CAN Test Tool
Quick Start

July 25, 2013

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Chapter 1

Introduction

The CAN test tool can help users to test the CAN communication of CAN series of ICP DAS by the simple steps. This tool supports most of all CAN products of ICP DAS. You can use these device to be an simple CANopen master, CANopen slave, DeviceNet master, DeviceNet slave, J1939 transmitter or J1939 receiver to test the DUT (device under test). It can easily and quickly test if the DUT works well or not. Only three simple steps, you can finish the test of these devices.
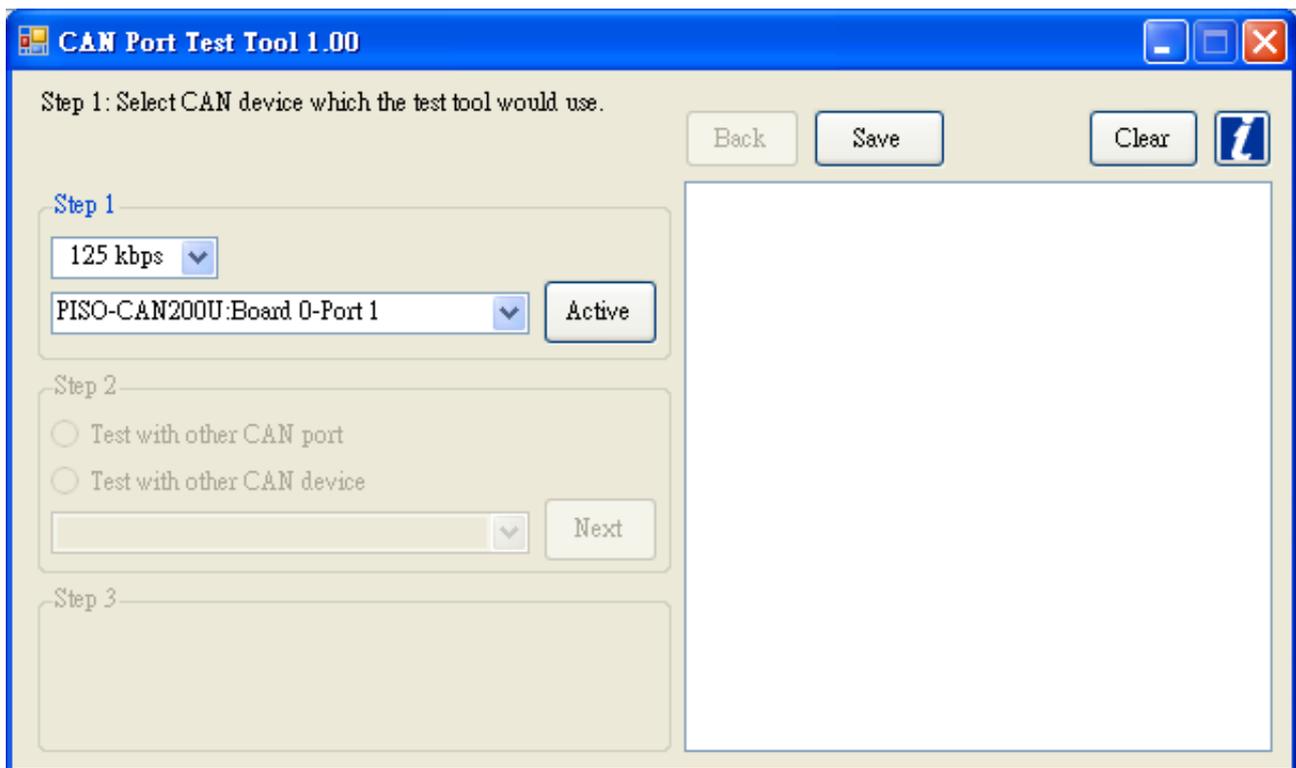

Figure 1.1: CAN Test Tool

"CAN Test Tool" supports several functions, such as two CAN port test to each other, test with other CAN device, test with CANopen Master, test with CANopen Slave, test with DeviceNet Master, test with DeviceNet Slave and test with J1939 device. There is brief introduction in every step. The test report can be saved to analyse if need. The following chapter will describe the above functions.

Chapter 2

Features

1. Auto scan all supported ICP DAS CAN device on your PC.

2. Three steps, easy to test.

3. Save test result to txt file.

4. Support Test Functions.

   - Two CAN port test to each other
   - Test with other CAN device
   - Test with CANopen Master
   - Test with CANopen Slave
   - Test with DeviceNet Master
   - Test with DeviceNet Slave
   - Test with J1939 Receiver
   - Test with J1939 Transmitter

5. Support CAN Hardware.

   - I-7530, I-7530A, I-7530-FT
   - I-7540D
   - I-7565, I-7565-H1, I-7565-H2
   - PCM-CAN100, PCM-CAN200, PCM-CAN200P
   - PEX-CAN200i
   - PISO-CAN100(U), PISO-CAN200(U), PISO-CAN400(U), PISO-CAN800(U)

Chapter 3

Test Function

3.1   Step 1

After the test tool is executed, it will search all the supported CAN devices of ICP DAS and list on the combo box. And then just as the brief description of the step 1 "Step 1: Select CAN device which the test tool would use.". Select the CAN port and CAN baud, and then click "Active" button to enable the CAN port.
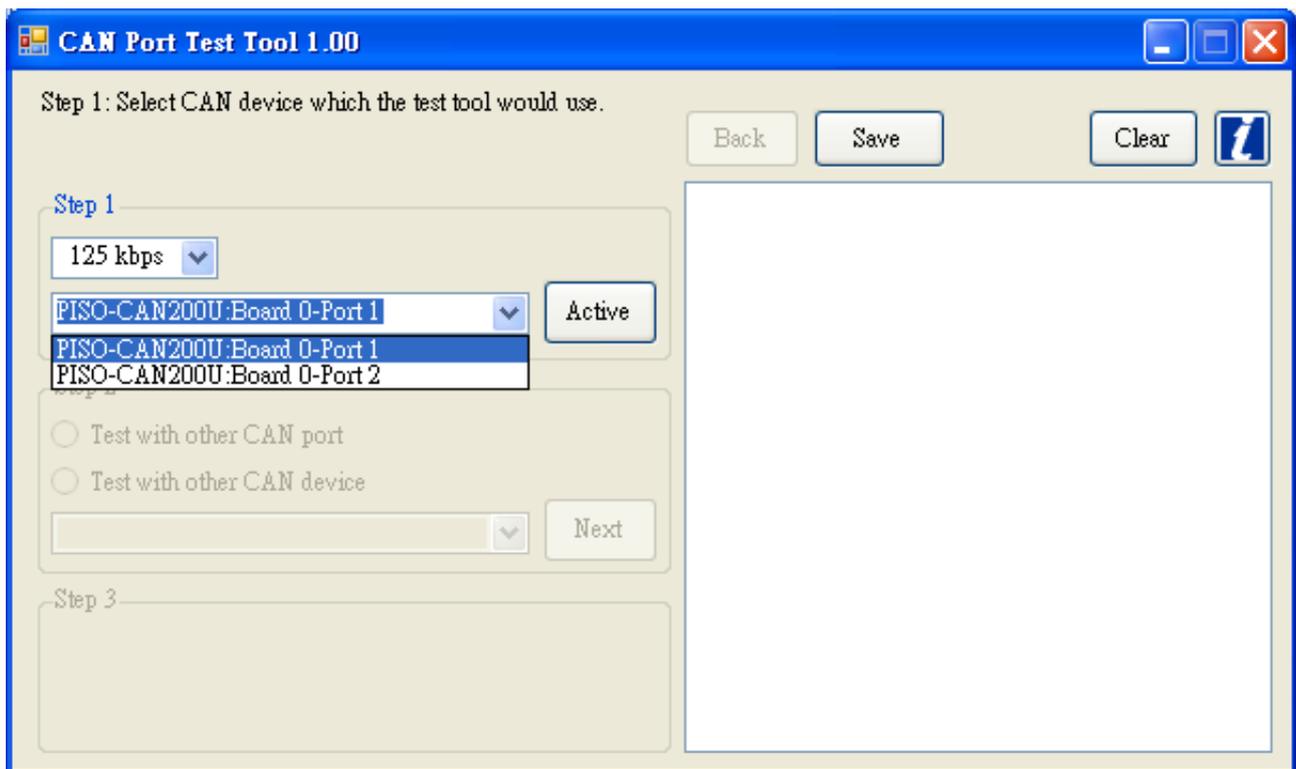

Figure 3.1: Select CAN Port

3.2 Step 2

In the step 2, there are two functions, "Test with other CAN port" and "Test with other CAN device".

Test with other CAN port "Test with other CAN port" means that the CAN port of step 2 is also an ICP DAS's CAN device on the same PC of step 1. And these two CAN ports will test to each other.
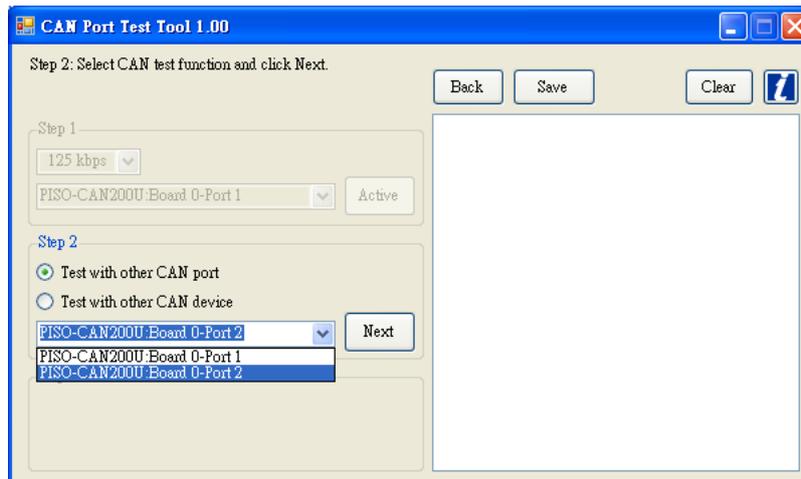
Figure 3.2: Function select - Test with other CAN port

Test with other CAN device "Test with other CAN device" means that the CAN port of step 2 is another CAN related device such as CAN, CANopen, DeviceNet and J1939. And the detail test description is as following.
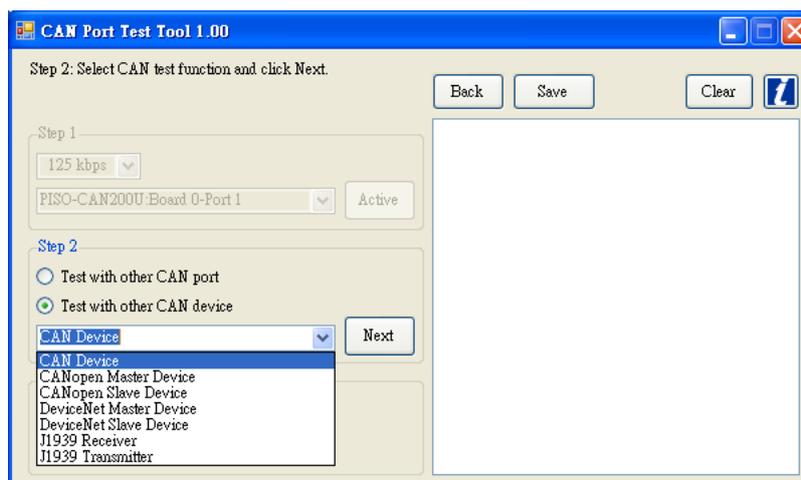
Figure 3.3: Function select - Test with other CAN device

3.3 Step 3

When users select the suitable test function, users can start to test the CAN device. Following will describe all the test function.

Note: before start the step 3, be sure to connect the two CAN ports.

3.3.1 Test with other CAN port

In the function, when user has decided the "Mode", "ID", "Len" and "Data" of the CAN message and clicked "Send" button. The CAN message will be sent from the step 1 CAN port to step 2 CAN port. If the step 2 CAN port has received the CAN message, the step 2 CAN port will send the same CAN message back to the step 1 CAN port.
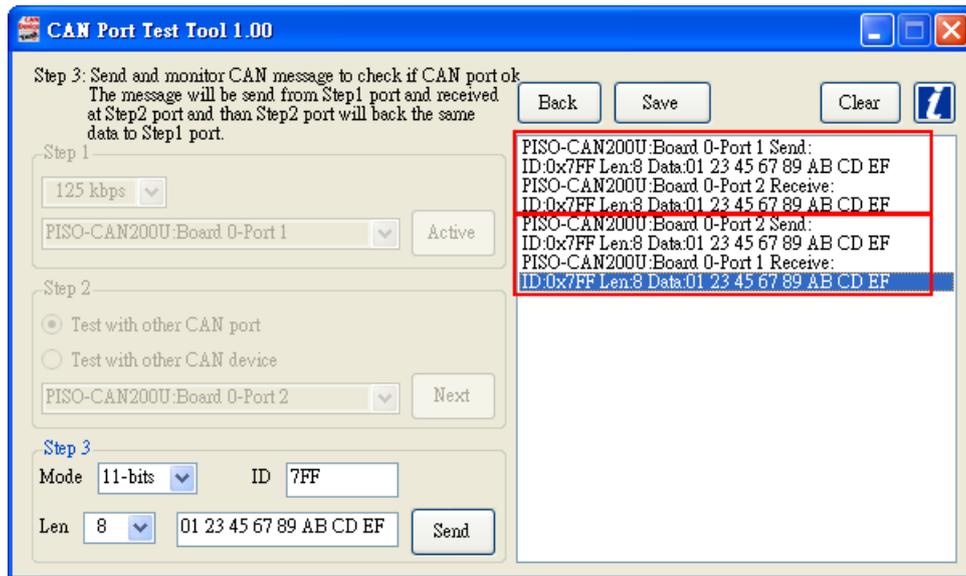

Figure 3.4: Test with other CAN Port

3.3.2 Test with other CAN device

CAN Device

Users can input ID, Len and data and click "Send" button to send a CAN message to other CAN device. Of course, the test tool also monitors all CAN message that received from the CAN port.
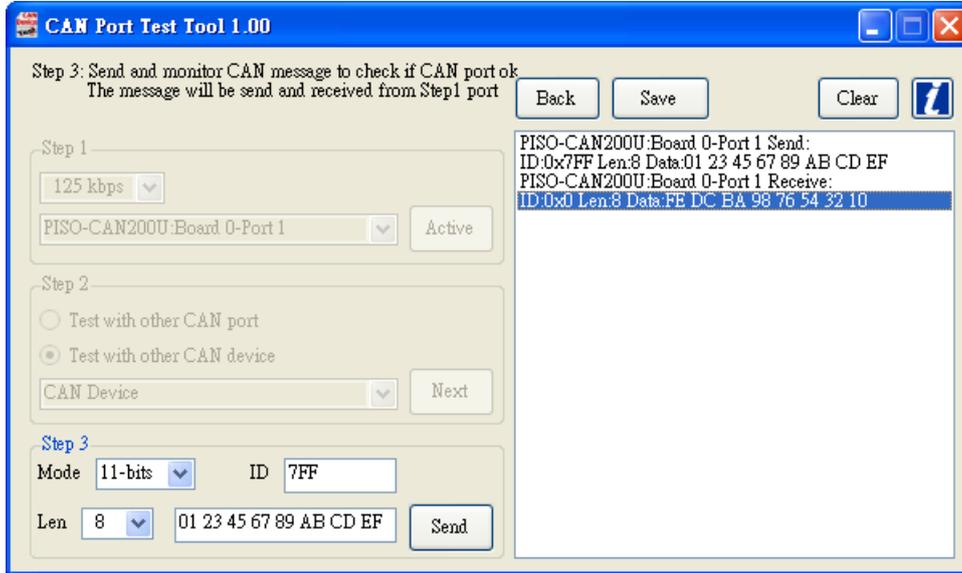

Figure 3.5: Test with other CAN Device

CANopen Master Device

After select node and enable, the tool will send a boot up message with the node id and start to monitor CANopen command of other CANopen Master. The tool supports simple NMT and SDO protocols. If CANopen Master sends other command such as PDO, the tool will not have any response for it.
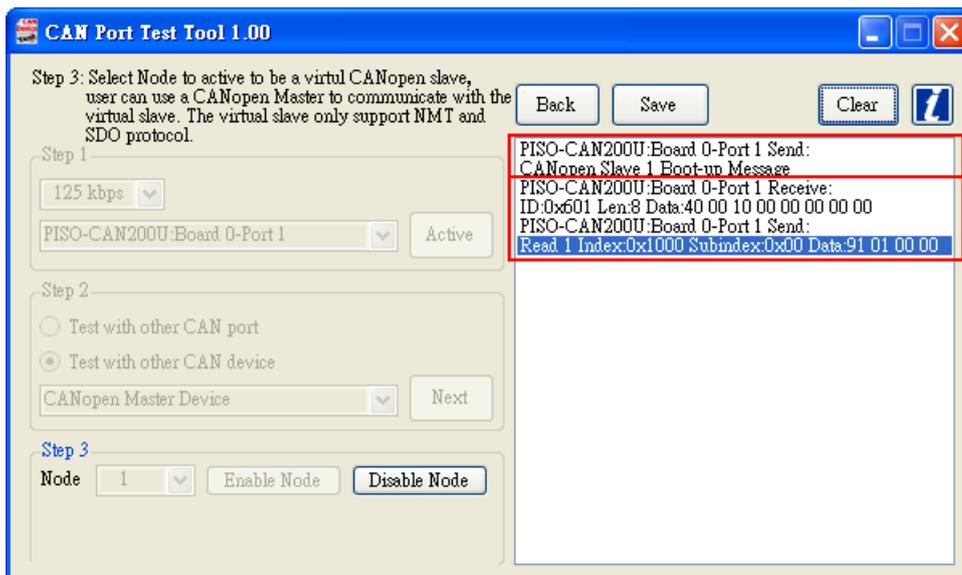

Figure 3.6: Test with CANopen Master Device

CANopen Slave Device

Users can send some NMT and SDO commands to other CANopen Slave and monitor Slave's responses. For example, select node 2 and click "Operational" button to send a NMT Operational Command to CANopen node 2. Or select node 3, input "Index-Subindex" with 0x100A-0x00 and click "SDO Read" button, it will send a SDO command to read address 0x100A-0x00 of node 3.
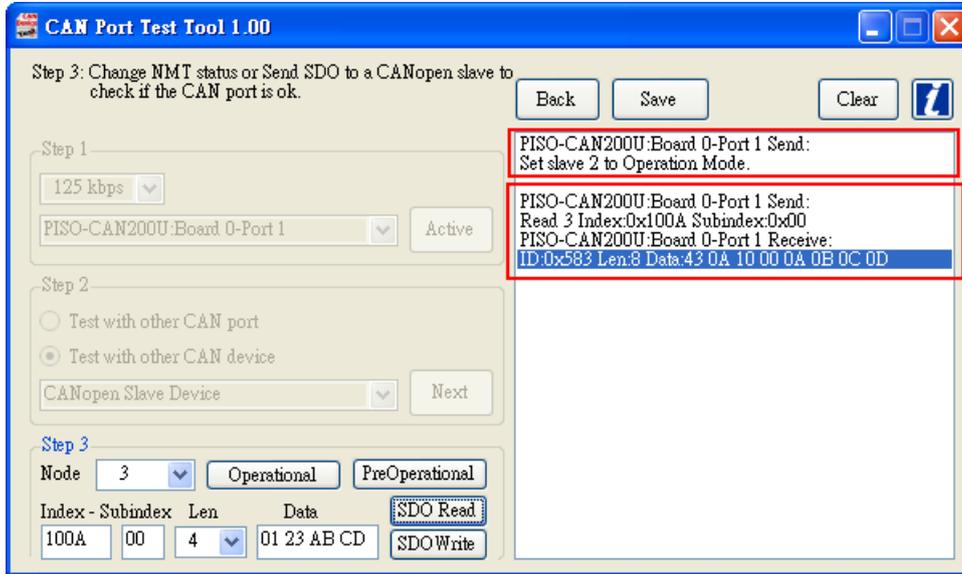

Figure 3.7: Test with CANopen Slave Device

DeviceNet Master Device

After select node and click "Connect" button, the tool will send boot up message twice and start to monitor DeviceNet command of other DeviceNet Master. The tool supports simple Pre-define connection and read vendor id data service.
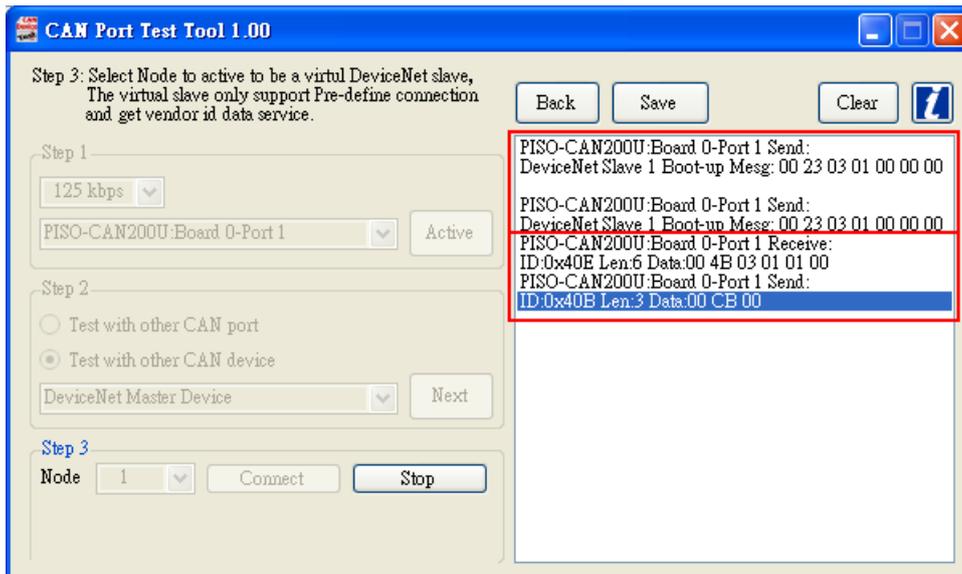

Figure 3.8: Test with DeviceNet Master Device

DeviceNet Slave Device

Select slave node and click "Connect" button, the tool will connect to a DeviceNet Slave with pre-define connection. Users can input Class ID, Instance ID and Attribute ID and press "Get Data" button. The tool will send a message to get the data of the DeviceNet Slave. Note that, if the timer of get data message is over than the timeout value of the DeviceNet Slave, the tool would need to re-connect to the slave.
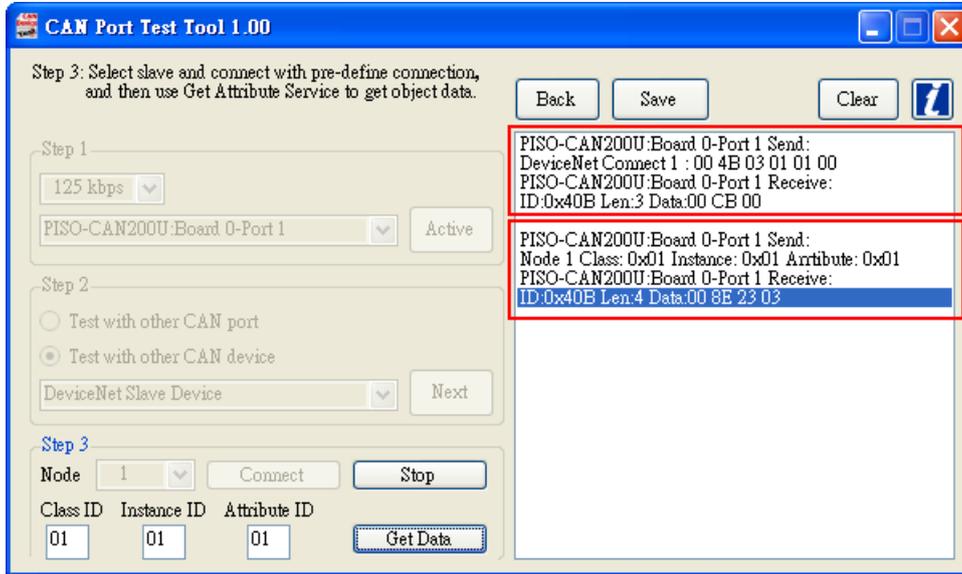

Figure 3.9: Test with DeviceNet Slave Device

J1939 Receiver

Set Node ID, PGN Code, Timer and Data, then click "Send" button to start to send specific J1939 message cyclically. If the CAN port is no problem, others J1939 device will receive the specific message.
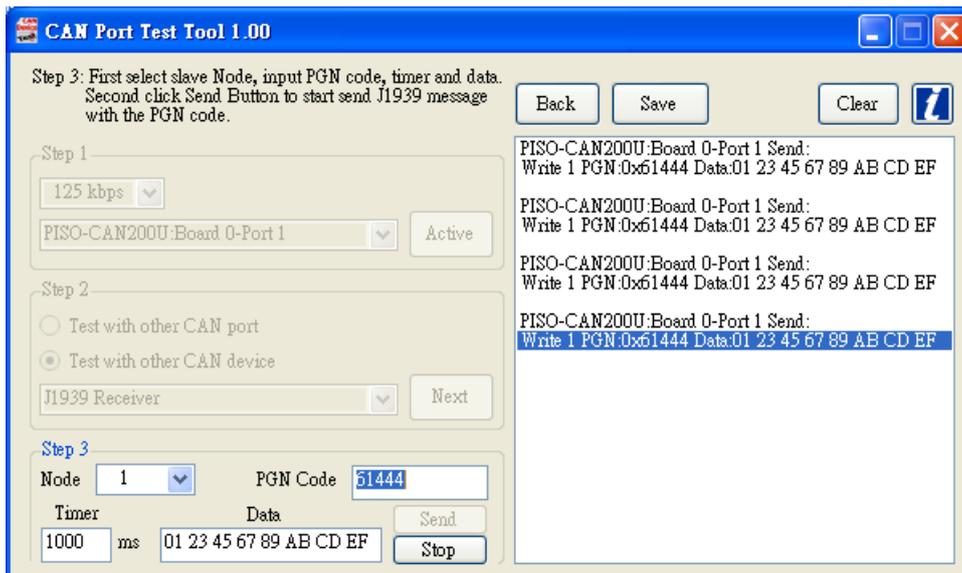

Figure 3.10: Test with J1939 Receiver

J1939 Transmitter

Set Node ID and PGN Code and then click "Update Filter" button. The tool will receive only the specific J1939 message. If users want to monitor another message, only need change the Node ID and PGN Code to suitable setting and click "Update Filter" button again.
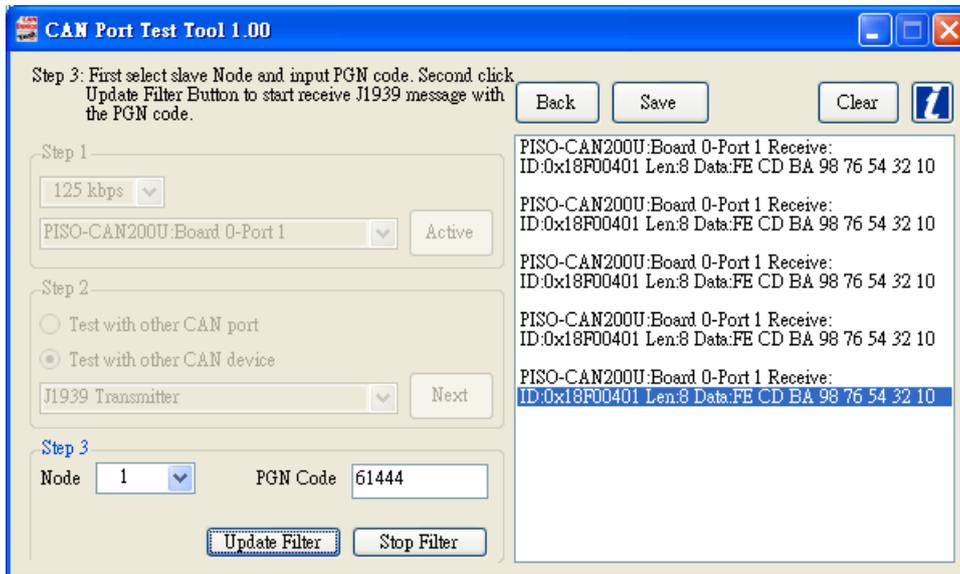

Figure 3.11: Test with J1939 Transmitter

Chapter 4

Others

Following are functions description of the others buttons.

Back

Click the button can back to previous step at any time.

Save

It can save the all messages of the message list to a text file.

Clear

The "Clear" button can clear the message list.

Driver Information

This button can show all the drivers information that are used by the test tool.

Figure 4.1: Drivers Information