CHAPTER 4

DataMonitor Utility

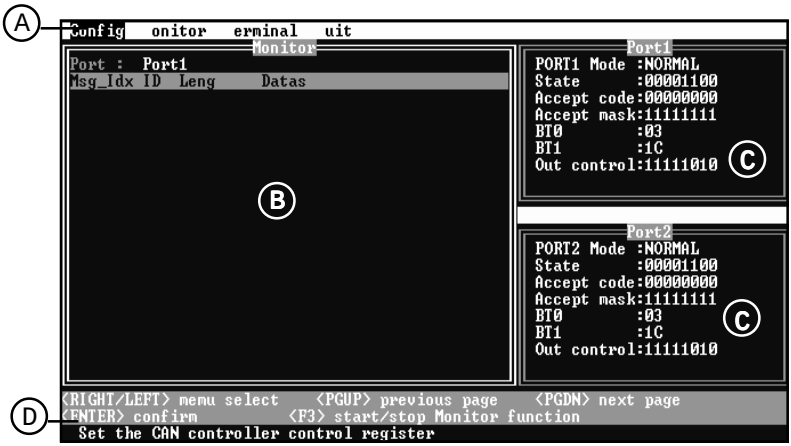
Software overview

The PCL-841 comes with a utility disk with the following software capabilities:

- CAN controller configuration
- CAN transmission monitoring
- Terminal emulation

Main Menu

Run DataMonitor at the DOS prompt. DataMonitor's main menu screen will appear as shown below:



The main screen consists of:

A. **Menu bar:** Lists the available functions. From the main menu you can select Configuration, Monitoring, and Terminal.

B. **Monitor screen:** Shows monitored data, including message index, CAN device ID, data length, and data.

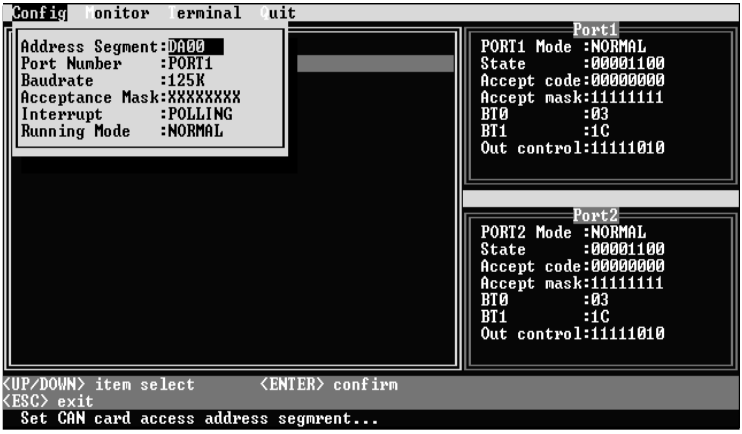
C. **Status fields:** Display the status of the two ports and the status register of the CAN controllers.

D. **On-line help/message bar:** Shows various key commands and states the function of the currently highlighted item.

Configuration

Before you transmit a CAN object, you must configure the CAN controller by selecting the <Config> menu with the cursor keys and pressing <Enter>. The Configuration function determines the ports to be used and their communication parameters.

The port configuration window is shown below.



The parameters below need to be configured for each CAN controller:

Address segment: The base address (address segment) of the PCL-841 is normally adjusted during the installation process. The selection of the address segment needs to be the same as that of the hardware configuration.

Port: Select the port you want to configure.

Baud rate: The baud rate must be coordinated with the CAN network. Choose the appropriate one from the list of baud rates.

Acceptance code: Specifies the value of the 8 most significant bits of the identifier (ID10 ... ID3)

Acceptance mask: Specifies the bit positions which are "relevant" for acceptance filtering.

Note: The acceptance code and acceptance mask are configured through eight digits (1 digit per bit) using 0 or 1.

Value	Definition
0	This bit position will accept only a "relevant" message.
1	This bit position will not screen messages.

Example: Acc Code = 11111111
Acc Mask =11111111

The shown acceptance filter will accept every received message.

Interrupt: Sets the interrupt for each port. Be sure that this setting matches the IRQ already selected for the PCL-841, which accepts values between IRQ3 to IRQ15, except 8 and 13.

Running mode: During the normal configuration and communication process, select Normal Mode. When the system fails, you can hit <Enter> to reset the CAN controller. Hit <Enter> again to return to Normal Mode to further execute your configuration.

Monitor

Select the port to be monitored from the <Monitor> pull-down menu. Press F3 to start and stop the monitoring process.

Monitor Screen

The monitored data for a selected port appears in the monitor screen (see area **B** in the diagram under Main Menu section.)

If the CAN controller is configured correctly and the transmission has been successfully completed, every CAN object will be shown in order of appearance.

Status Fields

Status fields at the right of the screen display the status of the two ports:

```
Port1
PORT1 Mode  :NORMAL
State       :00001100
Accept code:00000000
Accept mask:11111111
BT0         :03
BT1         :1C
Out control:11111010
```

```
Port2
PORT2 Mode  :NORMAL
State       :00001100
Accept code:00000000
Accept mask:11111111
BT0         :03
BT1         :1C
Out control:11111010
```

The status fields show information including the Mode (Normal or Reset), Acceptance Code, Acceptance Mask, BTR0, BTR1, Output Control Register, and Status Register. The normal value of the Status Register is:

```
00001100
```

- Receive Buffer Status
- Data Overrun Status
- Transmit Buffer Access
- Transmission Complete Status
- Receive Status
- Transmit Status
- Error Status
- Bus Status

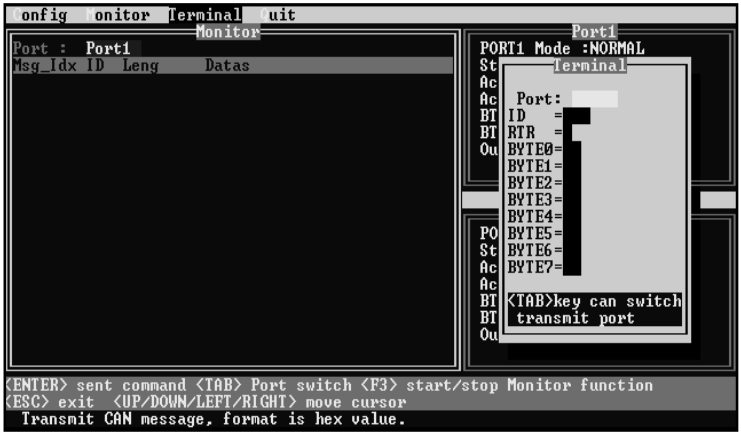
The registers can only be read if the CAN controller is in Normal mode. If the CAN controller operates correctly and the transmission has been completed successfully, the status register will show as the normal value: 00001100. If the Error Status and/or the Bus Status is 1, you have selected the wrong baud rate or the CAN cable is damaged. Also check the correct bus terminator.

Terminal

This function provides a direct way to:

1. Send data over the CAN network.
2. Test CAN transmission.

Select <Terminal> from the menu bar for the following screen:



Transmitting data

To transmit data, the PCL-841 must be connected to a CAN network with at least one node and the configuration for the card must be complete.

First, select <Terminal> to edit the data. Enter the port, the object ID and the data bytes as hexadecimal value. Press <Enter> to begin data transmission. If the CAN controller is configured correctly and the transmission has been successfully completed, every CAN object will be shown in order of appearance at the left side of the screen.

Testing data transmission

To test CAN transmission without actually sending, connect Port 1 to Port 2 on the PCL-841. Select <Terminal> and enter port 1 as transmitting port. Port 2 will therefore be designated as receiving port.

Note: To send Data Frame (Transmit), enter "0" for RTR. If you want to send Remote Frame (Request), enter "1" for RTR.