FRONTLINE TEST SYSTEM™

CAN 2.0A

QUICK START GUIDE

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Table of Contents

1 INTRODUCTION ____ **1**

2 INSTALLING THE SST WOODHEAD DEVICENET CARD ____ **2**

2.1 SETUP INSTRUCTIONS FOR USING THE SST INTERFACE CARD FOR CAPTURING CAN DATA 3

2.1.1 CAN I/O Settings ____ **3**

2.1.2 CAN Capture Filters ____ **5**

3 TECHNICAL SUPPORT ____ **8**

Table of Figures

Figure 1 - Interface Setup 2

Figure 2 DeviceNet Commissioning Tool 3

Figure 3 - CAN I/O Settings Device Setup 4

Figure 4 - Capture Filters 5

Figure 5 - Caputured/Excluded IDs 6

Figure 6 - Add CAN IDs 6

Figure 7 - Add CAN IDs 7

1 Introduction

Welcome to the Frontline Test System (FTS) CAN 2.0A Quick Start Guide. This guide contains hardware and software setup information for using the NetDecoder™ software application to analyze CAN 2.0A data.

This guide contains the following setup instructions:

- Installing the SST Woodhead DeviceNet Card
- Setting up the SST Interface Card for capturing CAN data

2 Installing the SST Woodhead DeviceNet Card

Note: Install the DeviceNet card driver by following the SST Woodhead installation instructions.

The installation software on the CD is for Windows NT 4.0 with SP4, XP Pro, 2000 Pro, 2000 Server and Server 2003. We have also successfully installed the cards under XP Home Edition. If you need drivers for other operating systems, they can be downloaded from the SST Woodhead web site at http://www.woodhead.com.

1. Insert the SST DeviceNet software CD first, before inserting the card. The CD should auto run and display the main menu. If it does not, browse the CD and double-click on setup.exe.
2. Select Product Menu from the main menu.
3. Select your card type from the Product Menu screen.
4. Choose DeviceNet DNP Products Install 2.0 for NT/XP/2000/Server from the top drop-down list and click Next. Follow the installation instructions.
5. If you do not have an operational network: Go to Start | Programs | SST | DeviceNet DNP and select the DeviceNet Analyzer program.

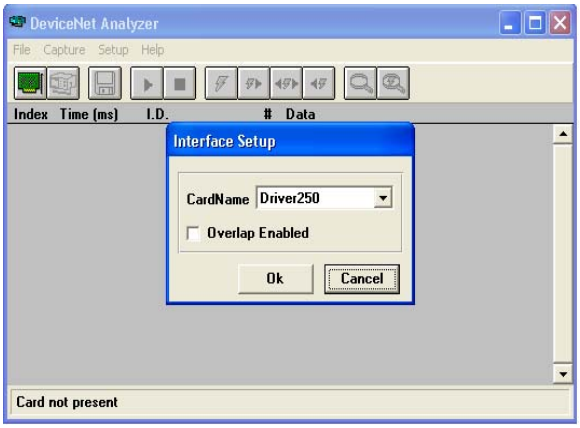

Figure 1 - Interface Setup

Select the appropriate card name from the drop list. Once selected, you will notice that the health LED on the dongle will turn green and the comm. LED will reflect the communications status of the DeviceNet Network.

If you have an operational network: Go to Start | Programs | SST | DeviceNet DNP and select the DeviceNet Commissioning Tool. Select the appropriate module from the Access Point drop list. If the module is functioning, the software will allow you to browse the network for devices. Notice that the bottom of the window will state the status of the card and network.

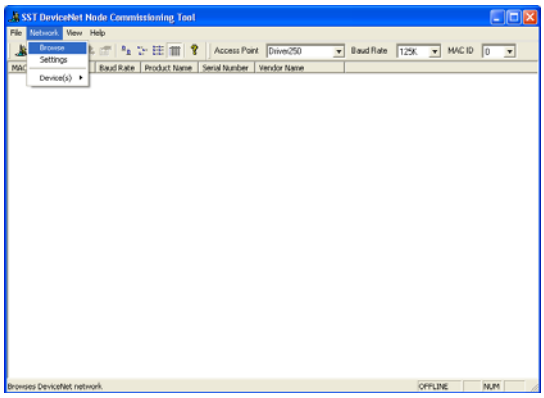

Figure 2 DeviceNet Commissioning Tool

SST's DeviceNet interface cards can be used to capture DeviceNet data as well as other CAN-based, non-DeviceNet network protocols.

2.1 Setup Instructions for using the SST Interface Card for capturing CAN data

The CAN Setup instructions for the SST interface cards consists of the following:

- CAN Device Setup
- CAN Capture Filters

2.1.1 CAN I/O Settings

2.1.1.1.1 DEVICE SETUP

You must setup the CAN interface card before NetDecoder can use it. This is done from the I/O Settings window. To setup the CAN interface card:

1. Start NetDecoder. Choose NetDecoder from Start |Programs | Frontline NetDecoder [version#] | Frontline NetDecoder. Then from the *Choose Protocol to Analyze* dialog, expand the *Control Area Network folder*, select the CAN 2.0 icon, and click the Run button. Then choose "*I/O Settings*" from the *Options* menu on the Control window.

2. There are two tabs: *Device Setup* and *Capture Filter*. Choose *Device Setup.*

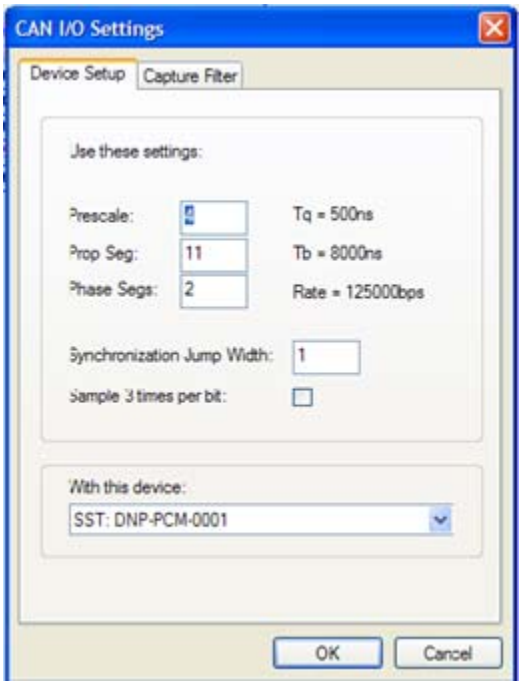

Figure 3 - CAN I/O Settings Device Setup

Prescale

This value is multiplied by the *minimum time quantum* of 125ns to produce the *time quantum*.

Prop Seg

This value is multiplied by the *time quantum* to produce the *propagation time segment*, which compensates for physical network delays.

Phase Segs

This value is multiplied by the time quantum to produce *phase buffer segment 1* and *phase buffer segment 2*, which may be lengthened or shortened to compensate for phase errors.

The *nominal bit time* is the sum of the *synchronization segment* (one time quantum), propagation time segment, and phase buffer segments. The *nominal bit rate* is the inverse of the nominal bit time.

Synchronization Jump Width

Each bit is sampled at the end of phase buffer segment 1. The synchronization jump width is the number of time quanta by which phase buffer segment 1 is lengthened, or phase buffer segment 2 shortened, to resynchronize upon detection of a phase error.

Sample 3 times per bit

This enables two additional samples to be taken, one ahead of the normal sample point and one behind it, to eliminate detection of false bit values on noisy networks.

Device List

Select a capture device from the list of available devices found on your machine. If you are using an SST capture device, be sure to have the *SST DeviceNet 32-bit Software* installed; in addition to the device's basic drivers (see Section 2.1).

2.1.2 CAN Capture Filters

You can define the Capture Filters on the I/O Settings Window.

1. Start NetDecoder and select CAN 2.0 from the Choose Protocol to Analyze dialog.
2. Then choose I/O Settings from the Options menu on the Control window.

There are two tabs: Device Setup and Capture Filter.

3. Choose Capture Filter.

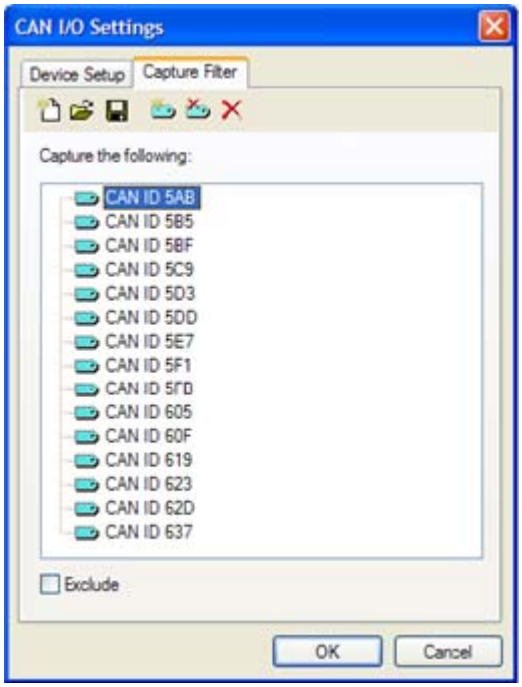

Figure 4 - Capture Filters

Creating a Filter

The Filter Panel displays the CAN IDs that are captured (or excluded) by the current filter.

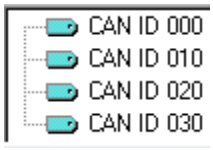

Figure 5 - Caputured/Excluded IDs

1. To create a filter, click the Add CAN ID button and add the CAN IDs you wish to filter on in the dialog box.

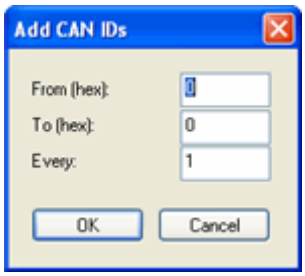

Figure 6 - Add CAN IDs

2. Select OK
3. Click the Exclude check box to cause all CAN IDs, except those listed in the filter panel to be captured.
4. Click on the Save button and enter a file name if you want to save the filter.
5. Click OK.

The filter is active when data capture is started.

Add/Remove CAN IDs Dialog

The Add/Remove CAN IDs dialog appears when you click the Add or Remove CAN ID buttons on the toolbar of the Capture Filter tab. This dialog is used to add (or remove) CAN IDs to/from a CAN Capture Filter.

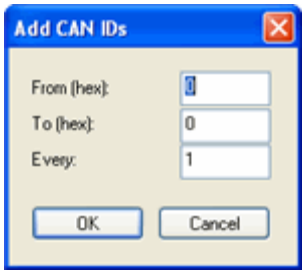

Figure 7 - Add CAN IDs

From - A range of CAN IDs is specified starting at the From field. This value is edited in hexadecimal.

To - A range of CAN IDs is specified up to and including the To field. This value is edited in hexadecimal.

Every - The range specified includes only 'Every' n CAN IDs. This value is edited in decimal.

3 Technical Support

Technical support is available in several ways. The online help system provides answers to many user related questions. Frontline's website has documentation on common problems, as well as software upgrades and utilities to use with our products.

Web: http://www.fte.com, click Support

Email: tech_support@fte.com

Also see the User Forum at http://fte.com/forum

If you need to talk to a technical support representative, support is available between 9am and 5pm, U.S. Eastern time, Monday through Friday. Technical support is not available on U.S. national holidays.

Phone: +1 (434) 984-4500

Fax: +1 (434) 984-4505

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