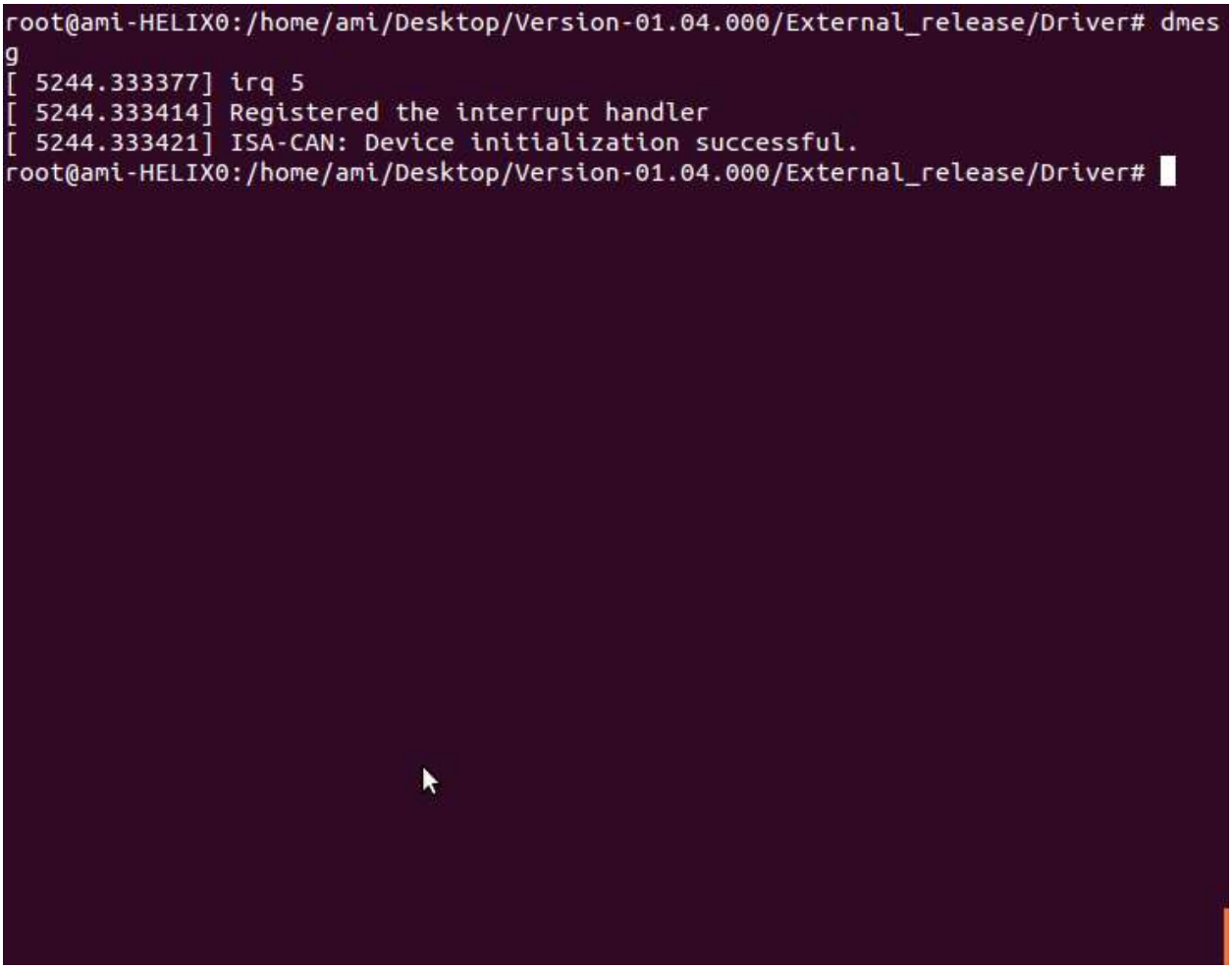


Figure 4: Diamond Systems JNMM-4LP-XT Driver Setup

3. UNINSTALL JNMM-4LP-XT DRIVER SOFTWARE FOR ISA MODE

- To Uninstall the JNMM-4LP-XT Driver Software for ISA mode, run the "./uninstallISA.sh" file.

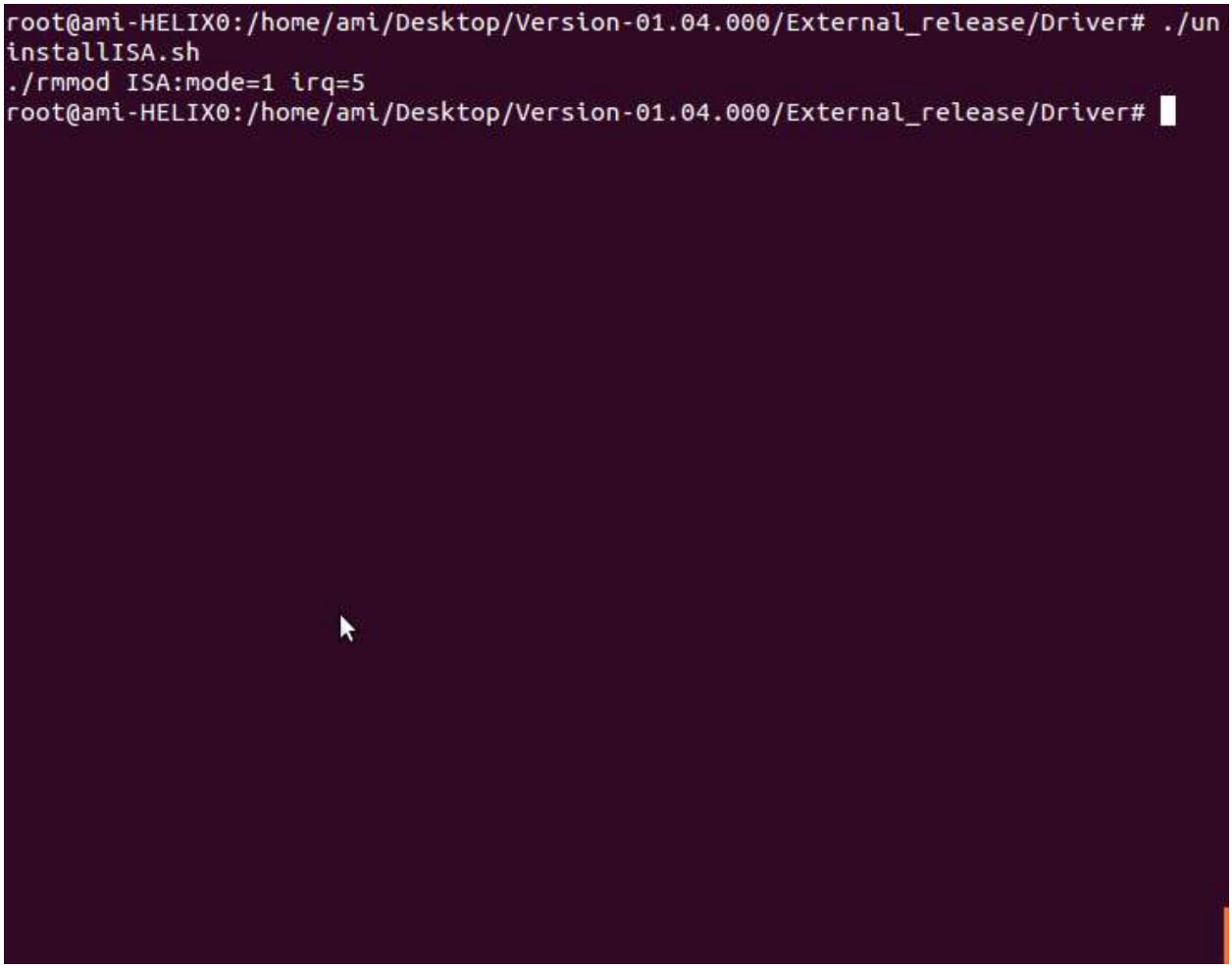


Figure 5: Diamond Systems JNMM-4LP-XT Driver Setup

- Open new terminal and run “dmesg” command for checking whether driver is uninstalled or not.

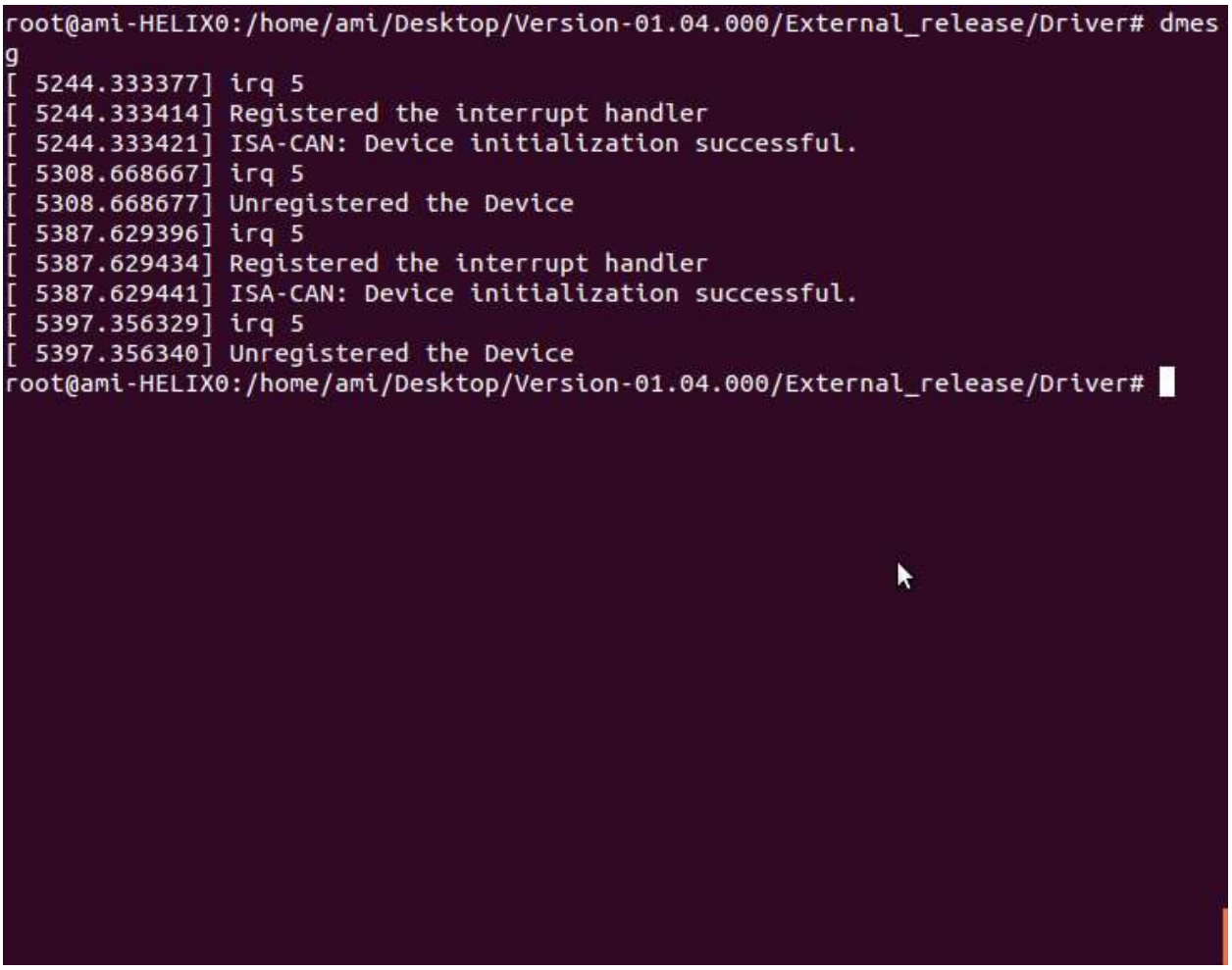


Figure 6: Diamond Systems JNMM-4LP-XT Driver Setup

4. INSTALL JNMM-4LP-XT DRIVER SOFTWARE FOR PCI MODE

- Open the terminal in root mode.
- Go to the “Driver” directory (version_01.04.000 →Driver).
- For PCI mode remove the jumper from “ISA” pin (J14).
- Run the “./installPCI.sh” file as shown in figure 5.

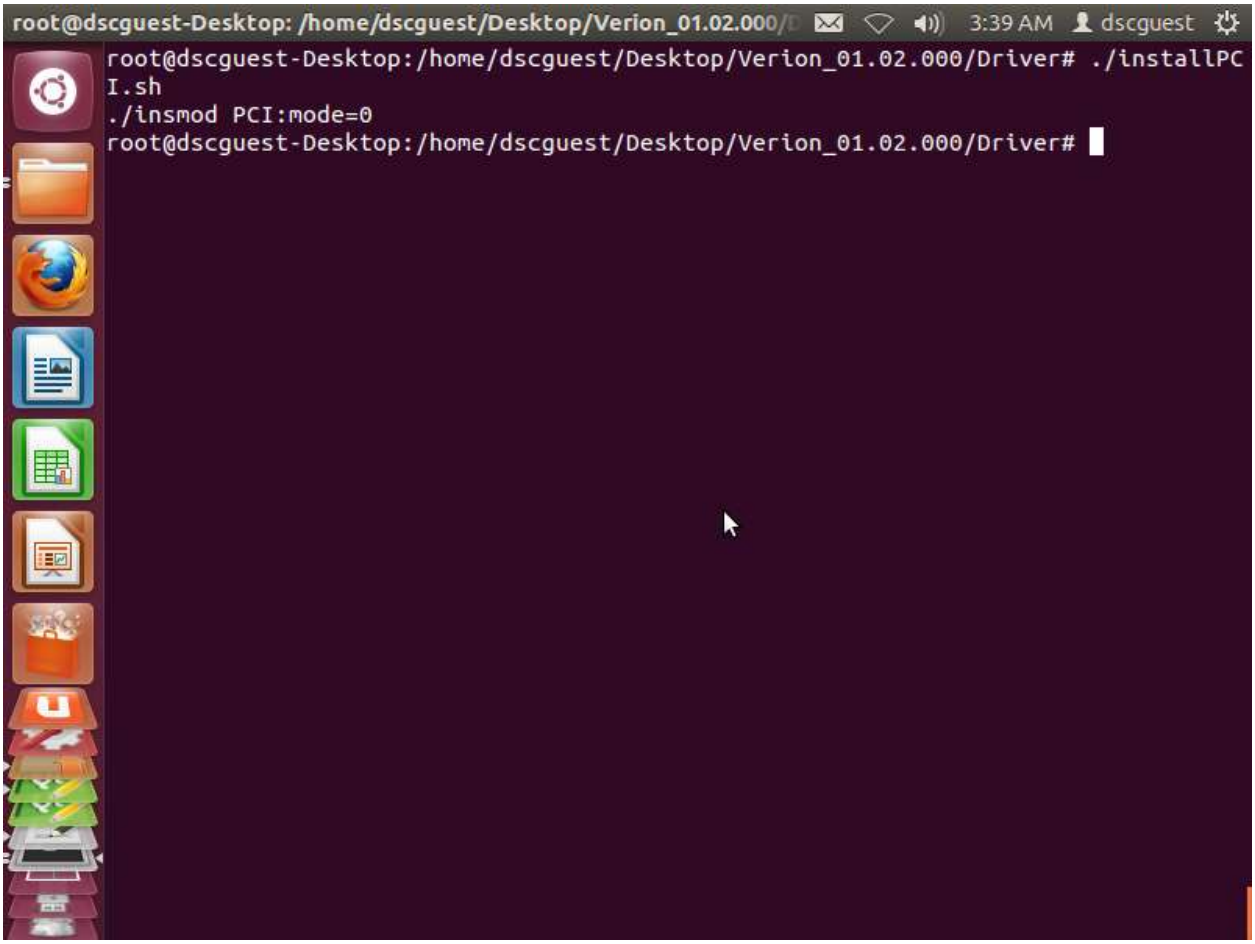


Figure 7: Diamond Systems JNMM-4LP-XT Driver Setup

- Open new terminal and run “dmesg” command for checking whether driver is installed or not.

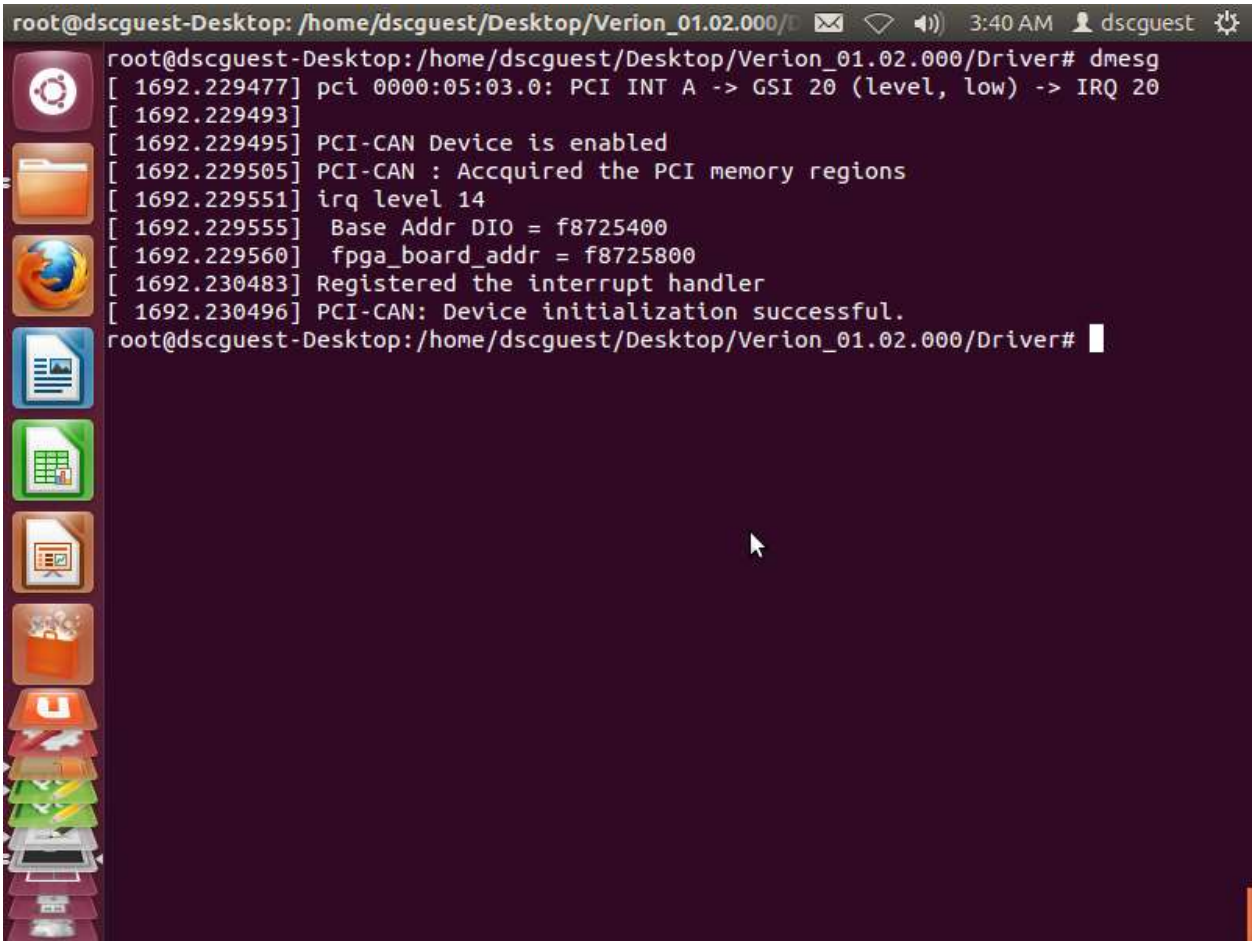


Figure 8: Diamond Systems JNMM-4LP-XT Driver Setup

5. UNINSTALL JNMM-4LP-XT DRIVER SOFTWARE FOR PCI MODE

- To Uninstall the JNMM-4LP-XT Driver Software for ISA mode, run the "./uninstallPCI.sh" file.

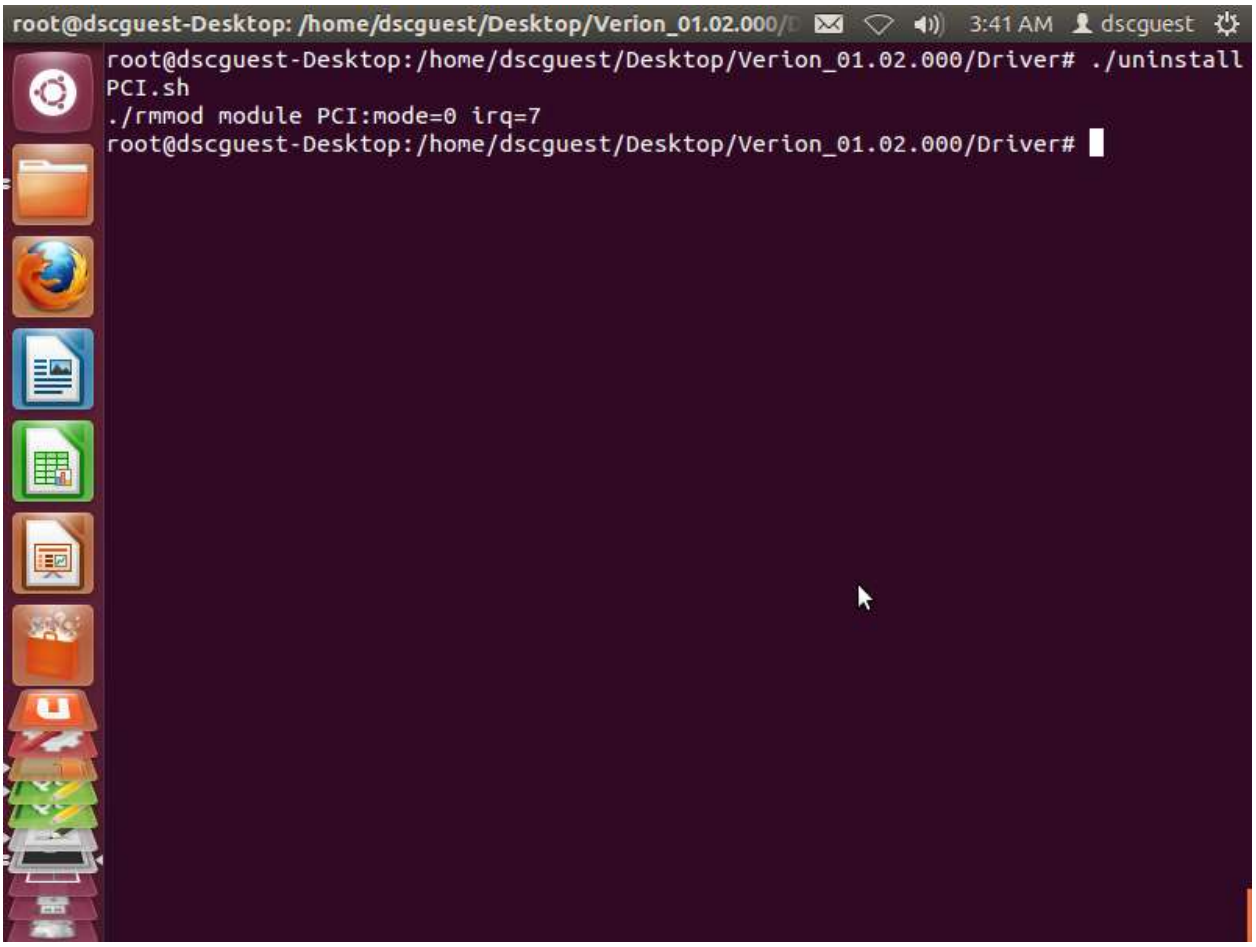


Figure 9: Diamond Systems JNMM-4LP-XT Driver Setup

- Open new terminal and run “dmesg” command for checking whether driver is uninstalled or not.

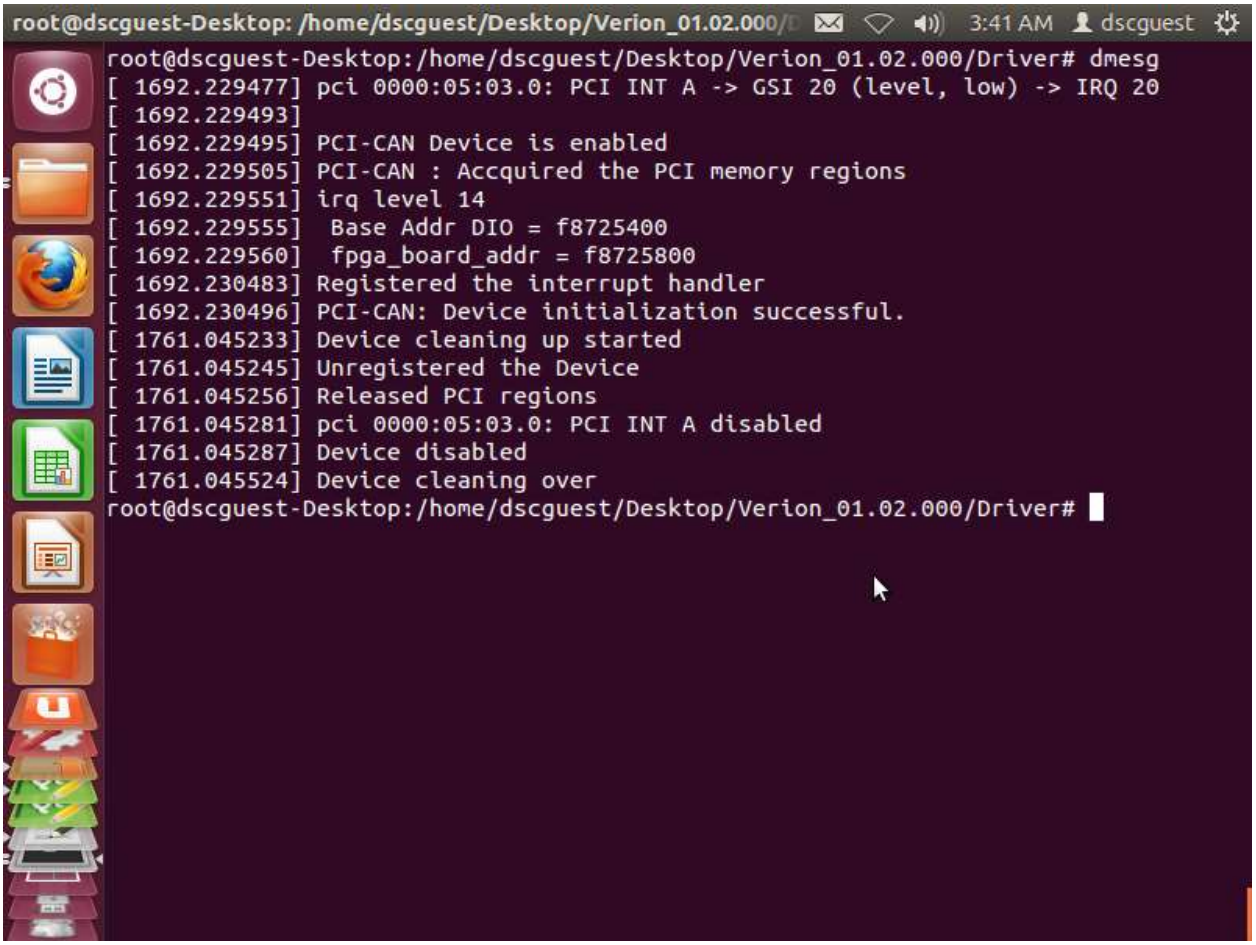
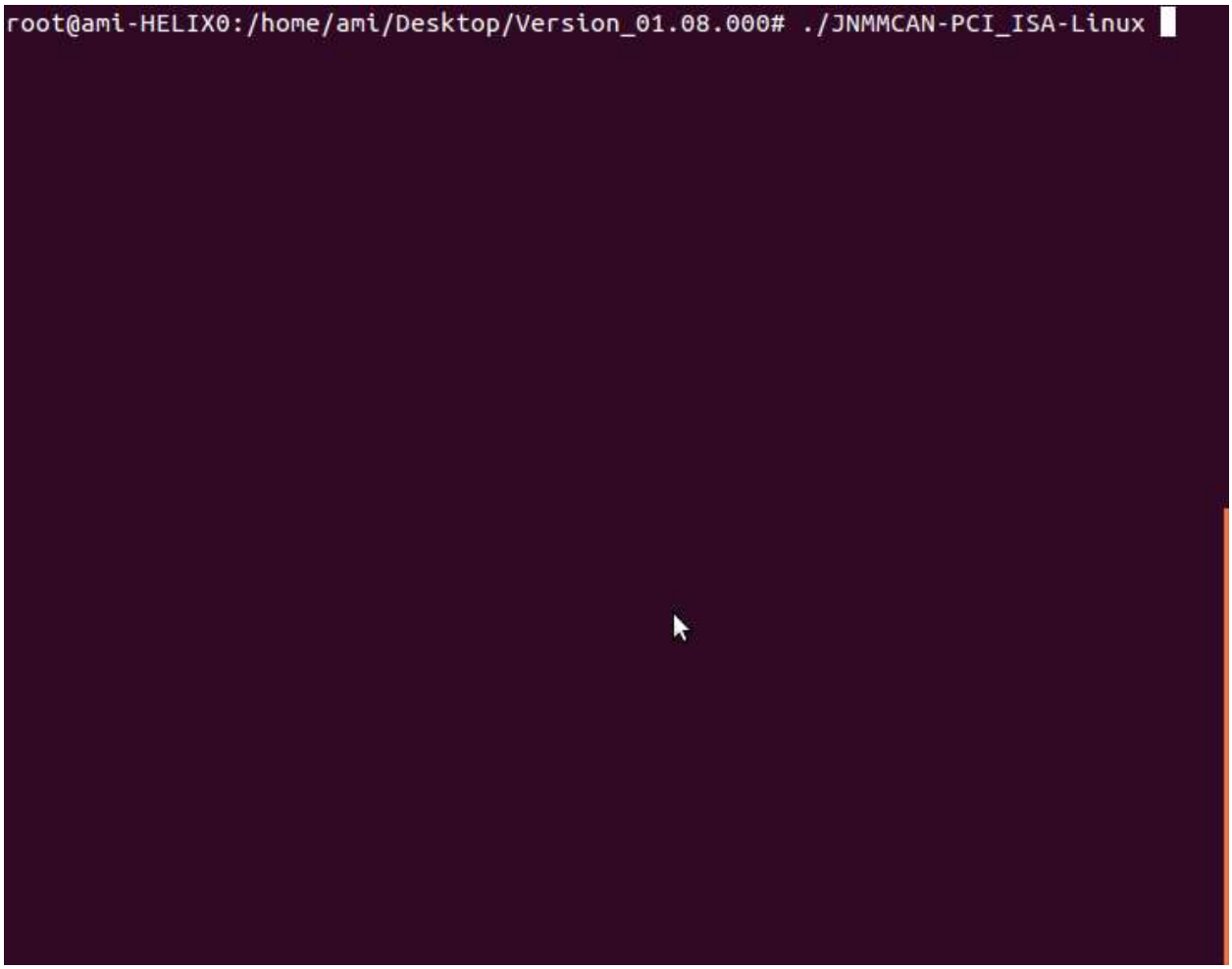


Figure 10: Diamond Systems JNMM-4LP-XT Driver Setup

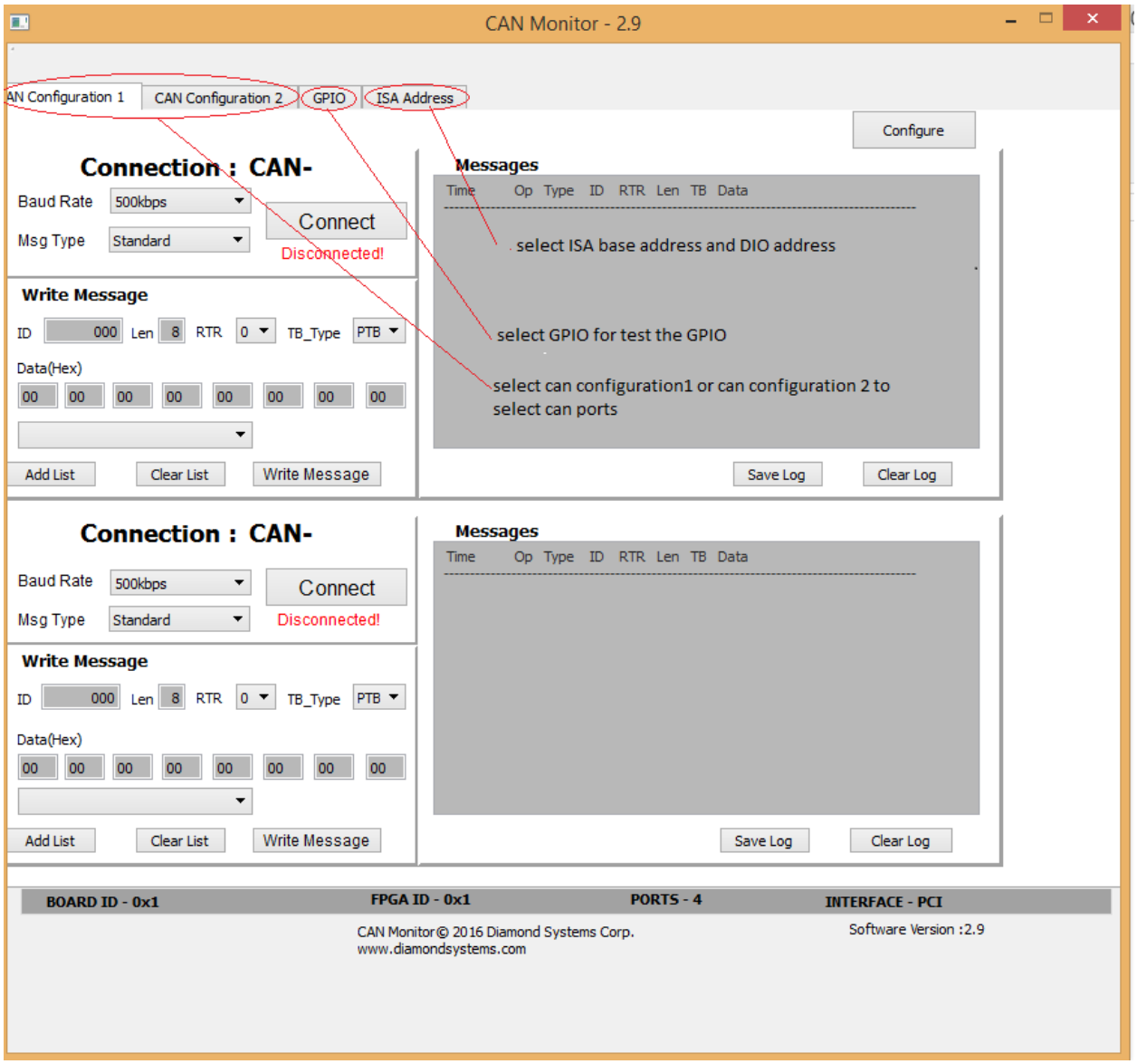
6. STARTING THE CAN MONITOR APPLICATION

- If you are using Ubuntu 14.04 32 bit then go to this link "https://ubuntu.pkgs.org/12.04/ubuntu-updates-main-i386/libicu48_4.8.1.1-3ubuntu0.6_i386.deb.html" and go download tab and download the "libicu48_4.8.1.1-3ubuntu0.6_i386.deb" package. For Ubuntu 12.04 this step is not required.
- Install the above package using command "sudo dpkg -i libicu48_4.8.1.1-3ubuntu0.6_i386.deb".
- Go to the "Monitor" directory (version_01.04.000 →Monitor).
- Give execute permission to JNMMCAN Monitor application using command "chmod 777 JNMMCAN-PCI_ISA-Linux".
- Run the JNMMCAN Monitor application using command "./JNMMCAN-PCI_ISA-Linux".

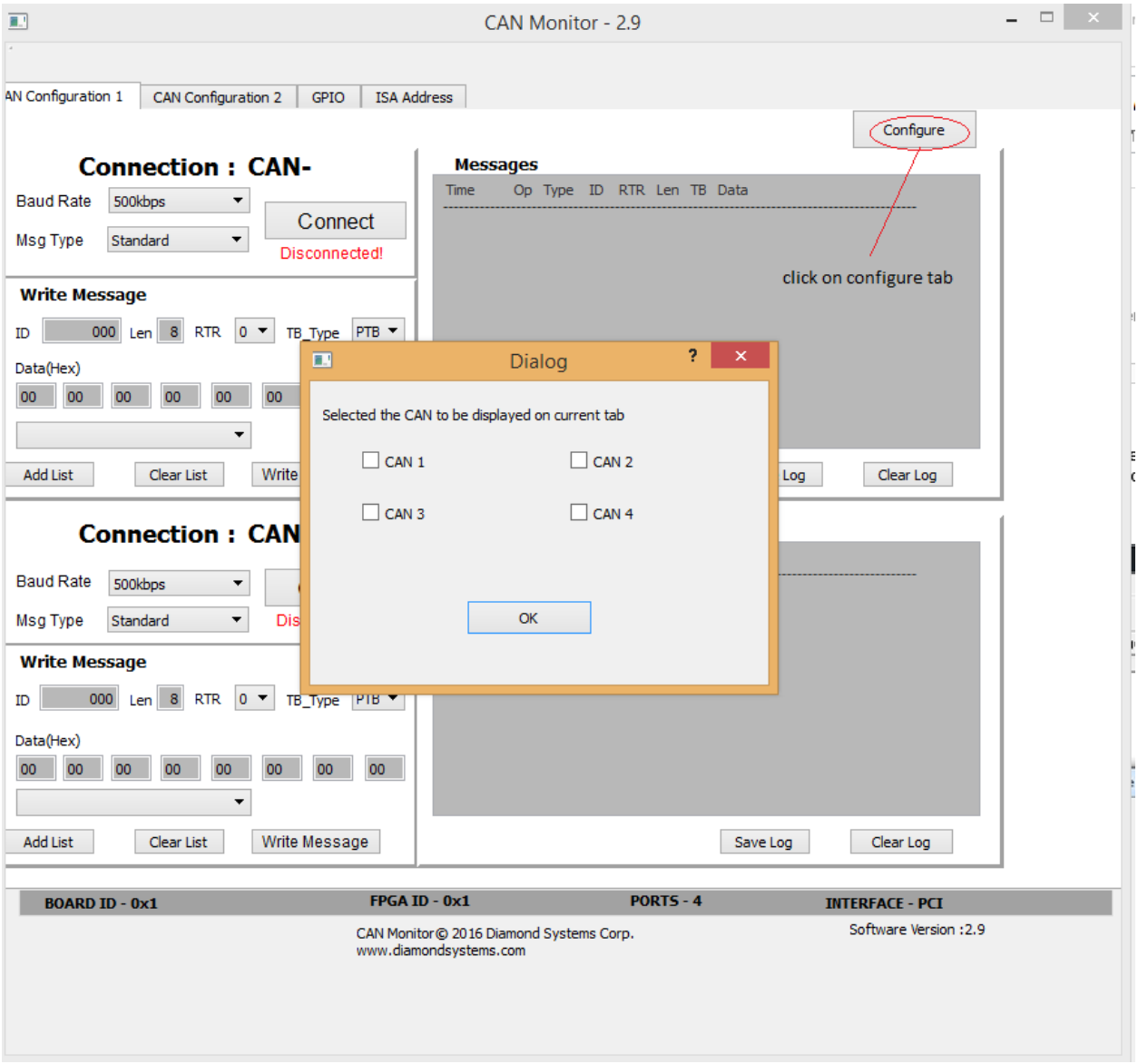


7. CONFIGURING CAN PORTS

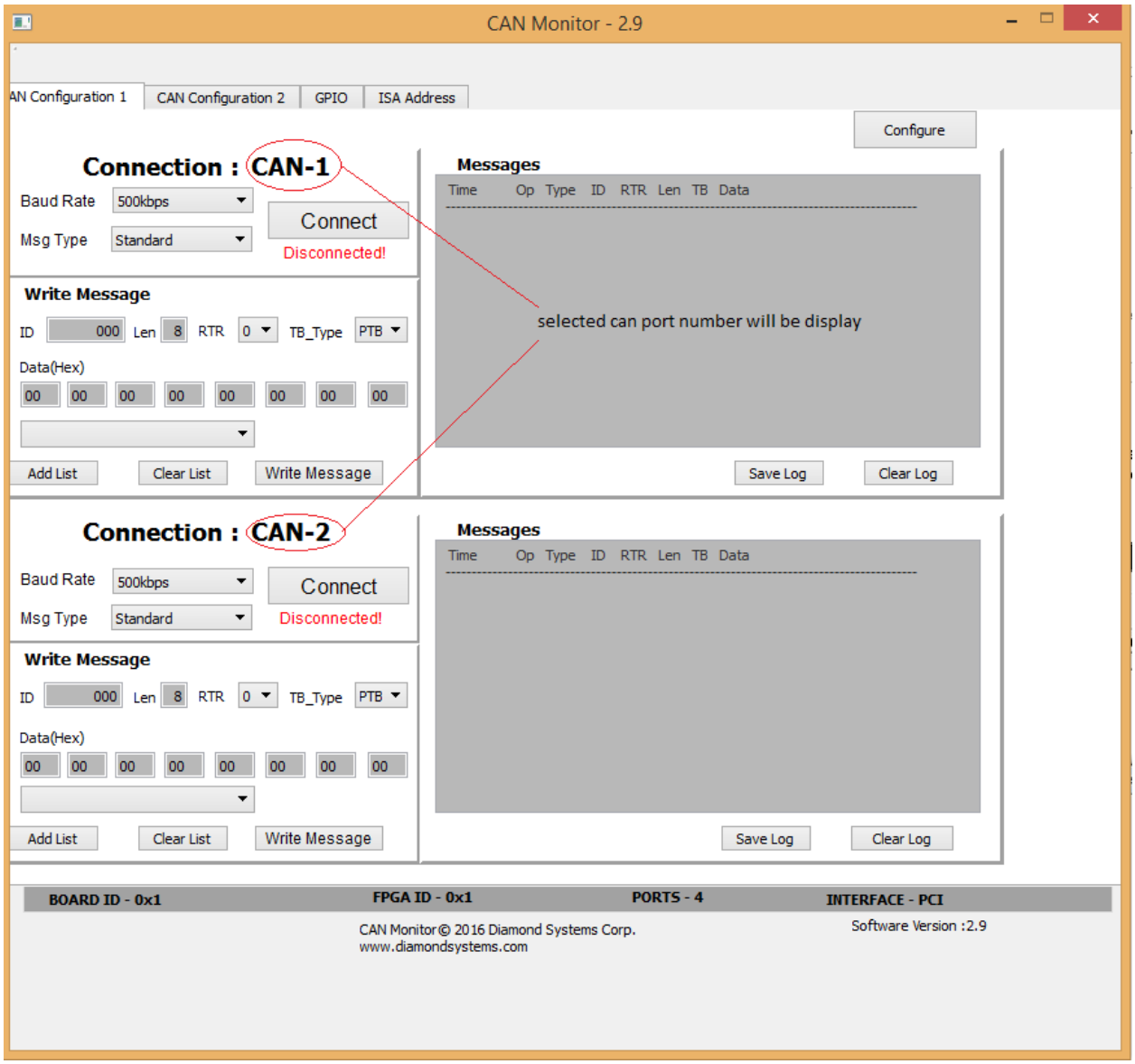
- The CAN Monitor application contains four tabs. Click on CAN Configuration 1 or 2 tab for CAN operation, or click on the GPIO tab to operate the GPIO lines, or click ISA address tab to select ISA base address and DIO address.



- Each CAN tab can support any two CAN ports. To select the ports for a tab, click on the **"Configure"** button in the upper right. A pop-up window appears allowing you to select the two ports for the current tab. Any one CAN port can only be configured on one tab.

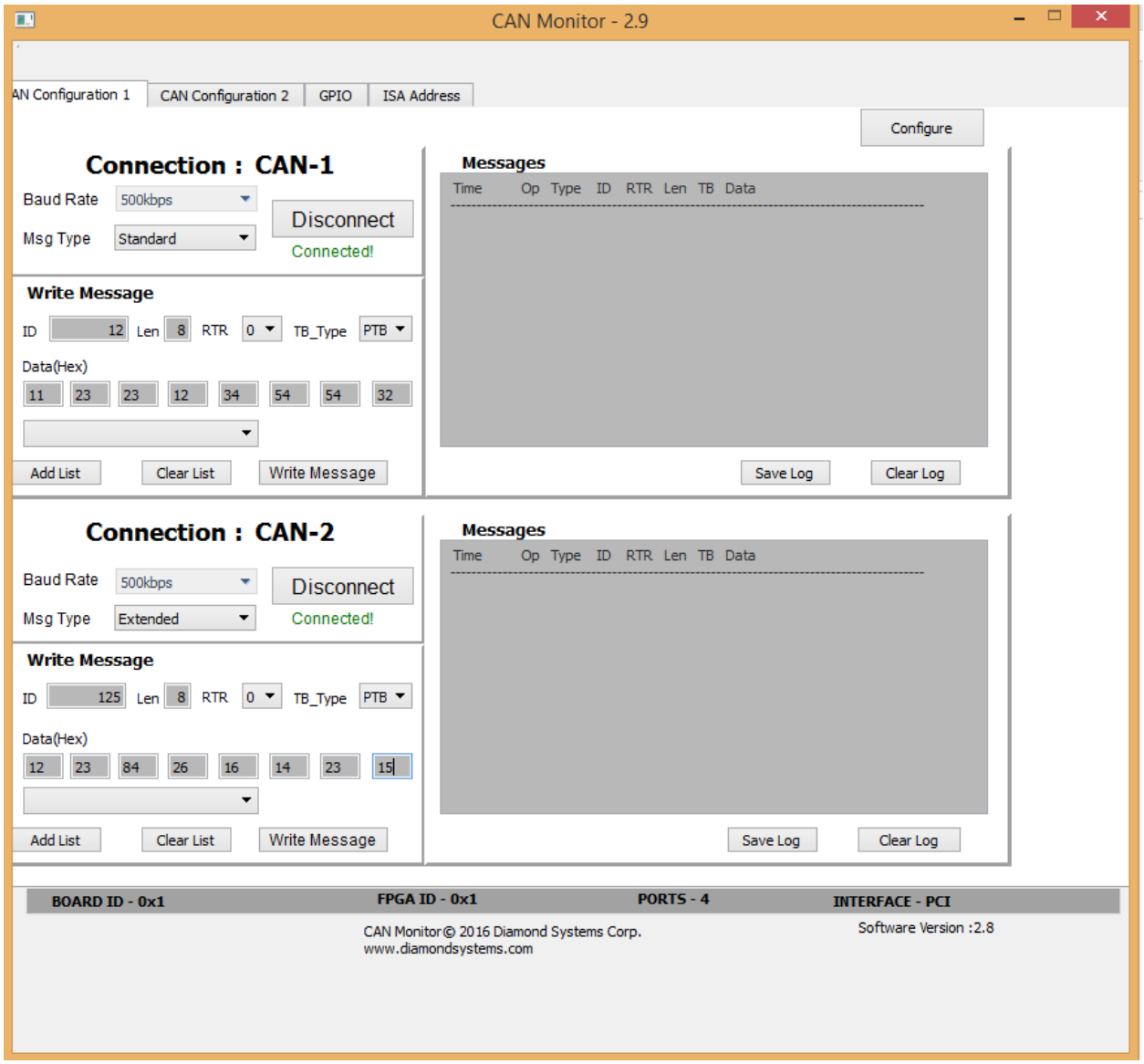


- Initially the CAN port numbers will be empty in each window on the tab. After configuring the CAN ports, the selected CAN port numbers will be displayed.



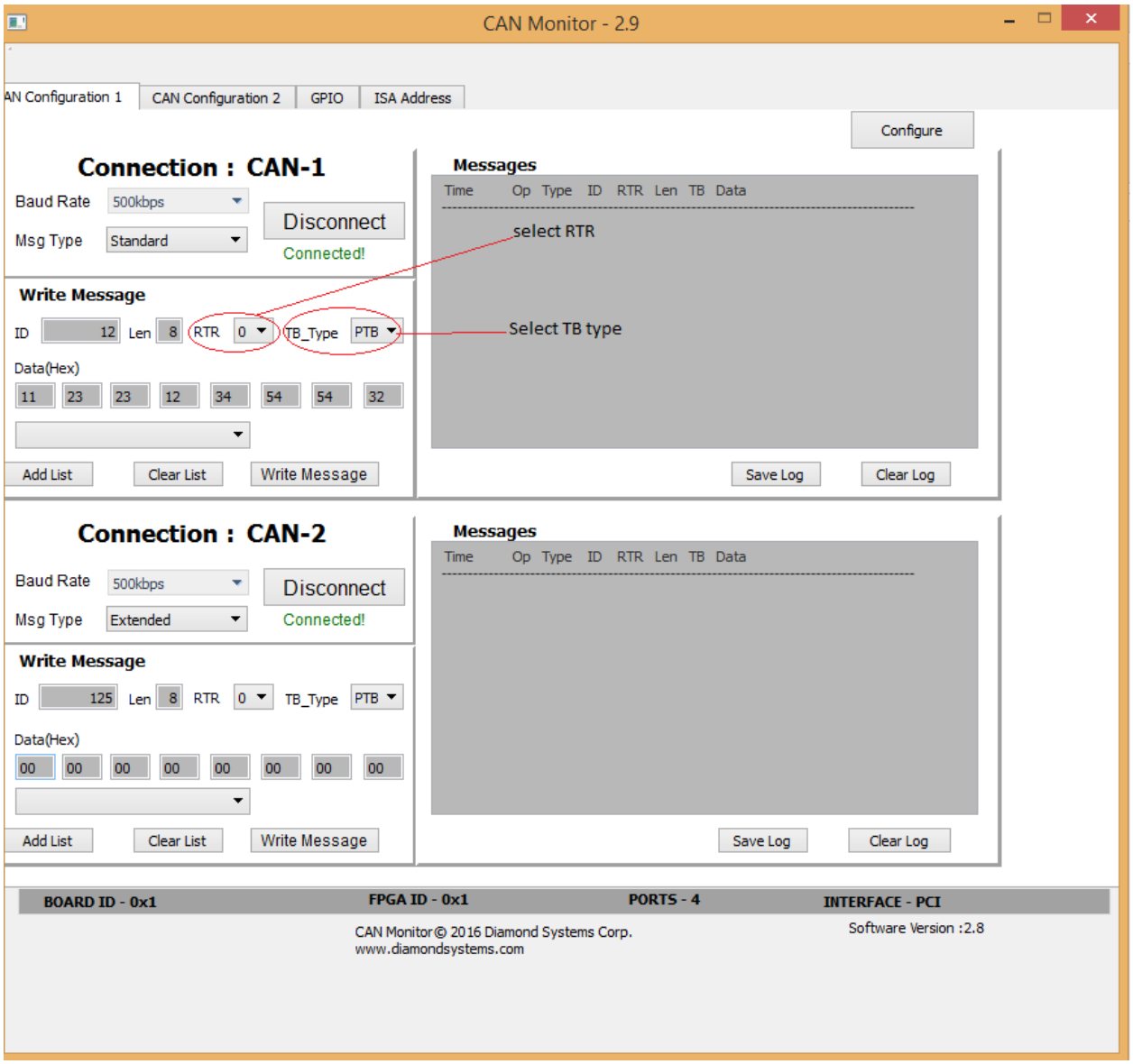
8. SETTING CAN BAUD RATE AND MESSAGE TYPE

- The baud rate for each port can be configured using the drop-down menu for the particular CAN port. In the same manner, the message type (standard or extended) can be configured. After selecting the desired settings, press the “Connect” button to configure the port. The Connect button will change to Disconnect, and the status message below will say Connected.



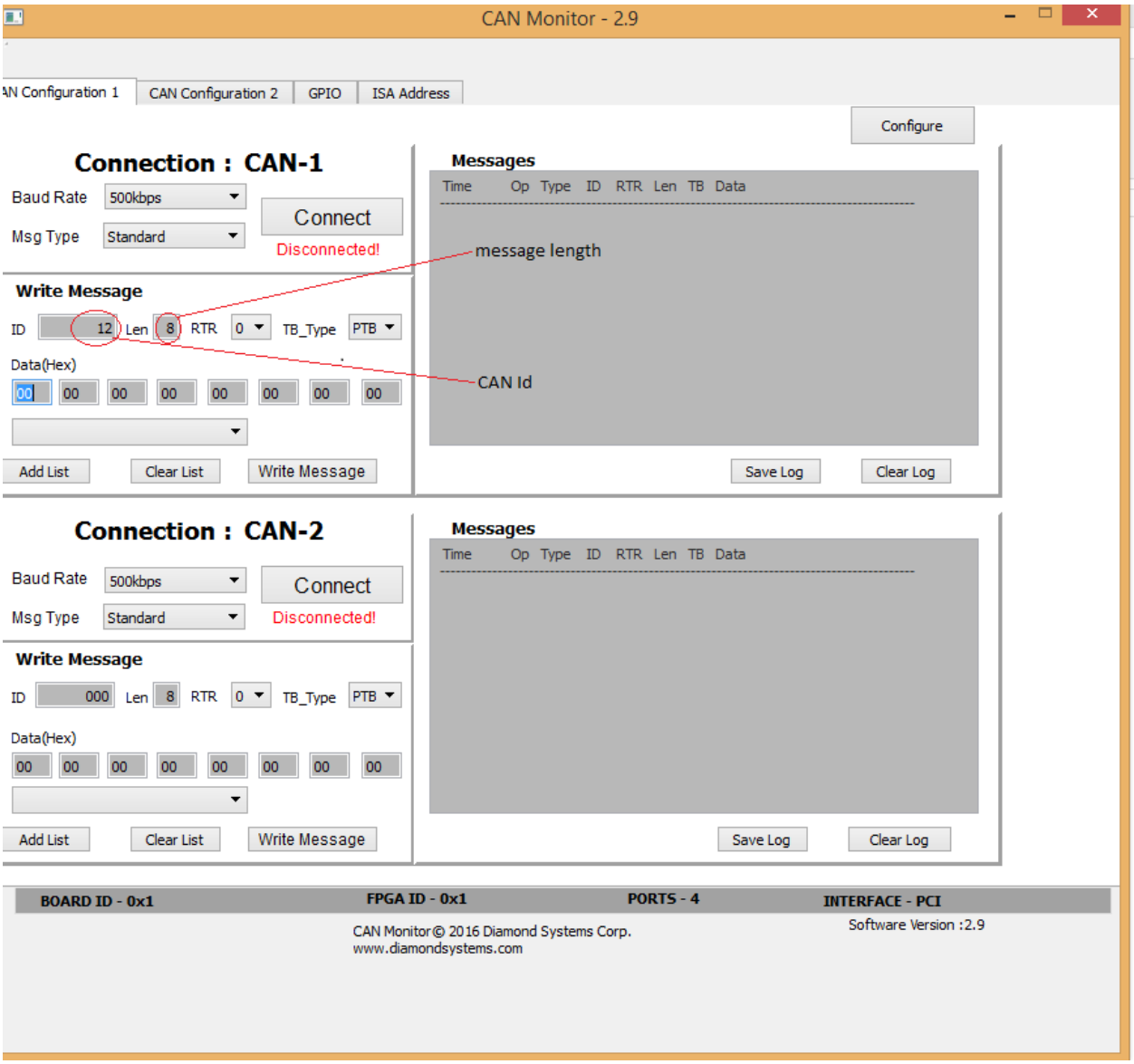
9. SETTING RTR AND TB TYPE

- Select RTR and TB type from combo box.



10. SETTING CAN ID AND MESSAGE LENGTH

- Enter the CAN ID and message length.

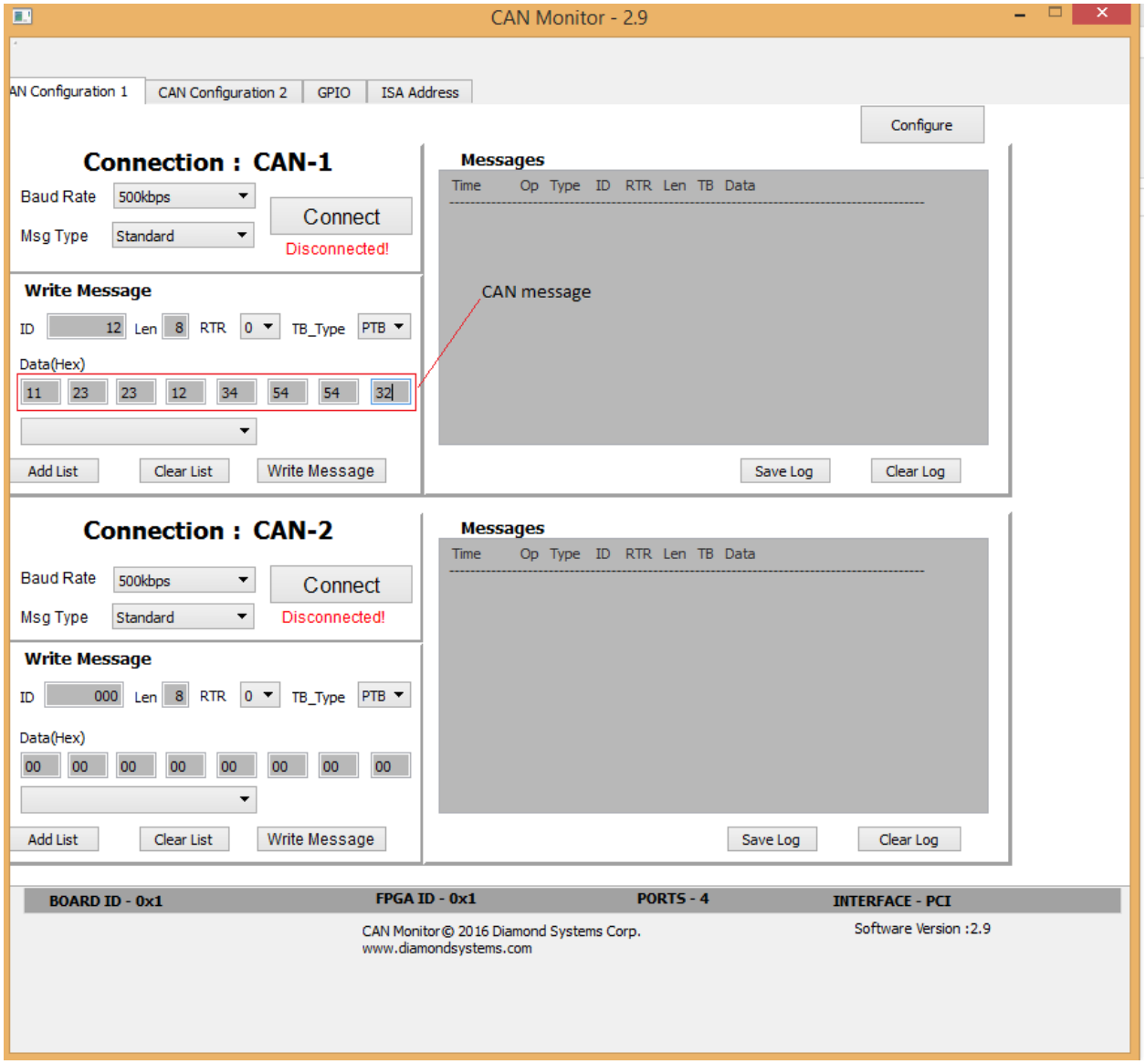


11. PREPARING CAN MESSAGE FOR TRANSMISSION

- To create a new message, enter the desired transmit data in hex values in the Data fields. Both upper and lower case alpha characters can be used. The number of bytes entered should match the selected length. In case more bytes are entered than the selected length, only the first (length) bytes entered will be transmitted. In case too few bytes are entered, the missing bytes will be filled with 00.

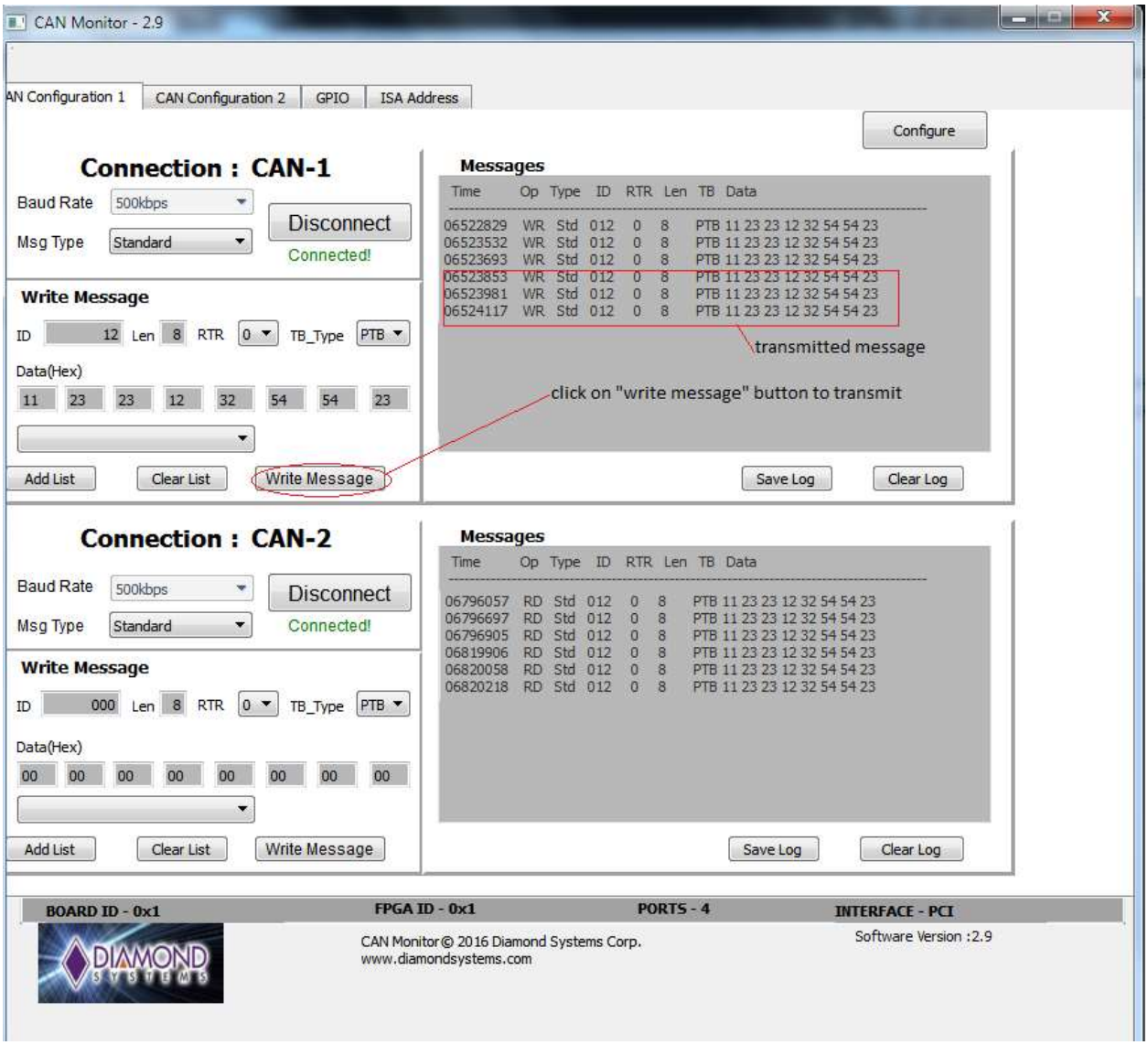
- A message can be added to the list for quick recall and reuse later. Click on the Add List button.

- To select a message from the list for retransmission, simply select it from the list. The data fields will be auto-populated with the selected message.



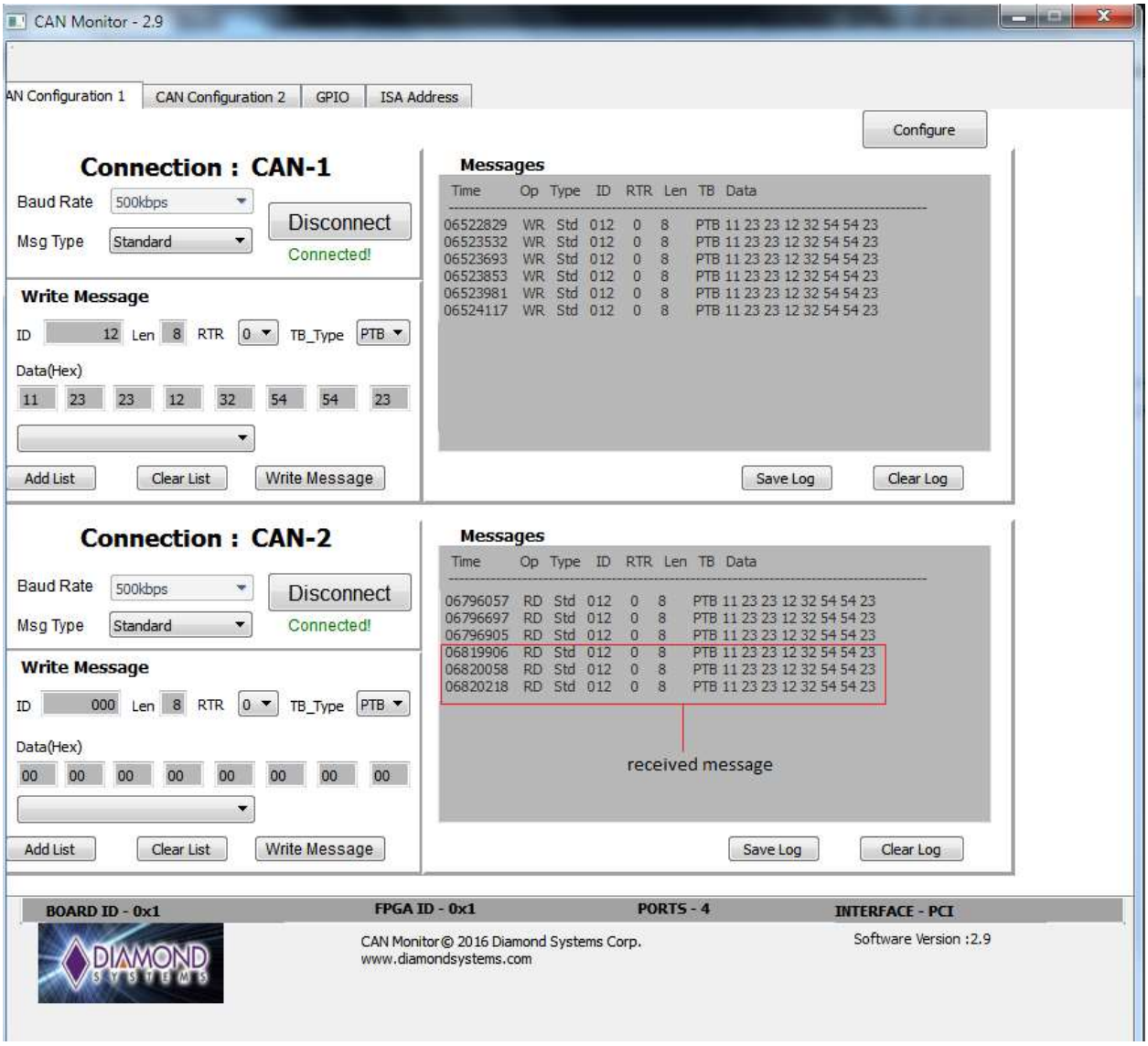
12. TRANSMITTING A CAN MESSAGE

- The configured CAN message data can be transmitted using the **"Write Message"** button. Transmitted messages will be displayed in the CAN message box for that particular CAN port. The same message can be transmitted multiple times by clicking on the write message button again.



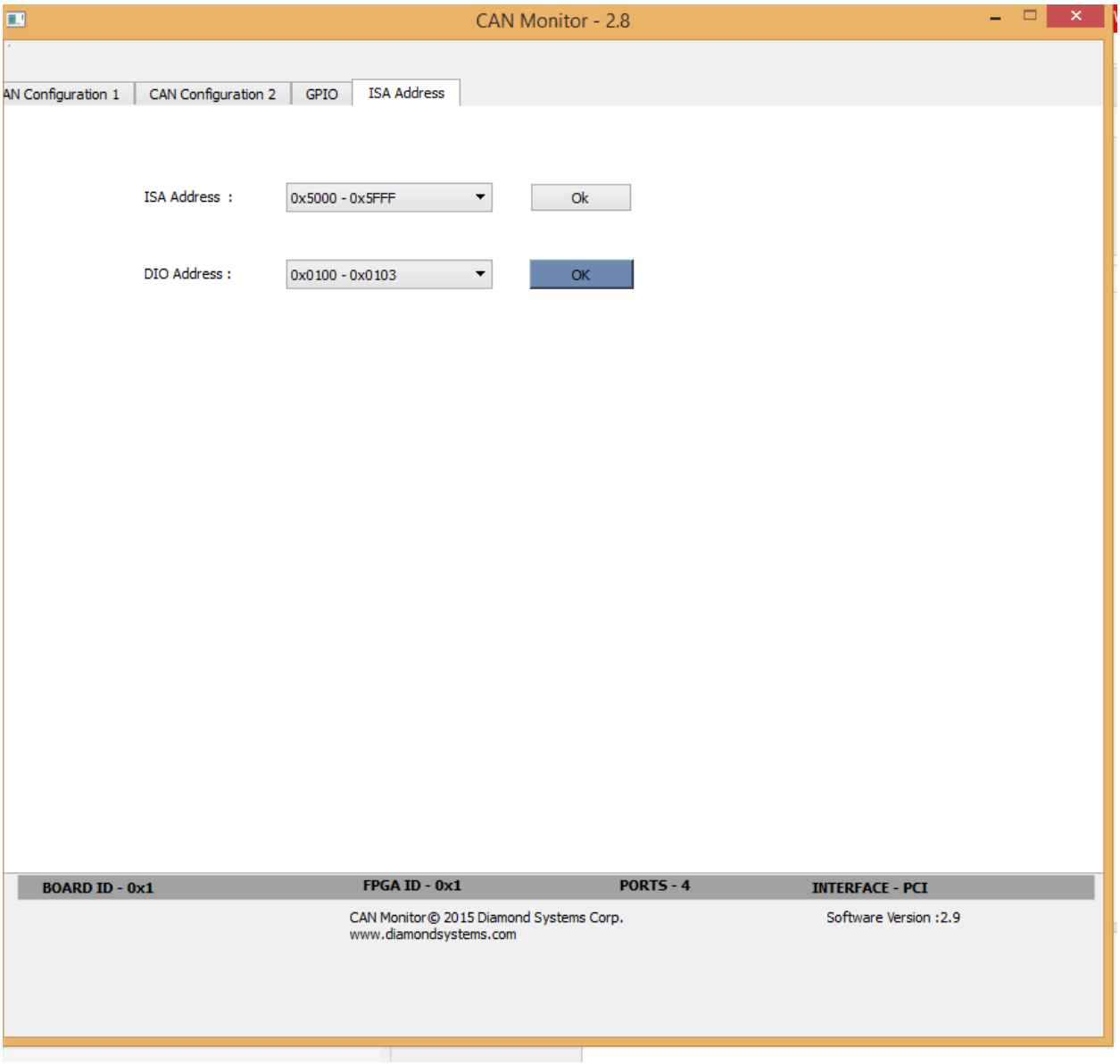
13. RECEIVING A CAN MESSAGE

- Received CAN message will be displayed automatically in the CAN message box for that particular CAN port. In the screen shot below, port 2 is connected to port 1, so the messages written on port 1 are being received and displayed for port 2.
- Make sure the receiving CAN port's baud rate is compatible with the transmitting port.

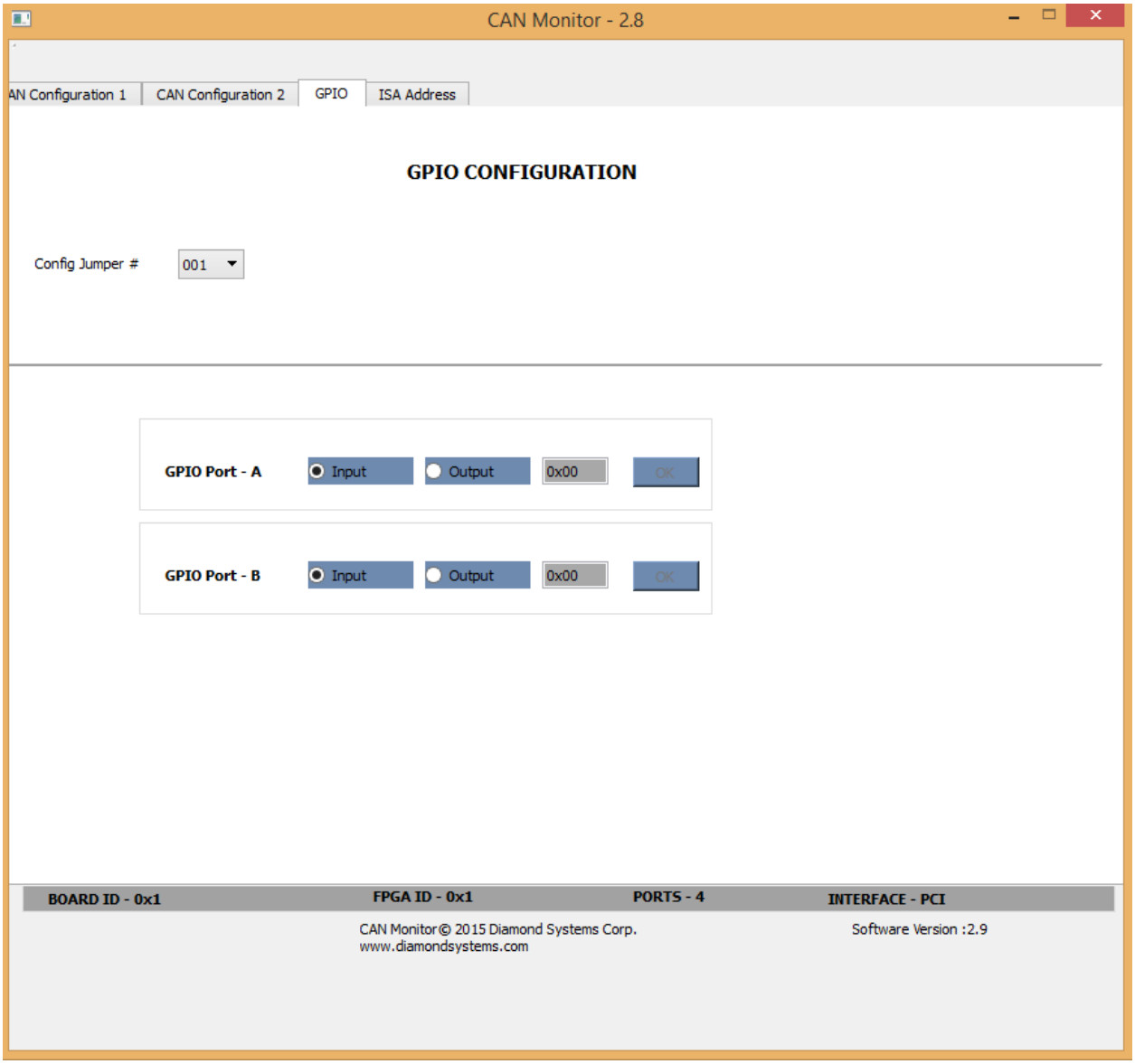


14. GPIO CONFIGURATION

- For ISA mode first select ISA address and DIO address.

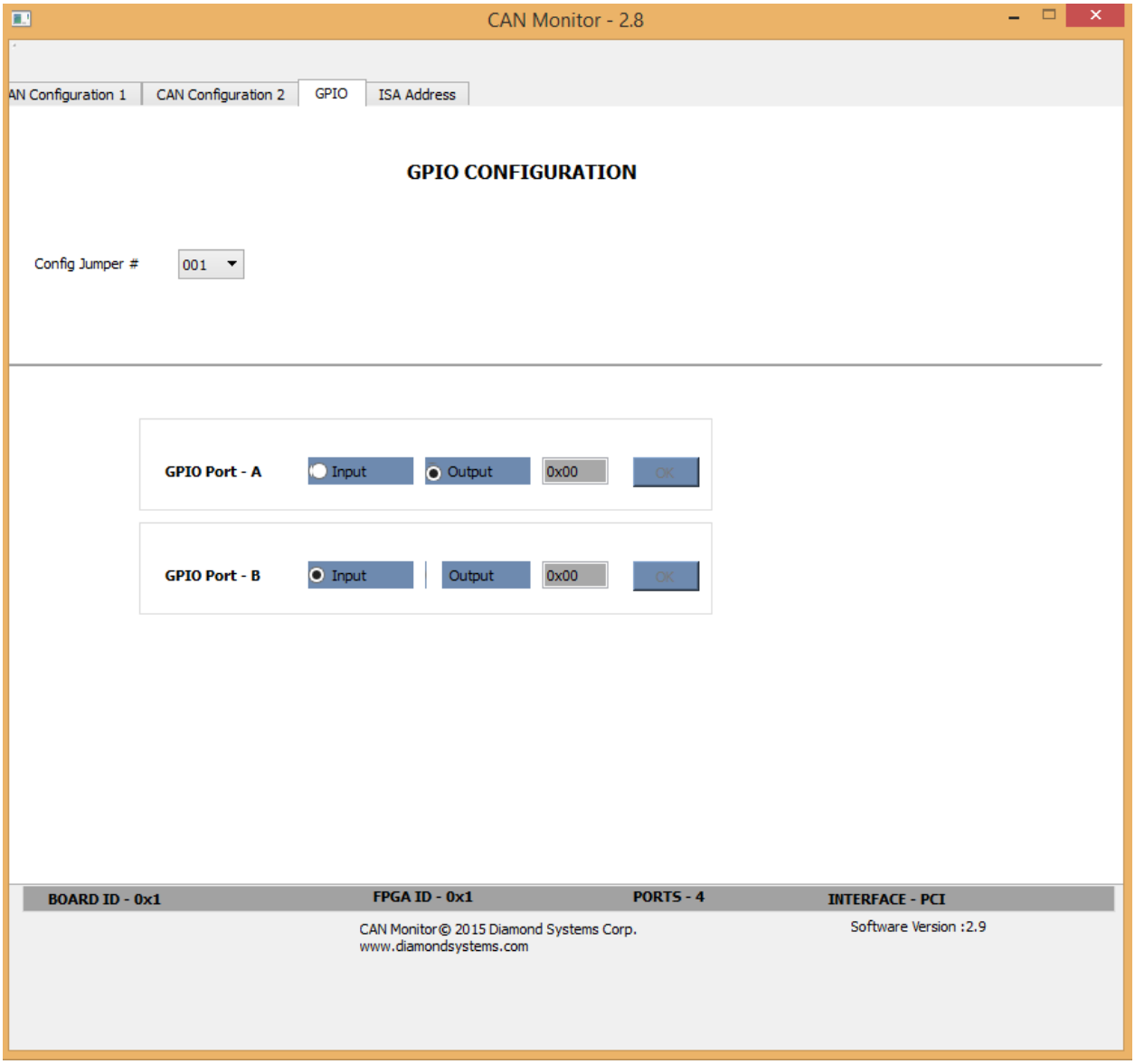


- Click on the GPIO tab to configure the two GPIO ports for input or output.



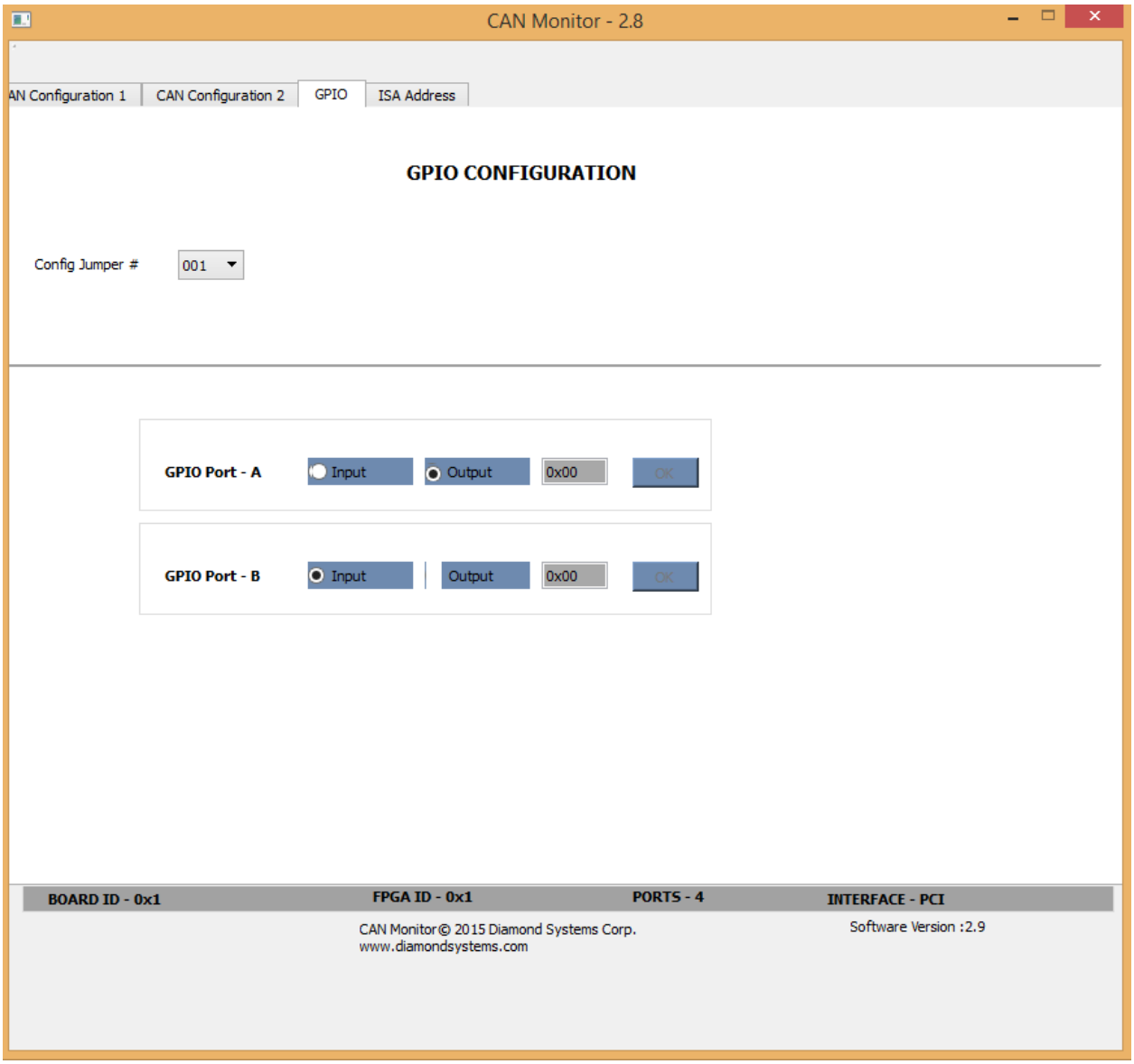
15. GPIO INPUT OPERATION

- Click on Input to configure a port for input mode. The input data will be displayed automatically. Data is refreshed approximately once per second.



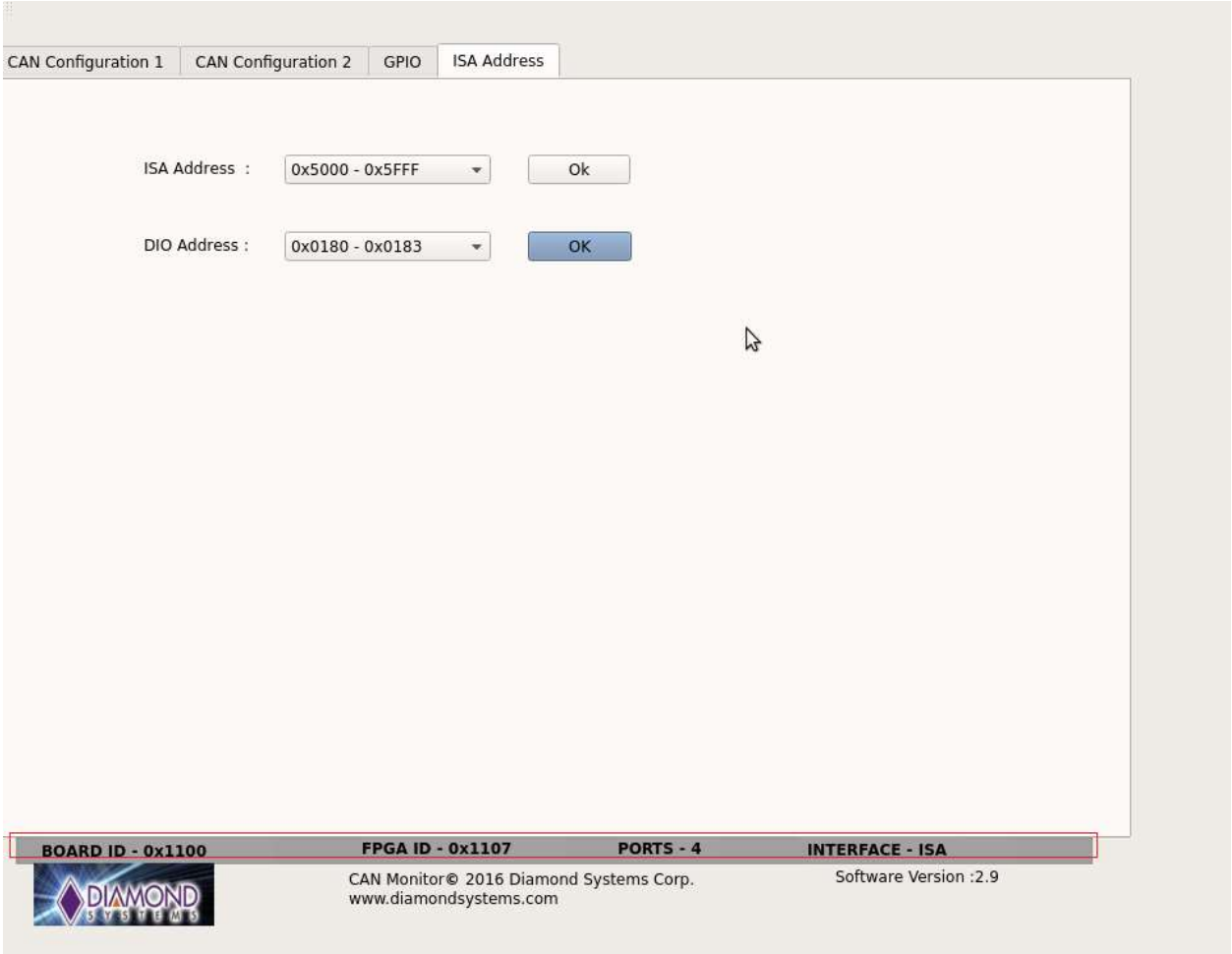
16. GPIO OUTPUT OPERATION

- Click on Output to configure a port for output mode. The data field becomes available for user entry. Enter the desired 8-bit output data in hex using the 0xnn format as shown below, then press OK to write the data to the port. The data is not output until the OK button is pressed.



- Similarly, Port-B can be configured as either Input or Output port.

17. STATUS BAR



- A status bar at the bottom of the screen displays information about the installed board and the program.

  FPGA ID: Displays the FPGA ID; each product family has a unique FPGA ID

  Board ID: Displays the board ID:

  0x1101: PCI model

  0x1100: ISA model, or PCI model operating in ISA mode

  Ports: Displays number of CAN ports present on the board, either 2 or 4

  Interface: Displays the active bus interface, either ISA or PCI.