



System2[®]

Multi-Trucking Networks

Operator's Manual

FSC version S04133.17B

OPW Fuel Management Systems - System and Replacement Parts Warranty Statement

Effective September 1, 2002

System and Replacement Parts Warranty

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Meet System2!

Fleet managers need accurate information quickly and easily. The System2™ Automated Fuel Management System is designed to let you efficiently collect, sort, analyze and store vehicle and fueling data. .

Features of your new System2 include:

Superior Fuel Site Control

- On-site or remote access
- Stores thousands of transactions
- Menu-driven programming interface (not all versions)
- Automatic daily pump totals
- On-demand product, shift and pump totals
- Tank inventories with low-level alert
- 16 (32 in some models) product and 16 quantity restriction levels
- Cardless (keypad) entry permitted
- Single (driver), or dual (driver/vehicle) card operation
- Programmable customer messages and receipts
- Card, key or account lockout
- Account discounts
- Programmable open/close system times
- Three password levels
- Self-test and diagnostic functions

OPW Fuel Management Systems OPT or C/OPT (Outdoor Payment Terminals) and C/OPT (Commercial/Outdoor Payment Terminal)

The OPT fuel island terminal (FIT) and Commercial/Outdoor Payment Terminal (C/OPT) are the customer interface containing card readers, a keypad, and a display screen. Terminals can be equipped to handle magnetic stripe cards, optical cards, and OPW Fuel Management Systems Chip-Keys™.

- Up to 4 OPTs or 16 OPTs can be addressed by one FSC
- Built-in receipt printers
- Text OR graphic display

- Multiple card reader options: Optical, ISO standard mag-card, OPW Fuel Management Systems mag-cards, some non-standard commercial fueling cards
- ChipKey reader

Flexible Pump Control

- Up to 4 PCTs (Pump Control Terminal)
- UPC (Universal Pump Controller) option for electronic dispensers

Maximum Configuration Flexibility

One Fuel Site Controller (FSC), the small table-top control box, controls up to four fuel island terminals, (or 16 C/OPT “sides”) giving you the power to control up to 32 fueling positions in mechanical pumps. The FSC can also handle electronic and alternative fuel dispensers.

More information on these features is located in various parts of this manual.

Network Overview

This section explains System2 operation with a fueling network.

The following networks, shown with their respective trade names or card formats, are supported with this book. Depending on your system's configuration, one or more of the following networks may be supported:

- **Trendar** FDIS (fleet and single cards)
- **Comdata** (Comchek and single cards)
- **NTS** (InstantCash, Advantage, Transcash, Cam Am 1)
- **T-Chek**
- **NBS** (National Bankcard Services) for Fuelman/Gascard.
- **NBS** for Quarles fuel network
- **EFS**
- **TCH** (Transportation Clearing House)
- **Paymentech** (authorizer for credit and fleet cards -- currently supports the following **credit cards**: Visa, MasterCard, Amex, Diners Club, Discover, and the following **fleet cards**: Wright Express, Voyager Fleet and MasterCard Fleet (Visa Fleet is coming soon).
- **Fleet One**

Though differing slightly from network to network, a typical network transaction goes something like this:

1. The customer inserts his or her network card into the System2 FIT reader.
2. The customer answers prompts on the FIT display. The prompts are configured in the System2 Fleet Table (See *Fleet* on page 93).
3. The System2 dials the primary phone number in the Fleet Table for authorization, or local-authorizes the transaction (depending on the system parameters).
4. The System2 receives an Authorization Response:
 - If REFUSED, System2 displays 20 characters of a network response message.
 - If ACCEPTED, System2 displays a network message (if present), then "USE PUMP".
5. User re-swipes their card to get a receipt.
6. System2 receipt printer prints out receipt (FIT or C/OPT printer).
7. A transaction is printed on an optional attached journal printer.

Sample Network Transaction

This is an example of a Paymentech transaction.

```
SEQUENCE #..... 22 : Paymentech
REASON FOR TERMINATION. NORMAL
FLEET NAME..... PAYMENTECH : CAPTURED
AUTHORIZATION #..... Q:090239
DECLINE/ERROR MSG..... APPROVED
RETRIEVAL REF. #..... 00000024
HOST BATCH NUMBER..... 280001
IC COMPLIANCE..... C01428142780023956GP00554290 000028.32
DATE....(auth date).... OCT 08,2002 : 10/08/2002
TIME....(auth time).... 04:06 PM : 16:06
TRANSACTION #..... 132
CARD #..... 0494 : SWIPED: VISA
FUELTYPE..... #2 DIESEL
QUANTITY..... 16.666 GALLONS
PRICE..... $1.699
TOTAL..... $28.32
```

If You Are Upgrading

Turn to the appropriate appendix to perform the following upgrades:

Upgrade From	What You Must Do	See Appendix on...
FDIS system running "old" 42.XX software	New software	<i>Page 237</i>
Comdata Software 33.02X ("X" = any letter)	New software E-STOP-to-ALPHA key conversion. Memory upgrade from "EM" memory	<i>Page 215</i>
Comdata Software 33.03A - 33.05C	New software	<i>Page 215</i>
Standard System2 Card Record software	New software E-STOP-to-ALPHA key conversion.	<i>Page 259 and Page 275</i>
Any other System2 package	See appendices listed at right	<i>Page 259</i>

Equipment Overview

A System2 installation consists of:

- An FSC (Fuel Site Controller). This manual is primarily a guide to program the FSC.
- OPTs, C/OPTs (Commercial/Outdoor Payment Terminals) or FITs (Fuel Island Terminals). See the *FIT Installation & Operator's Manual*.
- PCTs (Pump Control Terminals). Also see the *PCT Operator's Guide*.

Each is described in brief next.

Fuel Site Controller (FSC)

At the heart of every System2 installation is the Fuel Site Controller.

The Fuel Site Controller stores transaction data and driver and vehicle records, including fueling restriction data critical to proper fleet management. For added security, it's kept indoors, away from the hazards of a 24-hour fueling island so, unlike self-contained systems, if the Fuel Island Terminal is damaged, your valuable data is safe.



Figure 1: System2 Fuel Site Controller (FSC)

The FSC manages the operations of the OPTs or C/OPTs, FITs, the terminal or computer, the journal printer, and optional modem.

The FSC must be installed indoors. It is attached to the OPTs, C/OPTs or FITs with twisted-pair wiring inside rigid steel conduit. Install the FSC as described in the *System2 Installation Manual*. See *Figure 4* on *page 13* in this book for a board overview.

Before you can program the system, attach the FSC to:

- A standard ASCII terminal OR
- An IBM® or compatible computer OR
- Any computer capable of ASCII communications.

If you are not using an ASCII terminal, the PC or mainframe computer must be running an emulation program to simulate an ASCII terminal.

For terminal baud rate, see *Table 1*, or the *System2 Installation Manual* (part number M41-00.01). In non-networked set-ups attach

For remote operation, the FSC connects to an optional modem to provide complete control from a remote terminal or computer over standard telephone lines. See *Appendix C - Modem Use* on page 161. modem operation. *Table 1* shows baud rate for the MODEM port.

The FSC has a built-in battery to protect its data in case of an interruption or loss of AC power. The battery can be disconnected when a total clearing of data is required.

The STATUS display shows, by blinking two numbers in sequence followed by a pause, the number of devices running on Petro Net. For example, when the display shows a “1”, then a “6”, followed by a pause, there are 16 devices attached. Up to 24 devices (16 OPTs, 4 FITs and 4 PCTs) can be connected.

FSC Specifications

Table 1: FSC Specifications

Dimensions	2" H x 10" W x 11" D (5 x 25 x 28 cm)
Power	110-120 VAC, 50/60 Hz (220-240 VAC, 50/60 Hz) 50W max
Operating Temp. Range	32EF to +122EF (0EC to +50EC)
Rear Port Protocols	<p>PRINTER: RS232</p> <p>MODEM: RS-232 (7-bit even parity 1 stop. 1200 baud default, 2400 and 9600 also available via internal switch).</p> <p>AUX 1-3 (Auxiliary Inputs): RS-232 (communication settings are not adjustable)</p> <p>TERMINAL (CAP): Proprietary protocol (7-bit even parity 1 stop. 1200 baud default, 2400 or 9600 available via internal switch, see <i>Figure 4</i> and <i>System2 Installation Manual</i>.</p> <p>PETRO NET (PN): RS-485 (9600 baud default, 1200, 2400, 4800 also available thru programming)</p>

Table 1: FSC Specifications

Front Panel Controls & Indicators	RESET button Press to “warm-start” system FUNCTION button Use with RESET to “cold-start” system STATUS display The number of devices the FSC is currently communicating with (0-32)
--	--

Connecting Fueling Components to the FSC

Petro-Net from other components of a System2 -- the fueling terminals, and the pump control -- comes together at a Petro-Net junction box. See the *System2 Installation Manual* for details.

A “Petro-Net Cable” is supplied with the FSC. Connect the “loose ends” of the Petro-Net cable to the Petro-Net junction box. Plug the DIN connector end of the Petro-Net Cable into the PETRO NET socket on the FSC.

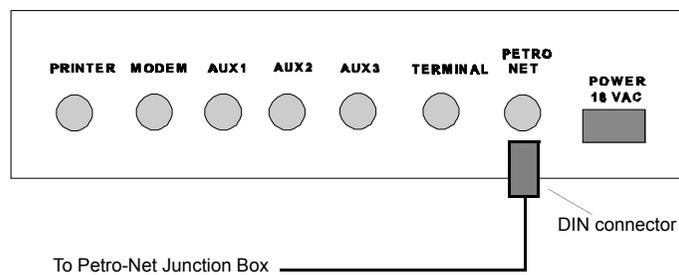


Figure 2: Attaching Petro-Net Cable to the FSC

Outdoor Payment Terminal (C/OPT)

The Outdoor Payment Terminal (*Figure 3*), or Commercial/Outdoor Fueling Terminal, is OPW Fueling System's fuel island terminal. Drivers use the C/OPT, which is located next to your site's pumps.

The C/OPT gathers information from pumps, and communicates with your Fuel Site Controller (FSC, explained in this manual) and Pump Control Terminal (PCT, explained in its own manual). The unit sits atop a pedestal, as shown in *Figure 3*.



Figure 3: Commercial/Outdoor Payment Terminal

See the *C/OPT Installation & Operation Manual* for complete installation and operation instructions.

Fuel Island Terminal (FIT)

The FIT is OPW Fueling System's original island terminal. Like the OPW Fueling Systems C/OPT, it contains a keypad, one or two card readers, and a receipt printer. The FIT, also like the C/OPT, gathers information from the pumps, and sends it to the FSC.

See the *FIT Installation & Operator's Manual* (available from OPW Fueling Systems) for complete details on installing and operating the Fuel Island Terminal.

Pump Control Terminal (PCT)

The Pump Control Terminal (PCT) gathers data from the pumps and formats it for the FSC. The PCT can be mounted in one of two ways:

- Built into an OPW Fuel Management Systems OPT or C/OPT (FIT) as a PC board (behind the FIT PC board)
- In the C/OPT on the back wall of the box (not shown), or
- As a “remote PCT”, in a separate indoor cabinet.

See the *PCT Operator’s Guide* for installation and operation instructions.

Configuring the FSC

Note

Plug in the battery **before** configuring the FSC.

Program a default fueling terminal message and set baud rate via DIP switches on the FSC PC board (Figure 4).

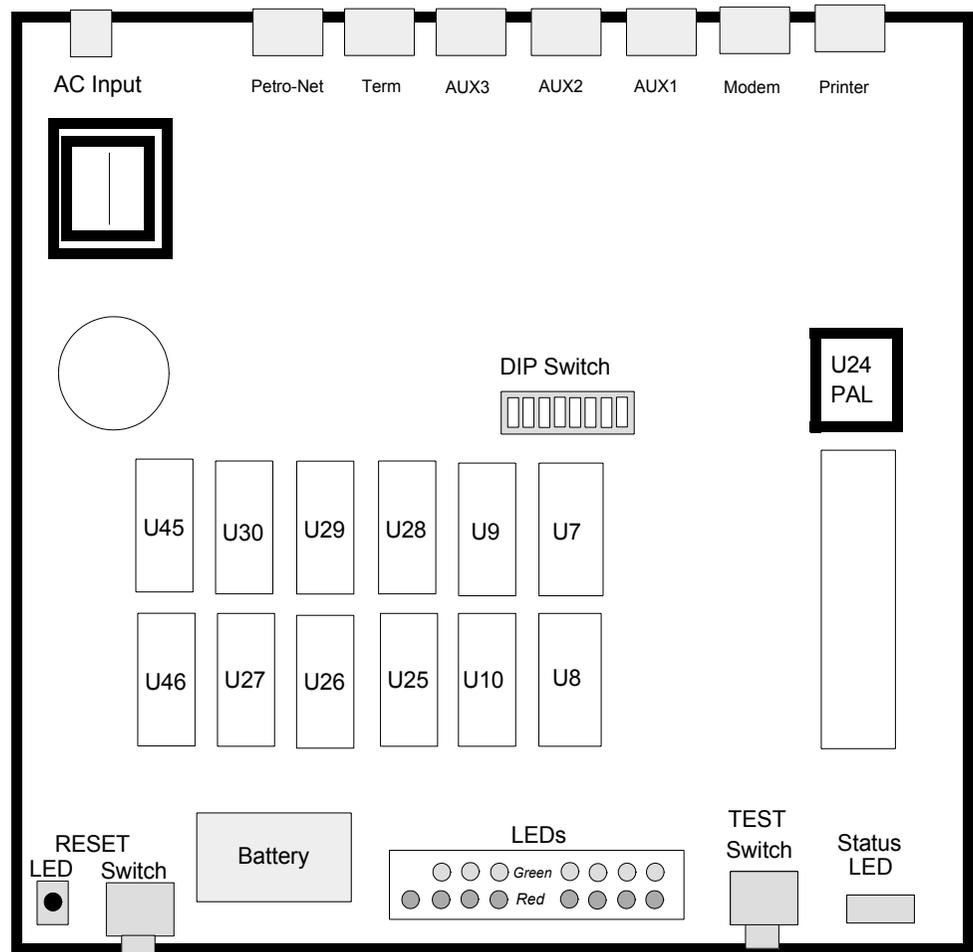


Figure 4: FSC PC Board

FSC DIP Switches

The DIP switch “SW1” on the FSC board controls several FSC settings.

Note

Positions 3, 4, 5, and 8 of SW 1 are not used. Leave them OPEN.

Positions 1 and 2: Display Type

Switch #1, positions 1 and 2, determine default display messages.

Table 2: Fueling Terminal Display Type Setup

Display Type	SW POS 1	SW POS 2
2 x 16	OPEN	OPEN
1 x 40	OPEN	CLOSED
Graphical	CLOSED	OPEN

Note

You MUST cold-start the FSC after changing the display type.

Positions 6 and 7: Baud Rate

Set the FSC baud rate with Positions 6 and 7 of DIP Switch #1. See *Table 3*.

Table 3: FSC Baud Rate Setup

Baud Rate	SW1 POS 6	SW POS 7
300	OPEN	OPEN
1200	OPEN	CLOSED
2400	CLOSED	OPEN
9600	CLOSED	CLOSED

Note

The baud rate of the FSC, all fueling terminals and all pump controllers must be the SAME! Make sure the computer or terminal (and modem) communicating with the FSC uses this baud rate as well. See the instruction manuals for the fueling terminals and pump controllers to change baud rate for those devices.

If you experience communication problems with very long runs of Petro-Net cable (approaching the 5,000 foot limit), try decreasing the baud rate.

Switch 1 does NOT affect the Petro-Net baud rate, or the baud rate of any other system port.

FSC Port LEDs

Sixteen LEDs on the FSC board show the current state of each FSC port, as shown in *Table 4*.

Table 4: FSC Port Indicator LEDs

LED Function	LED Color	LED Label
PRINTER port transmitting	Red	CR32
PRINTER port receiving	Green	CR37
MODEM port transmitting	Red	CR80
MODEM port receiving	Green	CR85
AUX1 port transmitting	Red	CR35
AUX1 port receiving	Green	CR40
AUX2 port transmitting	Red	CR41
AUX2 port receiving	Green	CR39
AUX3 port transmitting	Red	CR36
AUX3 port receiving	Green	CR38
TERMINAL port transmitting	Red	CR81
TERMINAL port receiving	Green	CR86
PETRO-NET port transmitting	Red	CR23
PETRO-NET port receiving	Green	CR22
PETRO-NET port TX enabled	Yellow	CR24
RESET	Yellow	CR31

System Start-Up

To power up the system, apply power to all fueling terminals and, if applicable, each remote pump controller. Make sure the FSC power supply is plugged into an AC socket.

Note

Do not apply power to your pumps yet.

1. With power ON, unplug the battery connector from the FSC PC board.
2. Press and hold the FSC TEST button, then press (do not hold) the RESET button.
 - A “C” appears in the FSC display.
3. Release the TEST button, and reconnect the battery.

The FSC now enters the communication default mode described in the next section.

When the system is cold-started, it “installs” (establishes a communication link with) the first fueling terminal and the first two pump positions in the pump controller.

Note

The FSC downloads default (pre programmed) values for messages, fuel types, pump numbers, and several other settings.

The front-panel STATUS display sequences for about 45 seconds. During this time, the FSC counts the number of fueling terminals and indoor pump controllers installed and communicating with the FSC via Petro-Net. The resulting number is displayed as two numbers flashed in sequence.

Example

If eight fueling terminals are connected and operational, the single-digit LED display shows “0”, quickly followed with “8”. After a pause, the sequence repeats.

The blinking decimal point in the STATUS display indicates that Petro-Net is active.

Operational Overview

After Power-Up

At power up, menus are disabled. When you enable them the first menu to appear is the *non-privileged* Main menu (*Figure 5 on page 25*).

To enter privileged mode, either type HELLO at the “>” prompt, then enter the privileged password., OR use the MENU option in the SYSTEM PARAMETERS menu.

In most systems, commands can be reached via the menus; “regular” commands can be entered at the > or P> prompt. - Use the MENUS option in the SYSTEM PARAMETERS menu to turn menus OFF or ON.

The first menu that appears after power is applied to **System2** is the Main menu (*Figure 5 on page 25*).

All system functions are accessed from the Main menu:

- System Access
- System Times
- System Devices
- Customer Messages
- System Parameters
- Restrictions
- Cards
- Transaction Data
- System Totals
- Journal Printer

Each is briefly described below.

System Access

See *Accessing System2* on page 27.

System Access includes:

- OPEN and CLOSE commands (for immediate pump access)
- CALL (creates a virtual link between the TERMINAL port and the MODEM port on the Fuel Site Controller)
- HELLO and BYE (for privileged-level access)
- PASSTHRU (permits two “intelligent” devices to communicate via a single terminal).

Note

Only the normal or the restricted mode may be enabled at one time. When the '\$' prompt displays, the restricted mode is enabled and the restricted password must be entered to proceed.

System Times

See *Setting Time and Date* on page 29.

System Times menu set the following:

- Real time and date
- Date on which to change to (and from) daylight savings time
- When to turn the system ON and OFF
- When to turn the pocket lights ON and OFF.

System Devices

See *Device Setup* on page 33.

- This menu lets you The OPT, C/OPTs or FITs
- The C/OPTs
- The PCTs
- The optional UPC (Universal Pump Controller)-equipped PCT.

The OPT or C/OPT or FIT controls the card/key reader(s), keyboard, display and optional /receipt printer.

The following features can be programmed for each FIT:

- Whether to issue transaction receipts
- The time limit for issuing receipts
- Whether to allow keyboard entry of data

- Which PCTs to shut off when the Emergency Stop button is pressed
- If the card reader error counter should be reset
- Which pumps should be activated.

The **Pump Control Terminal boards** are either in the pedestal or in a separate cabinet. Each PCT board controls multiple parameters for up to eight pumps.

- Pump number
- Status of the pumps
- Product name for this pump
- Tank number supplying this pump
- Any quantity restrictions on the pump
- Maximum total time permitted for fueling
- Maximum time allowed for customer to lift the pump handle
- Maximum time for system to detect first pulse (start of fueling)
- Maximum time allowed for Multi-Product Dispensers (MPDs)
- The pump's pulser "divide-by" rate
- Whether the pump handle monitor is enabled or disabled
- Whether the Pump Sentry feature is enabled or disabled

The **UPC** can emulate up to four PCTs for operation with a self-service console. The UPC option lets System2 and a site console control *simultaneous* unattended *and* self service fueling. For complete details on UPC operation, refer to the *UPC Operator Guide*.

Customer Messages

See *Customer Messages* on page 43 to learn how to:

- Define receipt format and bonus points
- Display prompts and keyboard responses
- Create individual messages for customers
- Specify a date/time format

System Parameters

See *System Parameters* on page 73 to learn how to:

- Display a system status report
- Set a site ID
- Specify fuel units, prices, and names
- Define product "labels"

- Create new passwords
- Enable or disable the dual language feature
- Enable or disable the menus
- Enable or disable the response echo
- Specify a coupon value (“bonus points”)
- Define the system memory size
- Display the software version
- Set network parameters
- Set fleet information
- Define network display prompts
- Set tax information
- Test the back-up battery

Restrictions

See *Restrictions* on page 99 to limit fuel dispensing with:

- Odometer Reasonability
- Pump Restrictions
- Quantity Restrictions
- Security Table

Cards & Accounts

See *Cards/Accounts* on page 105. Accounts are not used in all System2 versions.

With Card and Account features you can show, print, validate or invalidate cards and ISO numbers. System2 recognizes three types of card/numbers:

- Single
- Driver
- Vehicle

System2 is activated via magnetic cards, optical cards, or programmable Chip-Keys, depending on the reader supplied with your system.

Show, print, set, validate or invalidate cards and ISO numbers. Three distinct types of card or key are recognized:

- Single
- Driver
- Vehicle

System2 maintains a record for each card, key, and/or account. Each record contains some or all of the following:

- Account/department number
- Expiration date
- Monthly allocation
- Daily allocation
- PIN (Personal Identification Number)
- Odometer entries
- Odometer reasonability with minimum and maximum levels
- Pump or product restriction
- Quantity restriction per transaction
- Miscellaneous data prompting
- Driver name or vehicle description
- Card or ChipKey number
- Language type (first or second)
- From one to three verifiable prompts
- Up to nine additional prompts

Transaction Data

See *Transaction Data* on page 117 to learn how to view and edit:

- Driver and vehicle card/key numbers
- Transaction and pump numbers
- Product type, quantity and price
- Keypad entries (for odometer entries and miscellaneous data).

All transaction records are fixed-length.

System Totals

All completed System2 transactions can be printed, displayed, or both. Use System Totals to restrict the viewed or printed transactions by:

- Date
- Time
- Transaction, card, account, or vehicle number
- Pump
- Fueltype
- Day, shift, or midnight.

Journal Printer

See *Appendices* on page 139.

The journal printer must be set before it can print System2 data. You can temporarily block the transaction logging function to prevent transactions from being interspersed throughout a report printout.

Main Menu and Menu Overview

```

MAIN MENU
-----
A - SYSTEM ACCESS
B - SYSTEM TIMES
C - SYSTEM DEVICES
D - CUSTOMER MESSAGES
E - SYSTEM PARAMETERS
F - RESTRICTIONS
G - CARDS/ACCOUNTS
H - TRANSACTION DATA
I - SYSTEM TOTALS
J - JOURNAL PRINTER

'RETURN' FOR COMMAND LINE

ENTER CATEGORY :

```

Figure 5: System2 Main Menu

System2 powers up in command line mode. You issue commands at the “>” prompt (such as > **SET TIME**). Press the ENTER key after entering the command. Common command types are: Menus are available, however, to simplify operations.

To turn the menus ON, do the following:

1. Get into the *privileged* mode by entering the privileged password at the prompt.
2. Enter **SET MENU** at the P> prompt.
3. Answer **Y** to ENABLE MENUS (Y/N) ?

If you do *not* enable the menus, System2 continues to operate in “command line” mode, which is the mode used in the Petro-Vend K2500.

To suspend the menus for one command, press [ENTER] several times at the prompt, until the command line reappears. After the command is entered at the command line, the menus reappear.

Use the **SET MENU** command to enable or disable the menus for your entire programming session.

To select a menu item, simply press the matching letter key, followed by the [Return] (or [ENTER]) key. For example, to select “System Access”, press

the [A] key, then press the [Return] key. You can use the backspace key ([7]) to change your selection before pressing the [Return] key.

A submenu is displayed after you select an item from the MAIN MENU. To display a help screen for the MAIN MENU, type '?', then press [ENTER].

- Some menus require you type only a letter corresponding to a command (such as **SET**) to activate a particular function; others require first a command and then an option (such as **INSTALL**, followed by **PCT**). **SHOW**. Displays information from a System2 data base on the screen of your terminal or PC. This command does not require privileged status.
- **PRINT**. Sends data to your external journal printer to make a hard copy. Most (but not all) information can be printed, including all setup data (cards, accounts, fueltypes, prices, etc.) and all transaction information (time, date, amount, price, cost, etc.). This command does not require privileged status.
- **SET** (**FORMAT** and **CONFIGURE** work similarly). These commands are used to enter or change the setup data. These commands are privileged. Note that after **FORMAT** or **CONFIGURE** commands is used, one of the 'DOWNLOAD' commands must then be entered.

Other menu commands are listed below:

- **INSERT, DELETE, EDIT, COPY, SORT** - These commands are used with the card files. Some are privileged commands, some are not.
- **INSTALL/REMOVE** - These commands activate and deactivate a device (such as a PCT). Privileged commands.
- **CLEAR** - There are several **CLEAR** commands, which erase transactions from the system data base. Privileged command.
- **REPORT** - activates the optional Report Package. Privileged command.

Accessing System2

```
-----  
SYSTEM ACCESS      ** PRIVILEGED **  
-----  
A: OPEN  
B: CLOSE  
C: CALL  
D: HELLO  
E: BYE  
F: PASSTHRU  
-----  
^ENTER COMMAND:
```

Figure 6: System Access Menu

OPEN and CLOSE

The **OPEN** and **CLOSE** commands give immediate access to pumps. Both commands are privileged, requiring the main password.

When a **CLOSE** command is issued, all activities in progress (pumping, printing a receipt, etc.) complete normally but no new activities are allowed to begin.

HELLO and BYE

HELLO accesses the privileged mode. You'll be prompted for the system password (the factory default password is 'HELLO').

BYE exits the privileged mode.

Note

The system automatically exits from privileged mode if no keyboard entry is made for 10 minutes.

To access the system using a PC and/or a modem, see *Appendix D - Using System2 With a PC* on page 163.

Use the privileged mode to enter and change setup data. You **MUST** enter the “main” password to Privileged mode. To return to normal mode from the command line **\$>** prompt, type **BYE**.

See *Password* on page 78 for information on changing your passwords.

CALL

The **CALL** command creates a virtual link between the **TERMINAL** port and the **MODEM** port on the Fuel Site Controller.

- *Before executing the **CALL** command, a modem and terminal must be connected to the **MODEM** and **TERMINAL** ports, respectively.*

After executing **CALL**, use a terminal connected to the **FSC TERM** port to issue dial out commands directly to the modem.

To break the connection, type **BYE**.

PASSTHRU

The **PASSTHRU** command lets two intelligent devices (such as a OPW Fuel Management Systems Site Sentinel and a System2) communicate with a second terminal-based device using only one terminal connection.

- *BEFORE issuing a **PASSTHRU** command, connect the second device to the **AUX 2** port on the System2. The video terminal goes to the **TERM** port as before.*

The “other” device must use the RS-232 standard interface, and must be set at the same baud rate and parity as the System2: 7-bit, even parity, 1 stop bit.

After you send a **PASSTHRU** command, System2 enters a “transparent” mode, where characters sent to it by the terminal or a modem are passed through to the second device. Any characters coming from the other device would likewise pass through to the terminal or modem.

Press **[CTRL] [Z]** to break the pass-through connection.

Setting Time and Date

From the MAIN menu, press B

```

-----
SYSTEM TIMES      ** PRIVILEGED **
-----
A: SHOW           A: TIME
B: PRINT          B: TIME CHANGE
C: SET            C: DATE
                  D: SYSTEM ON TIME
                  E: LIGHT ON TIME
-----
^ENTER COMMAND:  ^ENTER OPTION:

```

Figure 7: System Times Menu

Time of Day

The **SHOW TIME** or **SET TIME** command displays or sets the current time of day. **SHOW TIME** displays current system time.

To set time of day:

1. Type **SET TIME** [ENTER].
2. Enter the time in the format HH:MM or HH:MM AM or PM. For example, 12:57 PM.
 - *If PM is not specified, AM is assumed.*
3. Press [ENTER] to complete the entry; this sets seconds to zero. The new time and current (or default) date are displayed.
 - Press [ENTER] with no other entries to leave the current time unchanged.

Daylight Savings Time

Note

Daylight savings time must be set in System2 annually.

The **SET TIME CHANGE** command sets dates on which the internal clock moves ahead or back by one hour, to adjust for the change between daylight savings time and “standard” time. The change occurs at 2:00 AM on the date specified.

The **SHOW TIME CHANGE** command displays change dates in the system.

To set daylight savings time: (menu commands are in parenthesis):

1. Type **SET TIME CHANGE** [ENTER] (or press **C B**).
2. Enter the date you set your clocks *back* an hour at the **ENTER DATE WHEN TIME IS MOVED BACK 1 HOUR:** prompt.
 - *Use date format **mmm dd yyyy** (the year must be four digits).*
3. Press [ENTER].
4. Enter the date you set your clocks *ahead* an hour at the **ENTER DATE WHEN TIME IS MOVED AHEAD 1 HOUR:** prompt.
5. Press [ENTER].
 - *The word **CHANGE** can be abbreviated **CH** in these and other line commands.*

Setting Current Date

The **SHOW DATE** or **SET DATE** command displays or sets the current date within the system's memory.

To set current date, do the following:

1. Type **SET DATE** [ENTER] (Menus, press **C C**).
2. Enter the date at the **ENTER DATE (MMM DD, YYYY):** prompt.
 - *Use date format **mmm dd yyyy** (the year must be four digits).*
3. Press [ENTER].
 - *Press [ENTER] with no entry to leave the current date unchanged.*

Setting System2 ON and OFF Times

The **SHOW SYS TIME** and **SET SYS TIME** commands display or set the time System2 goes ON and OFF, and the time during which only “transactions in progress” can be performed (“receipts only” time).

Use the **SET SYS TIME** command to set the following four options. Time for the first three is entered in **hh:mm** format).

- **SYSTEM ON TIME** - specifies the time of day the System2 turns itself ON. When ON, System2 displays messages and accepts cards or key-pad entries.
- **SYSTEM OFF TIME** - the time of day System2 shuts itself OFF for the day. No new transactions can begin, though any in progress are allowed to finish.
- **RECEIPTS ONLY TIME** - time System2 stops new transactions from beginning, while allowing “just completed” customers to get receipts. Typically precedes **SYSTEM OFF TIME** by several minutes.

For example, a gas station that dispenses fuel from 9:00 AM until 7:00 PM would have a **SYSTEM ON TIME** of 9:00 AM, a **SYSTEM OFF TIME** of 7:10 PM and a **RECEIPTS ONLY TIME** of 7:00 PM.

- **TIME ADJUST** - A software adjustment to the internal clock. If your system is gaining or losing time, you can add or subtract seconds each day with this entry.

Light ON/OFF Time Commands

The **SET LIGHT** command lets you set the SYSTEM2 to turn the “pocket” lights in the ON and OFF at designated times. After selecting this option, the following prompts appear:

```
ENTER LIGHT ON TIME :  
ENTER LIGHT OFF TIME :
```

Enter time in the same format as that for **SYSTEM ON TIME**.

Device Setup

From the MAIN menu, press [C]

```

SYSTEM DEVICES ** PRIVILEGED **
-----
A: SHOW          A: FIT #...
B: PRINT         B: OPT #
C: INSTALL.     C: PCT#
D: REMOVE       D: PCT # POS
E: CONFIGURE    E: PUMP #
                F: PROGRAM #
-----
F: SET
G: DOWNLOAD
-----
ENTER COMMAND ENTER OPTION:

```

Figure 8: System Devices Menu

About the System Devices Menu

Because of its relative complexity, this introduction describes the System Devices menu.

The section is arranged by device type: **FIT (or OPT) #**, **C/OPT#**, **PCT #**, **PCT #/Position #**, **Pump # Program** and **OSP**. Not all commands work with all devices.

Note

C/OPTs and OPTs are types of fuel island terminals (FITs). Some "FIT" commands work with OPTs and C/OPTs but OPT and C/OPT commands do NOT work with the older FITs.

FIT Commands

The **SHOW**, **PRINT**, **INSTALL**, **REMOVE** and **CONFIGURE FIT #** commands let you view, configure, install or remove FITs. You can also determine if the receipt printer will issue receipts, whether the keyboard is enabled or disabled, which PCTs to shut off when the emergency stop button is pressed, and reset the card reader error counter.

Issuing a **SHOW FIT** command, along with a valid FIT number, displays the following message:

```

FIT Installed
FIT INFO:
  PDI   KR16   1.02A   0000   0000   GRAPH DISPLAY
Island Terminal:  OPT
Decline Timeout:  10 seconds
Prompt Timeout:   15 seconds
Receipts: 0      5 day limit to receive receipts
Keyboard Access -- ENABLED -- Length: 30
PCTs to shut off On E-Stop: 1,2,3,4
Card Reader Error Counter: 0
--ACCESS TO ALL PUMPS

```

Entries vary depending on current FIT settings. **CONFIGURE FIT** changes these settings. The following prompts appear one by one after using **CONFIGURE FIT #**:

- **IS THIS AN C/OPT (Y/N)?** If your fueling terminal is a Petro Vend Commercial/Outdoor Payment Terminal answer Y. Otherwise press N.
- **Is This a K800 FIT (Y/N)?** If your fueling terminal is a Petro Vend K800 (System2 compatible) press Y. Otherwise press N.
- **Enter DECLINE MESSAGE TIME-OUT seconds: 15.** This determines how long, in seconds, the Decline Authorization message remains on the FIT. Enter a value from 1-99; 15 is default. View the time-out with **SHOW FIT**. Only the first 20 characters of the message are displayed.
- **Enter PROMPT TIME-OUT CODE (1.9): 3.** This code represents the time that a prompt remains on the FIT display (*Table 5*). Default is 3 (25 seconds):

Table 5: Prompt Time-out Codes

Code	Time-out in seconds
1	15
2	20
3	25
4	30
5	35
6	40
7	45
8	50
9	55

- **ISSUE RECEIPTS (Y/N) ?** - Enter Y to have the optional receipt printer issue a receipt (N is default). If you enter [Y] to the ISSUE RECEIPTS? prompt, additional prompts appear:
 - **ENTER LIMIT TO RECIEVE RECIEPT IN DAYS.** (0-99). This is the number of days after a transaction that the customer can retrieve a reciept for that transaction. Default is NO LIMIT
 - **CLEAR RECIEPT COUNTER (Y/N)** . A running total of all receipts issues to date. This counter lets you keep track of how much reciept paper remains.
- **ENABLE/DISABLE KEYBOARD ACCESS (Y/N) ?** If enabled, you are asked to disable. If disabled, you are asked to enable. In either case, the default is NO. When enabled, you will see **Enter Keyboard Length (1.32)** . The length of the string you can enter is based on supported networks. Simply count the number of digits in the number on the card. If your system supports more than one network, enter a value equal to the length of the longest card number.

With Keyboard Access enabled, customers can enter card numbers on the FIT keyboard. For more details about “cardless” card records, see *Inserting Cards or Accounts* on page 107.

The card reader is not disabled by enabling keyboard access. Some networks do not allow keyboard entry. Refer to your network documentation.

- **SPECIFY PCTs TO SHUT OFF ON E-STOP (Y/N) ?** - Default is N (meaning ALL PCTs shut off upon E-STOP). If you enter [Y] to select which PCTs will be turned off, you'll see:
 - **ENTER PCTs TO SHUT OFF (#,#.)** - Enter a range and press [ENTER].

Note

This option is only valid for FITs. When the emergency stop button is pressed on this terminal, all configured pumps on the specified PCT turn off. THE E-STOP FEATURE DOES NOT MEET NEC CODES FOR EMERGENCY STOP DEVICES.

If there are card reader errors logged, the next prompt you'll see is:

- **CLEAR CARD READER ERROR COUNTER (Y/N) ?** You will only see this prompt if the “error counter” is greater than zero. The error counter keeps a running total of bad reads by the card reader. The system defines a bad read as one where the card reader cannot read a card correctly in three sequential attempts. Such a failure could indicate that the card reader needs cleaning or replacement

Enter **Y** to clear the counter. Enter **N** to keep the counter the same and to display the next prompt.

- **CHANGE FIT ACCESS TO PUMPS (Y/N)?** – Default is N. Enter [Y] to change which pumps can be activated by the specified FIT: ENTER VALID PUMPS (p1, p2, .). Enter N to make all pumps accessible from this FIT.

Enter **DOWNLOAD** after FIT configuration.

FIT Display Programming Sequence

Enter at prompt and press [ENTER] to complete the entry.

```

IS THIS A C/OPT (Y/N)?
IS THIS A K800 FIT (Y/N)?
Enter DECLINE MESSAGE TIME-OUT seconds: 15.
Enter PROMPT TIME-OUT CODE (1.9): 3.
ISSUE RECEIPTS (Y/N)?
--ENTER LIMIT RECEIVE RECEIPT IN DAYS (0.99) -
--CLEAR RECEIPT COUNTER (Y/N)?
ENABLE/DISABLE KEYBOARD ACCESS (Y/N)?
ENTER KEYBOARD LENGTH (1...32): 18
SPECIFY PCTS TO SHUT OFF ON E STOP (Y/N) N
CHANGE FIT ACCESS TO PUMPS

```

INSTALL FIT Command

The **INSTALL FIT X** command activates the specified FIT and opens a communication link between the installed FIT and the FSC.

REMOVE FIT Command

The privileged **REM FIT X** command stops the FSC from communicating with the specified FIT. Here, “X” is from 1-4 (the specific device).

PCT Commands

You can **SHOW**, **PRINT**, **INSTALL**, **REMOVE**, or **CONFIGURE** a PCT#.

Each System2 FIT has a PCT board that controls pump operations. This board, in the FIT or in a remote cabinet, must be uniquely numbered.

PCT number is set with DIP switch #5 on each PV-268 board. See the *System2 Installation Manual* for details.

If the FSC is equipped with UPC (Universal Pump Controller) software, it can authorize fueling transactions via a pump control console (such as used in a self service station).

Note

Pumps controlled by UPC software do not require a PCT board, but DO require the logical PCT to be configured within the FSC.

CONFIG PCT Command

The **CONFIG PCT #** command first asks if a UPC will be substituted for the specified PCT. Press [Y] or [N] as appropriate.

If yes, you are prompted if the UPC is internal (built into the FSC) or external (in a separate cabinet). Refer to the appropriate System2 UPC manual before proceeding with UPC configuration.

Note

To reconfigure an installed PCT as a UPC, first remove the PCT using the command REMOVE PCT #.

When System2 is “cold started” (with no setup information in the data base), PCT #1 is automatically installed as not a UPC. A cold start is required: (1) when System2 is first installed or (2) if both the system power and backup battery fail.

The **INSTALL PCT** command activates the PCT, creating a link between the installed PCT and FSC. There is a PCT for each FIT. This command does *not* install all positions for a PCT.

Caution

Install pumps BEFORE installing PCTs!

After installing each pump position, the PCT(s) themselves *must* be installed in order for the pumps to operate as part of the system.

A PCT can be configured and kept idle by *not* installing it.

On power-up, PCT #1 is automatically installed.

REMOVE PCT Command

The **REMOVE PCT** command ends FSC-to-PCT communication to the specified PCT and deactivates all positions in the specified PCT.

All the programmed parameters remain intact; you can re-install the “removed” PCT without reconfiguring it.

PCT POSITION Commands

You can SHOW, PRINT, INSTALL, REMOVE, or CONFIGURE a position within a PCT#. These commands configure or show individual positions within a PCT.

Each PCT can control up to eight pumps, located at positions #1 - #8.

```
PCT POSITION
ENTER PUMP #:
ENTER PULSES PER GALLON:
MAX FUEL TO BE DISPENSED PER TRANSACTION:
PUMP SENTRY OPTIONS (Y/N)?
    ENABLE PUMP SENTRY (Y/N)
PUMP SENTRY:
GALLON PULSER OPTIONS (Y/N)?
GALLON TO LITER CONVERSION:
MAXIMUM TIME ALLOWED FOR FUELING (minutes):
MAX TIME ALLOWED TO RETRIEVE PUMP HANDLE (secs):
MAX TIME ALLOWED TO DETECT FIRST FUELING PULSE (secs):
MAX TIME ALLOWED BETWEEN FUELING PULSES (secs):
ENTER FUELTYPE CODE #:
ENTER TANK #:
CLEAR PUMP TOTALS (Y/N)?
ENTER TOTALIZER VALUE:
```

Required Entries

After issuing this command, the following parameters must be specified for each position:

Pump

This is the pump number displayed for this PCT position (example: 'USE PUMP #12'). This number is only a label and does *not* have to match the PCT position number.

A pump number can be assigned to more than one position on the same PCT. When that pump number is selected by a customer, all the associated positions are activated.

For example, say pump number "2" is assigned to positions #1 and #2. A customer with a large saddle-tank equipped truck could speed his fueling by putting Position 1's pump into one of the tanks and the Position 2 pump into the other tank.

Each PCT position records its own transaction; in this example, two transactions would be recorded (one for each pump). *Multiple pump use is not possible when using UPC software.*

Pulses Per Unit

Specifies the number of pulses per “unit” of fuel. A unit is typically gallons, liters or quarts. The prompted unit is the one related to the fuel type just entered. Default value is 100.

Optional Entries

The following optional items have defaults that should be appropriate for most systems. Press [ENTER] to skip past an optional item and enter the default value. To change a default, enter your new value at the prompt.

Max Fuel Per Transaction

This is the maximum fuel amount to be dispensed for any transaction using this pump). Default is 10 units.

Max Fuel Per Transaction is not the same as Quantity Restriction or the Daily/ Monthly Allocations described in Restrictions on page 99.

Enable/Disable Pump Sentry Feature

This option deactivates the pump if three “zero quantity” transactions appear in a row, possible pump or pulser trouble. You will be prompted twice: `PUMP SENTRY OPTIONS (Y/N)?'. Enter [Y] to enable the sentry.

If you enter [Y], you'll see `ENABLE PUMP SENTRY (Y/N)?'; press [Y] or [N] as appropriate. Default is disabled. A “premature busy” error does NOT increment counter.

Max Time For Fueling

This is the time limit (in minutes) given the user to fuel. Default is five minutes. Time is measured from when the pump is first activated; power is removed from the pump when Max Time is exceeded. To deactivate this feature, enter `0'.

Max Time For Pump Handle

The maximum time allowed (in seconds) between pump activation and pump handle retrieval; default is 60 seconds. Enter “0” to deactivate.

Max Time For First Pulse

The maximum time allowed (in seconds) to detect the first fueling pulse from when the pump handle is first retrieved. Pump power is removed when the specified time is reached. Default is 60 seconds. Enter “0” to deactivate.

Max Time Between Pulses

The maximum time allowed (in seconds) between fueling pulses. Pump power is removed when this time is reached. Default is 60 seconds. To deactivate, enter “0”.

Fueltype Code #

This is a number, from 1 to 32, that represents the type of fuel this position will dispense. See *Page 74* for information on fuel types.

Tank #

This is the tank number from which product will be pumped. A PCT position with the same fuel type as the tank from which product is drawn must be defined. Default tank number is *position #*.

Clear Pump Totals

Lets you clear the net pump totals; default is *no*.

Enter Totalizer Value

Set a number to match the totalizer counter on the pump face; tracks the amount of fuel actually dispensed by the pump and as seen by System2. Default is “0”. For UPC-equipped systems, the last four prompts are repeated for up to four hoses. Do a DOWNLOAD either directly, or via the menu, after configuring a PCT. Activate/deactivate the specified PCT position.

Set a number to match the sum of the totalizer counters on the two bound pump faces; tracks the amount of fuel dispensed by the “bound pump” and as seen by System2. Default is “0”.

PROGRAM

The INSTALL, CONFIGURE, SHOW and REMOVE commands let you configure internal UPC software. Prompts displayed (after INSTALL or CONFIGURE) depend on the specific UPC version installed...see the manual for the UPC software.

Note

Before issuing an INSTALL PROGRAM command, make sure the logical PCT associated with the UPC has been configured.

SET PUMP ON

Use this command to manually turn ON a pump from the FSC. Use it to test pump wiring or configuration, or to manually enable a pump for any other

reason. Before you issue a SET PUMP ON command the positions in the PCT must be configured and installed.

DOWNLOAD

Use DOWNLOAD after you've finished all CONFIGURE and FORMAT commands. System2 does not recognize changes until after a download has been done. You do not need to do a download until all your changes are finished.

DOWNLOAD FIT#/PCT#

After making specific changes to a specific device, you can download only that device with this command. Enter the device (FIT or PCT) followed by its ID number. This command allows other devices to continue operating normally while updating one.

Note

Issuing a DOWNLOAD command essentially "stops" all effected devices.

OSP (On-Site Processor) Commands

If you are using the Warren Rogers On-Site Processor box, these commands enable communication between that box and the Petro Vend FSC.

SET OSP

Programs the right-most card number digit for cards.

```
P> set osp
Activate OSP Communications (y/n)? y

Enter the number of the right-most card digit, to send to the
OSP, for COMDATA host transactions: 8

Enter the number of the right-most card digit, to send to the
OSP, for EFS host transactions: 16

Enter the number of the right-most card digit, to send to the
OSP, for EFS host transactions: 10

OSP Status:
--Communications active!
--Slow Poll in Process (not seen if COM is active)
```

To disable:

```
P> set osp
Disable OSP Communications (y/n)? y
Disabled!
```

SHOW OSP

Displays current OSP status. Use SHOW OSP when COM is *disabled*, SHOW SYSTEM when COM is *enabled*)

```
P> sh osp
```

```
Enter the number of the right-most card digit, to send to the
OSP, for COMDATA host transactions: 8
```

```
Enter the number of the right-most card digit, to send to the
OSP, for EFS host transactions: 16
```

```
Enter the number of the right-most card digit, to send to the
OSP, for EFS host transactions: 10
```

```
OSP Status:
```

```
--Communications active!
```

```
--Slow Poll in Process (not seen if COM is active)
```

```
P> SH SYS
```

```
System2: Card Record Version # 33.11a
```

```
Multi-Trucking Network Package
```

```
Enabled Networks COMDATA, EFS, TCH
```

```
EPROM CHK: F45A
```

```
DISPLAY: 2x40 - (GRAPHICS) PPU: PROGRAMMABLE PNET: 1200
```

```
SEP 11, 2002 04:30 PM System ON Battery OK
```

```
Installed FITs:
```

```
1: Status -- Down
```

```
Installed PCTs:
```

```
(std) PCT 1, Positions: 1,2
```

```
Status -- Down
```

```
OSP: Installed Status: Running (if OSP communicating) OR
```

```
OSP: Installed Status: Down (it it's offline)
```

```
--Number of host card digits to send for COMDATA: 8
```

```
--Number of host card digits to send for EFS: 16
```

```
--Number of host card digits to send for TCH: 10
```

```
LOW TANKS: None
```

```
Power Fail Times:
```

```
AUG 23, 2002 3:15 PM
```

```
AUG 29, 2002 1:25 PM
```

```
SEP 01, 2002 9:45 PM
```

```
SEP 11, 2002 8:47 AM
```

Customer Messages

From the MAIN menu, press [D]

```

-----
CUSTOMER MESSAGES ** PRIVILEGED MODE **
-----
A: SHOW                A: RECEIPT BODY
B: PRINT               B: RECEIPT HEADER
C: FORMAT              C: RECEIPT TRAILER
                       D: RECEIPT BONUS POINTS
                       E: DISPLAY (#...)
                       F: KEYBOARD (#...)
                       G: MESSAGES
                       H: DATE
-----
^ENTER COMMAND:      ^ENTER OPTION:

```

Figure 9: Customer Messages Menu

This section explains how to format the printed customer receipts (body, header, trailer, and bonus points), how to set up messages and prompts on the various types of FIT, OPT or C/OPT displays, and how to change the response from a keyboard input (for example, “Y” or “N”).

Note

The receipts pictured in this section come from a standard System2 FIT. OPT or C/OPT receipts are a little different, and are shown in the C/OPT User’s Guide. Both types are programmed in the same way, however.

Receipts

Receipt Components

See *Figure 10*. A receipt printed by a System2 FIT contains these parts:

- Header
- Body
- Trailer

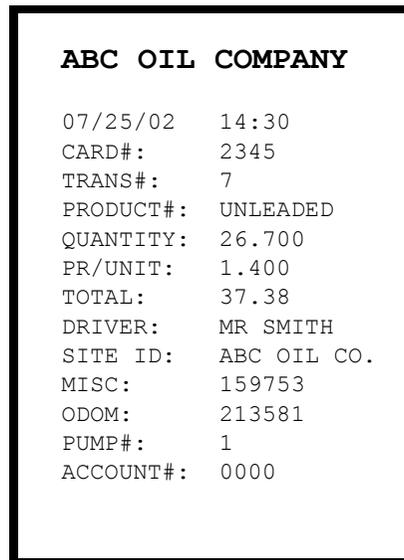


Figure 10: Typical Receipt Layout

Network receipts are explained on *Page 47*.

Receipt Header

Five lines of the receipt are reserved for pre-printed or custom headers. The two topmost lines (“PRE-PRINTED”) cannot be set by you. They are often blank, to act as a separator. One blank line separates header and body. If a large font is used, two of the top four lines are defined. If the smaller type is used (Type #2) TWO (smaller style), all four top lines are used.

Receipt Body

The BODY uses up to 20 lines:

- LINE 1 (the top “header” line) is always blank
- LINES 2-19 18 are programmable by you
- LINE 20 (the bottom “trailer” line) is always blank

Receipt Trailer

The TRAILER uses up to four lines. (in language ONE or TWO, all can be set by you. Network trailers can only be one line.

Receipt Features

- Header and trailer/bonus points messages are printed in expanded format unless you specify otherwise.
- Receipt body fields can be set in any order
- Current date & time are automatically printed on each receipt
- Receipt size is fixed - make sure the programmed number of receipt body lines will fit onto the receipt.

Dual-Language Receipts

If the dual language feature (see *Language* on page 79) is enabled, receipts can be issued in either language.

Modifying the Receipt Body

You can show, print, or format the body.

Note

The receipt body, by default, contains all receipt variable codes. If a code contains no information from a transaction, it does not print. This means you only need to remove the variables that you do not want to print.

1. At the P> prompt type **FORMAT RECEIPT BODY** [ENTER]
 ENTER (Show, Delete, Insert, eXit, Line #):
2. Select a function by entering the capitalized letter; for example, to exit, press the [X] key and then the [ENTER] key:
 - **S** Shows current receipt body
 - **D** Deletes a line from the receipt body
 - **I** Inserts another line into the body
 - **X** Ends this function
 - **Line #** Line number to edit. Label and code items can be modified.
3. Fill in the first 10 characters of a line. This is the label printed for the selected receipt code.

4. Enter a Receipt Code (*Table 6*) to print data from the transaction or card file on the same line.

Table 6: Receipt Variable Codes

Code # and Line #	Variable Transaction Data
1.	Card 1 #
2.	Card 2 #
3.	Transaction Number
4.	Product Name
5.	Quantity Dispensed
6.	Price Per Unit
7.	Total Price
8.	Driver Name
9.	Vehicle Name
10.	Company/Account Name
11.	Site I.D.
12.	Miscellaneous
13.	Odometer
14.	Miles Per Gallon (MPG)
15.	Liters Per 100 Kilometers
16.	Pump Number
17.	Account Number
18.	Batch

Printing Proprietary User Prompts

Along with these standard receipt codes, additional codes 18 (Code “A”) to 37 (Code “T”) for proprietary user prompts are supplied with this software. To have System2 print these proprietary prompts on your receipts, see the network prompt table on *Page 95* and information on Multi-Trucking specific fields in *Figure 39* on *page 92*.

Creating the Receipt Header

You can show, print, or format a header.

1. Type **FORMAT RECEIPT HEADER** [ENTER] at the P> prompt.
2. Enter up to four lines, one at a time. Each line holds up to 11 characters. Text can be red or black.
3. Press [ENTER] between lines.
 - If you don't want to use all four lines, press [ENTER] to skip lines.
 - If Dual Language (see *Language* on page 79) is ON, you'll be prompted for Language 1 or 2. To format bilingual receipt headers, use **FORMAT RECEIPT HEADER** twice.

Creating the Receipt Trailer

The receipt trailer (or footer) is a message that prints at the end of each receipt. The format is the same as for the header.

Creating Receipt Bonus Points

Use the privileged **FORMAT RECEIPT BONUS POINTS** command to define an “alternate message”, one that will print instead of the normal receipt trailer when the Bonus Points feature is enabled. The bonus points receipt format is the same, except you can insert the “#” character, the variable marker for bonus points.

Network Receipts

There are two types of network receipts: *proprietary* (Comdata and Trendar) and *universal* (all other networks). The receipt body of either type of network receipt is preset and cannot be changed. You can, however, customize the two-line receipt header and two-line trailer.

Notes

If you add more than two lines TOTAL to a network receipt's header and/or trailer, lines will be missing from the receipt body.

Prompt information takes priority on receipts: Depending on the quantity of prompts entered, trailer information may be dropped to print the prompt information.

Figure 11 shows a Comdata proprietary receipt. This sample uses all available header and trailer rows.

```
WELCOME TO FUEL-WORLD
AMERICA'S LARGEST!

NETWORK RECEIPT
NO FORMATTING ALLOWED

09/17/00      04:32 PM
SITE ID : FP222
NAME       : PROPRIETARYNET
CARD#      : 1234567890123456
INVOICE    : 00001234
REF.#      : 88880000
PRODUCT    : #2 DIESEL
QUANTITY   : 167.50
PRICE      : $1.679
TOTAL      : 281.23
MILEAGE    : 65421
DRIVER I   : 654321
VEHICLE    : 00005

THANKS FOR STOPPING IN!
```

Figure 11: Comdata Proprietary Receipt

Universal Network Receipts

The number and type of body rows in a universal network receipt depend on the network. Shown next are receipts from networks other than Comdata (Figure 11 on page 48) and Trendar.

Figure 12 shows a universal network receipt. Note that, when all available header and trailer rows are used, there is less room for body rows.

```

TOM'S GAS & STUFF
1234 NOWHERE ROAD

NETWORK INFORMATION 1
NETWORK INFORMATION 2

09/17/00    04:32 PM    ABC TRUCKING
SITE ID:    TGAS222
TRANS #:    10
CARD #:     1002900381147225
AUTH #:     1234567
PUMP #:     1  PRODUCT: #2 DIESEL
QTY:        154.2 GALLONS
MILEAGE:    50923
NET MSG:    APPROVED

THANKS FOR STOPPING IN!
COME BACK SOON.

```

Figure 12: Universal Network Receipt 1

Figure 13 shows another universal network receipt, this one from a network that requires more user prompts than the network represented in *Figure 12*. This results in the need for more rows within the body of the receipt, as shown.

Note how when more prompt rows are required, the room for a trailer shrinks. This receipt can only display one trailer row.

TOM'S GAS & STUFF
1234 NOWHERE ROAD

NETWORK INFORMATION 1
NETWORK INFORMATION 2

09/17/00 04:32 PM
SITE ID : TGAS222
NAME : GASNET
CARD # : 1002900381147225
INVOICE : 33355555
REF # : 87654321
PUMP # : 1
PRODUCT : #2 DIESEL
QUANTITY: 154.2
PRICE : \$1.939
TOTAL : 298.99
MILEAGE : 50923
DRIVER I: 765432
VEHICLE : 12345

THANKS FOR STOPPING IN!

Figure 13: Universal Network Receipt 2

Figure 14 shows yet another universal network receipt. This particular network requires still more user prompts, and therefore uses more rows within the receipt body than either Sample 2 or 3 -- as a result, no trailer can be included in this receipt.

```

TOM'S GAS & STUFF
1234 NOWHERE ROAD

NETWORK INFORMATION 1
NETWORK INFORMATION 2

09/17/00      04:32 PM   ABC TRUCKING
SITE ID: TGAS222
TRANS #: 10
CARD #: 1002900381147225
AUTH #: 1234567
AUTH MSG: FILL `ER UP!
PUMP #: 1   PRODUCT: #2 DIESEL
QTY: 154.2 GALLONS
PRICE: 1.549   TOTAL: 184.2
MILEAGE: 50923
DRIVER ID : TR1234
VEHICLE ID : 321
TRAILER ID : T54321
TRIP#      : SEP51
PURCHASE OR: 444422

```

Figure 14: Universal Network Receipt 3

Note

To remove price and total from the universal receipt see Page 89.

FIT Display Messages

About FIT Messages

The FIT or OPT or C/OPT display guides customers through the fueling process with a series of prompts. Your System2 is pre-programmed with default prompts for certain events.

Your FIT has one of these displays:

- Standard 2x16 display shows two lines of text with up to 16 characters per line.
- Optional graphics display combines a picture with a text prompt.

Type **SHOW SYSTEM** [ENTER] for a status report telling you what type of display is in your System2.

If Dual Language (see *Language* on page 79) is ON, prompts can automatically appear in an alternate language when a card flagged for that language is inserted in the System2 FIT.

Note

*You MUST issue a **DOWNLOAD** command after altering a prompt, in order for it to be visible.*

Default Messages

See *Table 7* for default FIT, OPT or C/OPT messages.

Use the **FORMAT DISPLAY DEFAULT** command to override the physical Display Type DIP switch settings on the PC board. See the *System2 Installation Manual* for more details.

- The messages are Language 1 defaults. Language 2 defaults are all blank.
- When the system is in “Receipts Only” mode, prompts #6 and #7 alternately display when prompting for a receipt.
- Prompts #8 and #9 alternately display while waiting for a customer to activate the system (if #8 and #9 are six characters less than maximum, the current time is also shown).

If changing the default message, remember that only the text is changed, *not* any function. For example, ‘INSERT CARD’ can be changed to ‘PUT IN CARD’ but *not* to ‘ENTER CURRENT TIME’.

Many of the messages in are explained in *Appendix E - Troubleshooting* on page 179.

Table 7: Default Display Messages

Code number	Default FIT, OPT or C/OPT Message
1	SYSTEM OUT OF SERVICE
2	READING CARD
3	REMOVE CARD
4	INCORRECT READING
5	CHECK CARD ORIENTATION

Table 7: Default Display Messages (Continued)

6	INSERT CARD FOR RECEIPT
7	INSERT CARD FOR RECEIPT
8	System2
9	INSERT CARD
10	SYSTEM CLOSED
11	PROCESSING PLEASE WAIT
12	PRINTING RECEIPT
13	TAKE RECEIPT
14	PRINTER ERROR
15	ISSUE RECEIPT?:
16	ENTER PUMP #.}
17	IN USE, RE-ENTER:
18	INVALID, RE-ENTER:
19	PUMP HANDLE? RE-ENTER:
20	FAULTY PUMP, RE-ENTER:
21	UNAUTHORIZED, RE-ENTER:
22	RESTRICTED, RE-ENTER:
23	USE PUMP # [number of gallons]
24	INSERT 2nd CARD
25	INCORRECT CARD
26	ENTER CARD #:
27	ENTER PIN #:
28	ENTER ODOM:
29	ENTER MISC:
30	ENTER 2ND CARD #:
31	RE-ENTER PIN:
32	RE-ENTER ODOM:
33	SORRY NETWORK SYSTEM OFF
34	PROCESSING PLEASE WAIT
35	NOT A NETWORK CARD (<i>change to "NOT IN CARD FILE" in non-network systems</i>)

Table 7: Default Display Messages (Continued)

36	CARD EXPIRED
37	CARD RECORD EXPIRED
38	CARD INVALIDATED
39	3 BAD PIN ENTRIES
40	ALLOCATION EXCEEDED
41	UNABLE TO PROCESS
42	<i>Blank</i>
43	ACCOUNT EXPIRED
44	ACCOUNT INVALIDATED
45	ACCOUNT #S DO NOT MATCH
46	ACCOUNT RECORD NOT FOUND
47	KEYBOARD ENTRY NOT ALLOWED
48	JOURNAL ERR - GET MANAGER
49	SYSTEM BUSY - BUFFER FULL
50	ENTER DESIRED QUANTITY (2-##)
51	RE-ENTER QUANTITY (##)
52	3 BAD PRESET QTY ENTRIES

Standard 2 x 16 Display

After issuing the FORMAT DISPLAY command, enter the number of the display prompt (*Table 7*) to edit.

If Dual Language is enabled, the system asks you to edit the display prompt for two languages. Initially, all first language prompts are in English and all second language prompts are blank.

After entering a prompt number, the current prompt and four vertical lines appear (two for each row of the message). These lines represent the maximum length of the message; the new message must fit under the space between the lines - two rows, each with a maximum of 16 characters.

Upper and lower case letters can be used.

Enter the new prompt and press [ENTER] to complete the entry.

After issuing the FORMAT DISPLAY command, enter the number of the FIT, OPT or C/OPT prompt you want to edit.

After entering a prompt number, the current prompt and two vertical lines appear. Again, the lines are the maximum length of the message; the new prompt must fit under the space between the lines.

Graphics Display (Optional)

If your system has the optional Graphics Display, pictures and text (in multiple styles) can be placed on one or more lines of the display. The current time can also be displayed with any prompt.

Up to 80 characters can be displayed. To combine pictures with text, you add “control characters” (on a computer, CTRL characters display as ^) to text prompts. In addition to defining pictures, these characters also allow you to:

- Position text on the display
- Select a text style
- Show the current time
- Clear the picture from the display.

For graphics pictures see *Page 66*.

Graphic prompts are limited to 80 text characters, each control character is equal to two text characters. Use this prompt as an example:

```
^1^Z ENTER CARD
```

This prompt consumes 18 characters: two for '^1' (the code that displays picture #1), two for '^Z', (the code that selects the font), and twelve for the text ENTER CARD (including three spaces).

If Dual Language is *enabled*, the Graphics Display is limited to 10 prompts of 80 characters. Additional prompts can have 40 characters for each language.

Character Display Commands

1. Enter a FORMAT DISPLAY command.
2. Enter a FIT prompt code ().

After entering the prompt number, the current prompt and two vertical lines appear.

Graphic Display Overview

You can place graphics and text on one or more lines of the display. The current time can also be displayed with any prompt.

Up to 80 characters can be displayed. To combine pictures with text, you add “control characters” (on a computer, CTRL characters display as ^) to text prompts. In addition to defining pictures, these characters also allow you to:

- Position text on the display
- Select a text style
- Show the current time
- Clear the picture from the display.

Sample graphic pictures begin on *Page 59*.

Sample fonts and several examples of prompts with pictures and a list of control characters begin on *Page 66*.

Graphic prompts are limited to 80 text characters, each control character is equal to two text characters. Use the following prompt as an example:

```
  `^1^Z ENTER CARD
```

This prompt consumes 18 characters: two for `^1' (the code that displays picture #1), two for `^Z', (the code that selects the font), and twelve for the text ENTER CARD (including three spaces).

Graphics Display Command Syntax

Editing the text portion of a Graphics Display is like editing a standard one or two line display. After you issue a `FORMAT DISPLAY #` command, enter `prompt #` to edit. The text prompt for editing the Graphics Display is like a double version of the 1 x 40 display. When specifying the display number, you are shown the current prompt and two vertical lines spaced 40 characters apart.

The first 40 characters of the display prompt are shown on one line, in the space underneath the two vertical lines; the second 40 characters of the prompt (if applicable) are shown on a second line.

Enter the new prompt and press ENTER to complete the entry for the first line. Enter a second line for the prompt if desired. To format another, reenter the command.

Graphics Display Picture Selection

Pictures are defined within the text prompt. To associate a picture with a display prompt, simply add the control character for that picture to the display prompt text.

Place the picture control character before the prompt text. Only one picture can be connected to a message but you can tie the same picture to as many display prompts as desired.

Picture control codes, and FIT prompts typically attached to each picture, are shown on *Page 56*.

Graphics Display Text Position

To specify where on the display your text will go, insert one or more “position codes” in your prompt. There are 12 “lines” on the display; each of the 12 lines has a position code (*Table 8 on page 65*).

The position code must be a CAPITAL letter and must be placed before the text. For example:

```
^C THIS IS ON LINE THREE
```

The ^C in the above prompt specifies the text will appear on line three. If no position control character is specified, the text begins on the first (top) line of the display.

Graphics Display Font Selection

Your text messages can be displayed in one of the typesets (shown on *Page 64*) listed below. The control character that defines the font is shown below as well:

- Serif, 20 characters per line (^Z)
- Sans-serif, 20 characters per line, Standard set (^Y)
- Sans-serif, 20 characters per line, International set (^X)
- Serif, 40 characters per line (^V).

Serifs are the small “tails” on type. The first character below is a serif type-style, while the second is sans-serif:

```
T T
```

All typestyles use fixed-width characters (in other words, an “l” takes up as much room as a “W”).

Note

Only one typestyle can be used per message.

If you do not specify a style, the last style you specified is used. If you do not specify any styles for any prompts, Style 1 is used.

Time of Day in a Graphics Display

To show current time in a prompt, insert control character '^T' at the end of any display prompt. The time is always displayed in the top right corner of the display. It appears in the current typeface.

Inverting the Graphics Screen

FIT VERSION 1.01: Use ^M to invert the image on the graphics screen (white becomes black, and black becomes white). Use ^N to restore the display to normal. FIT VERSION 1.02A OR HIGHER: Use ^P to invert the image on the graphics screen (white becomes black, and black becomes white). Use ^Q to restore the display to normal.

Clearing the Graphics Screen

Insert '^0' (control zero) before the prompt text to clear the screen before displaying a prompt. This command is typically used with two-part messages; insert the command after the first part of the message to “erase” the screen for the second part.

A Graphics Display picture remains on the screen until one of the following occurs:

1. Another FIT prompt with a picture is displayed OR...
2. A FIT prompt with the “clear screen” control code is displayed.

Cleaning the Screen

The Graphics Display has a thin anti-glare coating. DO NOT use harsh detergents or any petroleum-based solvents to clean the display!

Use a cleaner safe for eyeglasses -- a cleaner like Diamond Glaze Anti-Reflective Cleaner. Visit www.diamondglaze.com for more information.

Generally, any cleaning product you find in eyeglass stores or optometry clinics is safe for use on LCD displays.

Sample Graphic Display Prompts

The number in the caption (in parenthesis) is the control code to use in the FORMAT DISPLAY command.

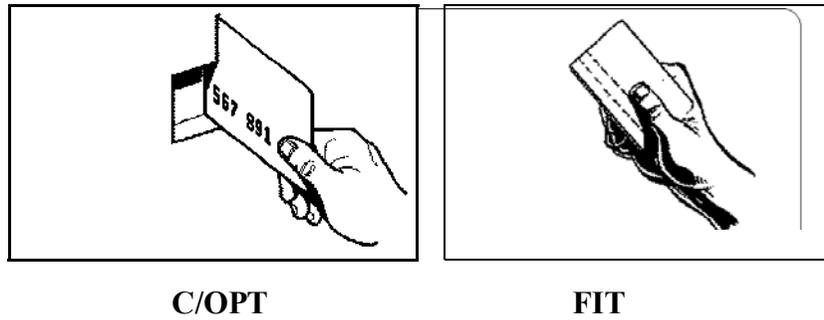


Figure 15: Display Graphic -- Insert Magcard With Stripe to Left (^1)

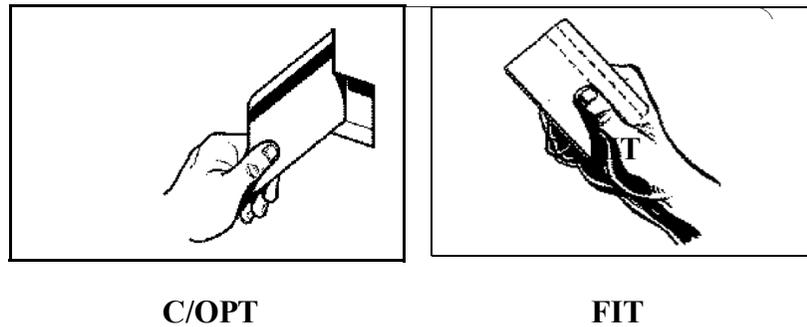


Figure 16: Display Graphic -- Insert Magcard with Stripe to Right" (^2)

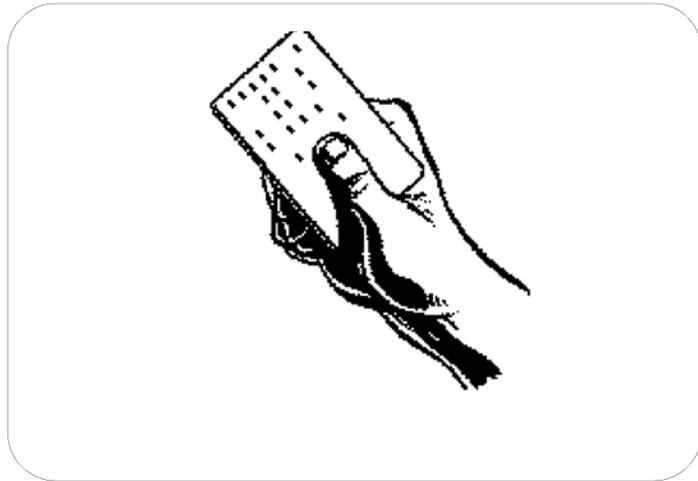


Figure 17: Display Graphic -- "Insert Optical Card" (^3)

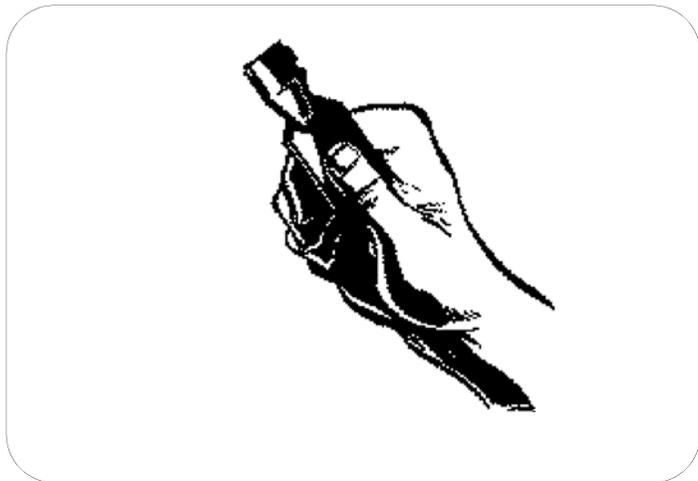


Figure 18: Display Graphic -- "Insert ChipKey" (^4)

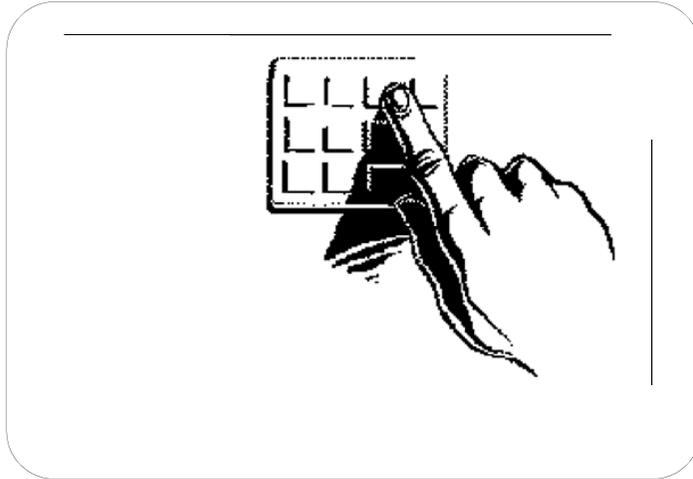


Figure 19: Display Graphic -- "Enter Card Number on Keypad" (^5)

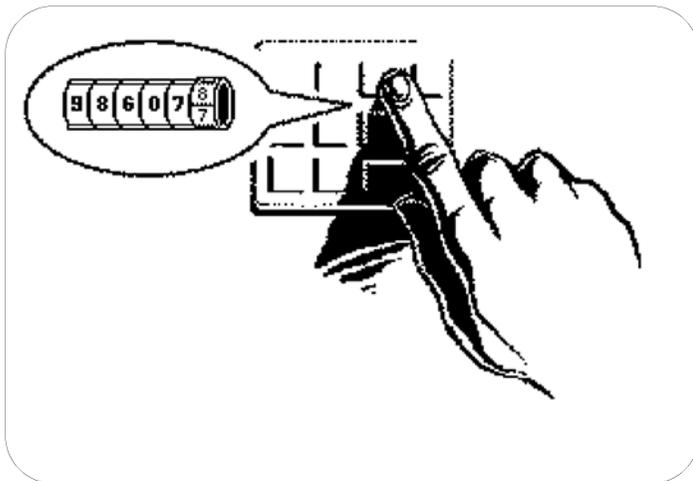


Figure 20: Display Graphic -- "Enter Odometer Reading" (^6)

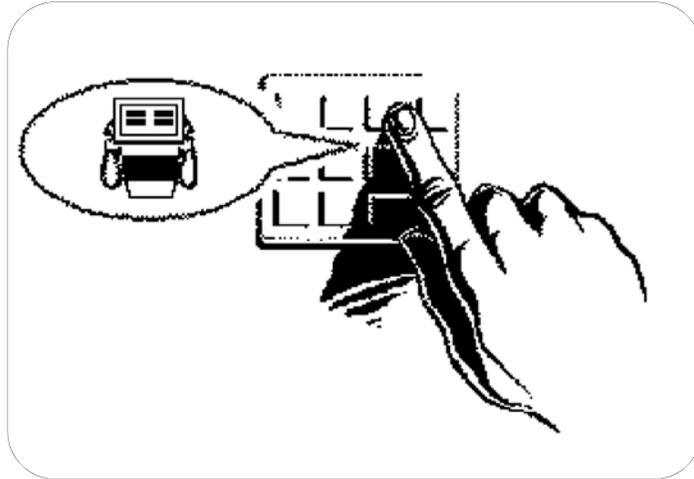


Figure 21: Display Graphic -- "Select a Pump" (^7)



Figure 22: Display Graphic -- "Take Receipt" (^8)

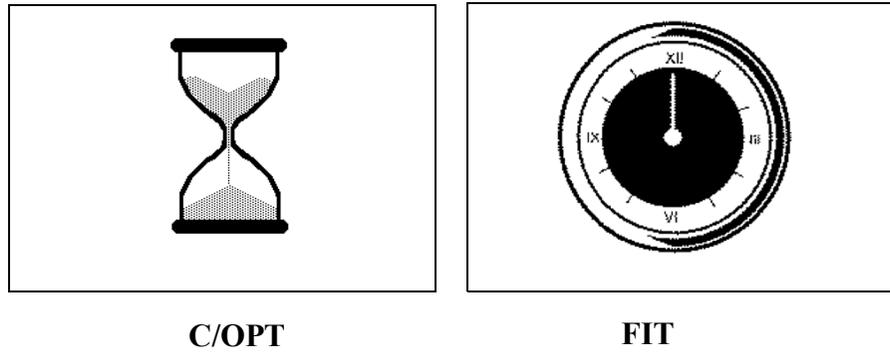


Figure 23: Display Graphic -- "Please Wait" (^9)

Graphics Display Typesets & Position Codes

The following screens show the available typestyles, with their matching control code. Up to 12 lines of text can be displayed for each typestyle. Position control codes (^A through ^L in FIT version 1.01, ^A through ^O in FIT 1.02A and over) specify where on the display the line of text appears; codes apply to all typestyles. For example, to have the prompt INSERT CARD appear at the bottom of the display (perhaps under a picture), enter: ^LINSERT CARD.

```
!#$%&()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ
```

Figure 24: FIT Font Style CTRL V -- Small Sans-Serif

```
!#$%&()*+,-./012345
6789:;<=>?@ABCDEFGHIJ
KLMNOPQRSTUVWXYZ[\]^
_ " ' ;
```

Figure 25: FIT Font Style CTRL Y -- Large Serif

```
!#$%&()*+,-./012345
6789:;<=>?@ABCDEFGHIJ
KLMNOPQRSTUVWXYZ[\]^
_ " ' ;
```

Figure 26: FIT Font CTRL Z -- Large Sans Serif

```
!#$%&íú*+,-./012345
6789:ñ=ö?üABCDEFGHIJ
KLMNOPQRSTUVWXYZäËî
Éçáó
```

Figure 27: FIT Font CTRL X - Large International

Graphic Display Control Codes

Table 8: FIT Display Screen Control Codes

CODE	FIT 1.01	FIT 1.02A or over
^A	Position on Line 1	Position on Line 1
^B	Position on Line 2	Position on Line 2
^C	Position on Line 3	Position on Line 3
^D	Position on Line 4	Position on Line 4
^E	Position on Line 5	Position on Line 5
^F	Position on Line 6	Position on Line 6
^G	Position on Line 7	Position on Line 7
^H	Position on Line 8	Position on Line 8
^I	Position on Line 9	Position on Line 9
^J	Position on Line 10	Position on Line 10
^K	Position on Line 11	Position on Line 11
^L	Position on Line 12	Position on Line 12
^M	Invert graphics display	Position on Line 13
^N	Restore graphics display	Position on Line 14
^O	n/a	Position on Line 15
^P	n/a	Invert graphics display
^Q	n/a	Restore graphics display
^T	Insert Current Time	Insert Current Time
^V	Small Sans-Serif Font	Small Sans-Serif Font
^X	Large Sans-Serif Font, Int'l	Large Sans-Serif Font, Int'l
^Y	Large Serif Font	Large Serif Font
^Z	Large Sans-Serif Font, Std.	Large Sans-Serif Font, Std.
^0 (zero)	Clear Screen	Clear Screen

Graphic Display Examples

The characters in the caption (in parenthesis) are the control codes to use in the FORMAT DISPLAY command to create the image shown.

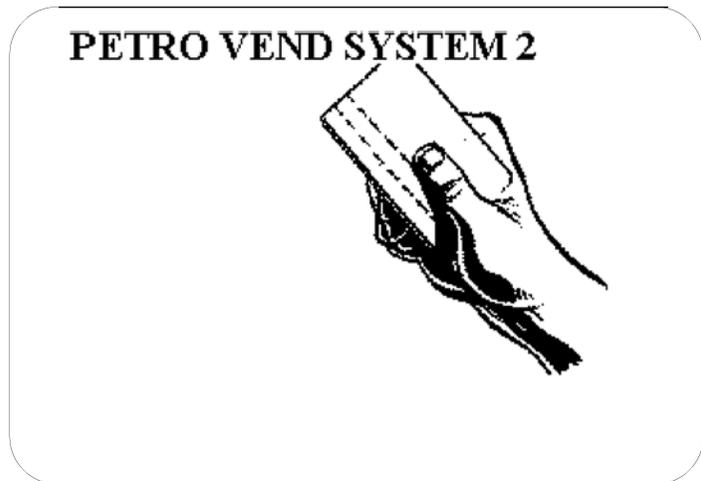


Figure 28: FIT Graphic Sample -- "Petro Vend System2" (^1^Y^A)



Figure 29: FIT Graphic Sample -- "Insert ChipKey" (^4^Y^A)

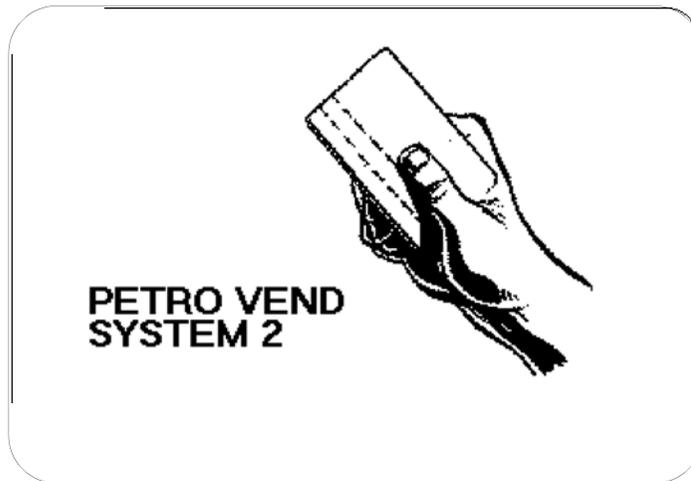


Figure 30: FIT Graphic Sample -- "Petro Vend System2" (^1^Z^I)

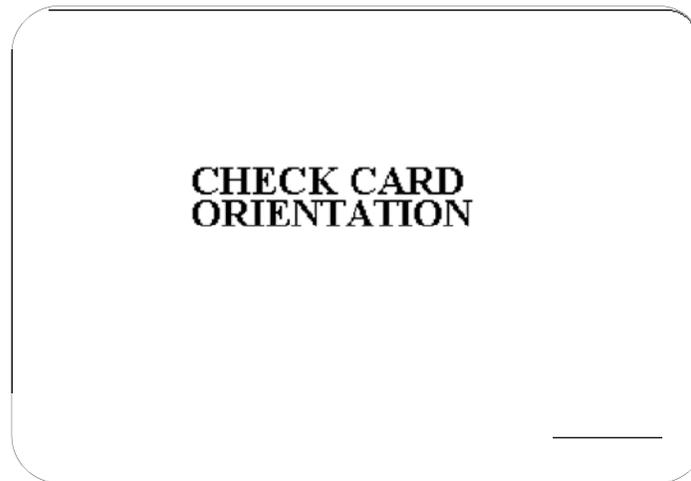


Figure 31: FIT Graphic Sample -- "Check Card Orientation" (^0^Y^E)

Keyboard YES or NO Commands

The **FORMAT KEYBOARD #** command changes the response that the customer sees when pressing the [YES] and [NO] keys. The response up to eight characters. The actual function of the two keys cannot be changed.

The default response is the key's label - "YES" or "NO". To change the [NO] key's response, enter 1 when prompted for KEYBOARD NUMBER.

To change the [YES] key's response, enter 2 when prompted for a keyboard number. Enter a DOWNLOAD command to enable your changes.

Messaging

The **FORMAT MESSAGE** command ties specific messages to a particular card. For example, a “Welcome” message could appear for new members, or “Just a Reminder” could be displayed to check the oil.

Before using the Messaging feature, you **MUST** use the **SET CARD** command (*Page 109*) to format memory space for messaging. When a message appears, customers must acknowledge it by pressing any key on the keypad. The response is not saved; it is used only to continue the transaction.

If your system has the receipt printer, the message can be printed on the receipt as well. Each message has these programmable parts:

- **Identifier:** Card Number (up to 19 digits).
- **Message:** the message itself can contain numbers, letters and most punctuation (such as `!`, `?`, `#`, etc.). The length limit depends on the display you have: two lines of 16 characters, or two lines of 40 characters.
- **Term** - when to stop displaying a message:
- **Duration** - the number of days to display the message, from 0 (always displayed) to 99. Each message record also contains the days remaining until message stops, and how many times the message has appeared
- **Expiration Date** - the last day to display the message (format=`mmm dd, yyyy')
- **Auto-Delete** - if enabled, automatically removes the message from the data buffer when display term is over
- **Receipt** - prints the displayed message on the receipt.

The card must be created before you can program a message for it.

1. The first prompt you see after issuing a FORMAT MESSAGE command is:

```
ENTER (Edit, Show, Delete, eXit, [return]
Card #):
```

- **Edit.** Display and modify all messages of a type - Single, Driver, Vehicle.
- **Show.** Displays all the message records for a selected type
- **Delete.** Remove a message. Enter identifier to select a message to delete, or enter `ALL' to delete all messages
- **eXit.** Return to the previous menu.
- **Card #.** Press ENTER to toggle between the `Card #' and `Acct #' prompts, then enter the number, followed by the message.

2. After selecting Edit, Show, or Delete, the following prompt appears:

```
SELECT TYPE (Single, Driver Vehicle)
```

Enter the first letter of the message type, followed by ENTER, as follows:

- (S) Display all Single messages.
- (D) Display all Driver messages.
- (V) Display all Vehicle messages.

(X) Ends the command. After entering a message type, the format information and number of times each message has been shown (`Dis') are displayed. For example,

```
***** SINGLE CARD MESSAGES *****
Single #1000      Exp. Date: FEB 13,2001 Days: |
| Dis: 1 Auto-Del: OFF Rec: ON
Call office immediately!

Single #2000      Exp. Date: FEB 15,2001 Days: 1
|              | Dis: 0 Auto-Del: ON Rec: ON
Happy Birthday to You!

Single #3000      Exp. Date: FEB 24,2001 Days: 7
|              | Dis: 0 Auto-Del: OFF Rec: ON
Please check trans oil
```

Next, the display changes to the “two vertical lines” prompt, and existing message.

Note

The message must fit in the space under the two vertical lines. The entry is “case-sensitive;” that is, upper and lower case letters are distinguished.

3. After entering a message, you'll see:

```
MESSAGE EXPIRE OPTIONS (Y/N)?:
```

If you want to change the expiration date or duration of the message, press (Y). If not, just press ENTER. If you press (Y), you are prompted:

```
ENTER (Duration or Exp. Date): NONE Days:** (Y/N)?:
```

Enter either a duration (0 - 99) or an expiration date ('mmm dd, yyyy') for the message. If duration is specified, an expiration date is also calculated and displayed. Press (Y) to complete the entry.

4. Answer the next prompt, which is:

```
AUTO DELETE OPTION (Y/N)?
```

Press (Y) for automatic message deletion when duration is up. You will have a confirmation prompt if you answer (Y).

5. The next prompt is:

```
RECEIPT OPTION (Y/N)?
```

Press (Y) to change the status. If you press (Y), you are prompted:

```
PRINT MSG ON RCPT (Y/N)?
```

Press (Y) to put the message on the optional receipt. This concludes the message entry.

Format Date

The FORMAT DATE command displays the following prompt:

```
ENTER (Show, Order, sEparator, eXit, Month #):
```

Press the upper-case letter in the following command words to activate the command:

- **Show.** Displays current data.
- **Order.** Two “orders” are available, each associated with a code number: (1) “month day year” and (2) “day month year”). Choose between day first (24 JAN, 2000) or month first (JAN 24, 2000) for the date order. You are prompted:

DATE ORDER CODE: enter `1' for month first or
`2' for day first

- **sEparator** Select the two field separator characters
- **eXit** Returns you to the previous menu
- **month #** Changes the label(s) for the selected month (*Table 9*). The default date month labels are in *Table 9*.

Table 9: Default Month Labels

Enter This Month #	Language 1 Displays as:	Language 2 Displays as:
1	JAN	01
2	FEB	02
3	MAR	03
4	APR	04
5	MAY	05
6	JUN	06
7	JUL	07
8	AUG	08
9	SEP	09
10	OCT	10
11	NOV	11
12	DEC	12

System Parameters

```

SYSTEM PARAMETERS          **PRIVILEGED**
-----
A: SHOW                    A: SYSTEM
B: PRINT                   B: SITE ID
C: SET                     C: FUELTYPE (#)
                           D: FUELING UNITS
                           E: PASSWORD
                           F: BYPASS
                           G: MENU
                           H: ECHO
                           I: BONUS POINTS
                           J: RAM
                           K: VERSION
                           L: NETWORK
                           M: FLEET
                           N: PROMPTS
                           O: TAX

```

Figure 32: System Parameters Menu

*From the Main Menu press **E***

System

The **SHOW SYSTEM** or **PRINT SYSTEM** command displays the following current system information (this is a read-only function; SET SYSTEM is not applicable):

- **FSC Software Version** - for example, 33.11A.
- **Checksums** - Results of an FSC program check. Typically, a number such as 8A49.
- **Display Type** (See *Customer Messages* on page 43)
 - 2 X 16: 2 lines with 16 characters each
 - Graphics
- **Date and Time** - As set through the System Time screen (See *System Times* on page 20)
- **System State** - ON, OFF or RECEIPTS ONLY (See *Setting System2 ON and OFF Times* on page 30)
- **Installed FITs** - See *FIT Commands* on page 33
- **FIT State** - RUNNING or DOWN (See *FIT Commands* on page 33)

- **Number of receipts issued** to date per FIT.
- **Receipt Printer Errors** - paper jams, paper outs, etc.
- **Installed PCTs** - See *PCT Commands* on **page 36**
- **Installed Positions** - See *PCT POSITION Commands* on **page 38**
- **OSP Status** - see OSP on *Page 41*.
- **Pump Sentry Alarm** - a position number in (parentheses) is a pump put out of service by the system.
- **Low Tanks** - These are tanks that fell below their programmed low levels. **Power Failures** - Dates and times of the last four power failures.

Site ID

Use SET SITE to enter a 12-character code to give a site a unique name. The system defaults a site “name” of xxxxxxxxxxxxxx. The ID is used by an external PC during backups and restores. It can also be printed on receipts.

Note

The Site ID must contain exactly 12 characters. Spaces can be used but NOT as the first character.

Fuel Type

You can define up to 32 products in System2. You can set each product’s unit of measure, price per unit and name.

Each product has a code number. The code is assigned to a pump hose during PCT configuration (See *CONFIG PCT Command* on page 37).

Figure 33 lists defaults. Each product has a default “price-per-unit” of \$1.00 and a default network product code shown in the TRE (Trendar),

COM (Comdata), FMGC (Fuelman/Gascard), QFN (Quarles Fuel Network) or UNI (universal) columns.

#	Name	Units	Price	TRE	COM	UNI	FMGC	QFN	FL1
1	UNLEADED	GALLONS	1.000	GUS	0	051	002	12	41
2	PREMIUM	GALLONS	1.000	GPS	0	053	004	09	42
3	SUPER	GALLONS	1.000	GSS	0	055	003	10	43
4	SPEC BULK	GALLONS	1.000	MSC	0	017	N/A	NA	-
5	#1 DIESEL	GALLONS	1.000	D1S	1	010	030	03	31
6	#2 DIESEL	GALLONS	1.000	D2S	2	001	005	06	12
7	#1DIES BLK	GALLONS	1.000	MSC	0	013	N/A	NA	-
8	KERO BULK	GALLONS	1.000	MSC	0	049	N/A	NA	-
9	#2DIES BLK	GALLONS	1.000	MSC	0	004	N/A	NA	-
10	UNLEAD BLK	GALLONS	1.000	LPG	0	052	N/A	NA	-
11	LUBE OIL1	GALLONS	1.000	OIL	3	071	045	11	-
12	LUBE OIL2	GALLONS	1.000	LUB	3	072	822	NA	-
13	TRANS OIL	GALLONS	1.000	MSC	3	075	808	NA	-
14	COOLANT	GALLONS	1.000	AFR	0	076	605	14	-
15	SUPER BULK	GALLONS	1.000	MSC	0	056	N/A	15	-
16	PROPANE	GALLONS	1.000	MSC	0	080	039	NA	-
17	WINTERDIES	GALLONS	1.000	MSC	0	000	N/A	NA	30
18	REEFER	GALLONS	1.000	MSC	0	000	N/A	NA	14
19	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
20	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
21	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
22	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
23	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
24	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
25	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
26	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
27	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
28	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
29	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
30	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
31	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-
32	EXTRA	GALLONS	1.000	MSC	0	000	N/A	NA	-

Figure 33: Fuel Types Table for Multi-Trucking Network Software

When using the Trendar FDIS network, assign PRODUCT #6 to pumps used for Trendar authorization. The Trendar network expects only this code. Authorization will fail if it is not used.

To change a fuel type:

1. Issue the SET FUELTYPE command. The first prompt is:
ENTER (fuel table row# (1-16) or [RETURN] to exit

Note

Row Number is Product Number.

To change a value in the table, enter the number of the product to change. Trendar, Fuelman/Gascard and universal network types. To retain a value, press [RETURN] or [ENTER].

:

FDIS PRODUCT CODES			
Product	Code	Product	Code
Additives	ADT	Minor Parts	MIP
Anti-Freeze	AFR	Minor Repairs	MIR
Cash Advance	CSH	Miscellaneous	MSC
Diesel 1 Full	D1F	Motel	MTL
Diesel 1 Mini	D1M	Oil Gallon	OIL
Diesel 1 Self	D1S	Oil Case	OCS
Diesel 2 Full	D2F	Oil Change	OCH
Diesel 2 Mini	D2M	Permits	PMT
Diesel 2 Self	D2S	Road Service	RDS
Inspection	DOT	Reefer 1 Full	R1F
Driver Expenses	DEX	Reefer 1 Mini	R1M
Gas Regular Full	GRF	Reefer 1 Self	R1S
Gas Regular Mini	GRM	Reefer 2 Full	R2F
Gas Regular Self	GRS	Reefer 2 Mini	R2M
Gas Premium Full	GPF	Reefer 2 Self	R2S
Gas Premium Mini	GPM	Scales	SCL
Gas Premium Self	GPS	Store Items	STR
Gas Unleaded Full	GUF	Towing	TOW
Gas Unleaded Mini	GUM	Tire Purchase	TRP
Gas Unleaded Self	GUS	Tire Repair	TRR
Ice	ICE	Trailer Wash	TLW
Labor	LBR	Truck Wash	TRW
Liquid Propane Gas	LPG	Tube	TTB
Lube	LUB	Winter Charges	WCH
Meals	MEL	Winter Diesel	WDL

Figure 34: Product Codes for Trendar Fuel Network

Caution

Do not change network product codes unless instructed to do so by your network rep or OPW personnel.

FUELMAN/GASCARD FUEL PRODUCT CODES		
Product	Code	Comments
Regular Leaded	001	
Unleaded	002	Use as lowest octane when 3 or fewer unleaded grades are sold. Use as 87 octane when more than 3 grades are sold.
Premium Unleaded	003	Use as highest octane when 2 or 3 unleaded grades are sold. Use as 91 octane when more than 3 grades are sold.
Unleaded Plus	004	Use as mid-grade when 3 unleaded grades are sold. Use as 89 octane when more than 3 grades are sold.
Diesel #2	005	
Methanol M-85	015	
Compressed Natural Gas	016	
Clear Off-Road Diesel	028	Off-road diesel, not subject to tax
Diesel #1	030	
Winterized Diesel	033	
Diesel Premium	034	
Hi Sulfur Diesel	035	Dyed fuel, not subject to tax (Blue)
Low Sulfur Diesel	036	Dyed fuel, not subject to tax (Red)
Liquid Propane	039	
Unleaded 82	082	82 Octane. Use when more than 3 unleaded grades are sold. (2)
Unleaded 86	086	86 Octane. Use when more than 3 unleaded grades are sold. (2)
Unleaded 88	088	88 Octane. Use when more than 3 unleaded grades are sold. (4)
Unleaded 90	090	90 Octane. Use when more than 3 unleaded grades are sold. (3)
Unleaded 92	092	92 Octane. Use when more than 3 unleaded grades are sold. (3)
Unleaded 93	093	93 Octane. Use when more than 3 unleaded grades are sold. (3)
Unleaded 94	094	94 Octane. Use when more than 3 unleaded grades are sold. (3)
Unleaded 95	095	95 Octane. Use when more than 3 unleaded grades are sold. (3)

FUELMAN/GASCARD NON-FUEL PRODUCT CODES		
Non-Fuel Product	Category	Code
FUELMAN/GASCARD NON-PRODUCT CODES		
Sales Tax on Non-Fuel	Tax	099
Car Wash	TBA	220
Antifreeze	TBA	605
Brake Fluid	TBA	804
Power Steering Fluid	TBA	805
Windshield Washer Fluid	TBA	807
Transmission Fluid	TBA	808
Oil By The Quart	Oil	819
Oil By The Gallon	Oil	822
Gas Antifreeze	TBA	823
Gas Additive	TBA	825
Diesel Additive	TBA	826

Figure 35: Fuelman/Gascard Fuel Product Codes

- Figure 34 shows network product codes you enter into the TRE (Trendar FDIS) column. Finally...after entering fuel type information, you are asked if tax is included in the price per unit. Answer Y or N as appropriate. This response applies to all 32 fuel type prices.

Note

This step does NOT affect the FDIS or Comdata networks.

Fueling Units

You can associate one of three units of measure to your product types. These are simply labels - no conversion is done.

The default labels, and their codes are:

(1) gallon (2) liter (3) quart

You type in the code number (1, 2, or 3) at the FUELING UNIT CODES prompt during the **SET FUELTYPES** procedure (See *Fuel Type* on page 74)

To change unit labels:

1. Type **SET FUELING UNITS** [ENTER].

ENTER FUELING UNIT 1:

ENTER FUELING UNIT 2:

ENTER FUELING UNIT 3:

- *To leave a unit label unchanged, press [ENTER].*
2. Enter a label of up to 10 characters, and press [ENTER].

Password

Note

If all you see is a dollar sign prompt (\$), Restricted mode is ON. To turn this mode OFF, use the SET PASSWORD command in privileged mode to turn it OFF.

The **SET PASSWORD** command lets you change the Privileged, Restricted and Modem passwords. It also enables or disables the Restricted mode.

System2 ships from the factory with all passwords set as **HELLO**

, and the Restricted mode OFF.

Note

Although we suggest you set your own, the default passwords do not have to be changed, or the Restricted mode enabled, for System2 to operate.

To change any or all passwords:

1. Type **SET PASSWORD** [ENTER].

ENTER PRIVILEGED PASSWORD:

2. Enter up to six characters or press [ENTER] to retain the old password. There is no difference between upper and lower case letters.

ENTER MODEM PASSWORD:

3. The modem password is what a remote user must enter when dialing into System2. Enter a new Modem password or press [ENTER] to retain the old password and move to the next prompt.

`SHOW' PASSWORD OPTIONS (Y/N)?

- *The “SHOW” password is the same as Restricted password.*
4. If you don't want to use the Restricted mode, press [ENTER] to skip. If you press [Y]:

ENABLE SHOW PASSWORD (Y/N)?

5. Press [Y] or [N]. If you enter [Y], you are prompted to enter a new show password.

Language

The Dual Language feature allows System2 to be “bi-lingual” to a certain degree - to display or print two different languages.

1. Type **SET LANGUAGE** to turn the Dual Language ON or OFF. Answer [Y] or [N] to the `ENABLE DUAL LANGUAGE (Y/N)` prompt.
2. Press [ENTER].

A Language Type is programmed into all cards. When the card is read, the FIT display language changes to the programmed language. Some receipts can also be programmed to print out in the specified language.

To program “bilingual” cards, use the **SET CARD** command (*Page 109*).

Note

Some prompts should not be defined for second language. This includes any prompt that appears before a card or key is inserted (like the instruction to insert the card).

Menus

The **SET MENU** command turns System2 menus ON or OFF. When menus are OFF, “line commands” must be entered at the prompts (>, P>.).

This manual is arranged by menus.

When you use line commands, type the command as it appears on the menu. For example, for Menu ON/OFF, the word “SET” is on the left and “MENU” is on the right. Put them together and you have **SET MENU**.

- *Menus are OFF by default.*

Echo

While you program the FSC, the FSC sends back (echoes) every character it receives from the terminal you are typing in your commands. The Echo function must be ON for you to see characters as you type them.

The only time you need to disable the echo is when tie System2 to an external computer.

Type **SET ECHO** to toggle the echo.

Bonus Points

Use Bonus Points for a site loyalty program, if desired.

The **SET BONUS POINTS** command lets you specify a “coupon” value based on fuel dispensed. For example, you can specify one point for each 100 cents worth fuel dispensed. Then, when a customer pumps \$20 worth of gas, a message like “YOU’VE EARNED 20 POINTS TODAY!” would be printed on the customers’ receipt.

Or, bonus points can be awarded to customers as credit toward using a site’s car wash.

RAM

When configuring your System2 for the first time, you must define the memory size with the **SET RAM** command.

Card and transaction records are stored in RAM chips on the FSC board. The number of chips in your FSC depends on the amount of RAM you ordered.

1. Type **SET RAM** [ENTER].
2. Find your memory level in *Table 10*.

3. Enter the code appropriate for your system.

Table 10: Memory Level Codes

Enter Code:	For Memory Level	Amount of RAM
0	1 (Standard)	256 Kb
1	2 (Optional)	512 Kb
3	3 (Optional)	1 Mb
4	4 (Optional)	2 Mb

- Press [ENTER] to keep the current code.

You cannot enter a memory code if there isn't sufficient RAM in the system (for example, you cannot enter "2" if you only have 512 KB of memory).

Privileged mode is lost if the system rejects a RAM entry; the password must be re-entered. If you don't know the RAM size, you can determine it by trial and error. Start by entering **4** and continue on down until System2 accepts the entry.

Version

The SHOW or PRINT VERSION command displays the current software version (for example, 38.51F). This information is also included in the Show System display (Option A in System Parameters).

This is a read-only function: there is no SET VERSION command.

Network

Use the SET NETWORK command to:

- Program network-specific information!
- Configure the fleet table!
- Set and test communication parameters!
- Set force transaction capture time!
- Force network captures for test purposes!
- Turn printing of price and total ON or OFF on network receipts!
- Configure universal networks to use a Lantronix device server instead of a modem!

Network

Execute SET NETWORK to display the NETWORK CHOICES menu.

```
NETWORK CHOICES

1 - Comdata
2 - TCH
3 - Paymentech

8 - Set Time Zone
9 - Set Fleet Table
10 - Perform Communication Test
11 - Set Forced Transaction Capture Time
12 - Force Transaction Capture
13 - Print Price and Total on Network Receipts: yes
14 - Device Server Used in Place of Modem: Yes
15 - Petro Vend MODEM in use: (old 2400 or new 33.6)

Enter option number or press [RETURN] to exit
```

Figure 36: Network Choices Menu

Note

To configure a network, select the associated option (1-7) to open a network specific menu with the following:

SITE ID

The SITE ID is a network-assigned code identifying the device that is sending authorizations and captures. SITE ID must be set before fueling is allowed. Contact someone from the network, if needed. Enter the location code or press [ENTER].

SITE NAME, CITY & STATE

This site information is used for authorization and post-authorization messages.

REDIAL ATTEMPTS

Tells the system how many times to try calling the programmed primary and secondary phone numbers, if connection is not established on the first attempt. If the network can not be contacted, the system checks to determine if local authorization is allowed. Local authorization is explained later in this section.

CONNECT TIME (SECONDS)

This is the maximum time (in seconds) the system tries to: (a) dial the network (using the primary or secondary phone numbers), (b) for the network to answer, and © for carrier detection. Default is 30 seconds.

If changing connect time, remember that a long distance call takes longer to place than a local call. Enter a value, or press [ENTER] to exit.

LOCAL AUTHORIZATION

Consult your network specifics before enabling this feature. Some networks do not allow local authorization. If you enable local authorization and it is not permitted, the network will not accept the capture. This means you must manually collect the payment.

Local Authorization has three modes: NONE, LIMITED and UNLIMITED.

MODE 1 - NO Local Authorization (Local Authorization = DISABLED)

This is default. This mode does not allow Local Authorizations when System2 is not connected to the network. To disable local authorization answer N to the ENTER LOCAL AUTHORIZATION (Y/N)? prompt?

MODE 2 - LIMITED Local Authorization

This mode limits the number of local offline authorizations, and the time available to perform local authorizations.

Example

If the number of transactions is set to five, and the duration set to 25, an offline System2 will authorize up to five network cards within 25 minutes. If either the number or duration exceeds its limit, local authorization will not occur again until System2 reconnects to the network. Once reconnected, the number and duration values are reset and local authorization is again available.

To Enable Limited Authorization:

1. Answer Y to the ENTER LOCAL AUTHORIZATION (Y/N)? prompt. Two new fields - Number and Duration - appear. The programmed duration is in minutes.
2. Enter the number and duration; the default value for both parameters is one.

When you display these values, both the programmed and “active” values are given. Active values are the programmed values minus the number and duration of authorizations already performed. The active duration is in seconds.

MODE 3 - Unlimited Local Authorization

This mode permits an unlimited number of local authorizations to occur during an unlimited period of time. To enable Mode 3:

1. Enter Y at the ENTER LOCAL AUTHORIZATION (Y/N)? prompt.
2. Enter 0 for number.

After enabling a mode, the system prompts you with:

ENTER ALLOWED KEYED CARDS (Y/N)?

Answering Y tells the system to allow “keyed cards” when local authorization is active.

NETWORK SYSTEM:

NETWORK SYSTEM sets ON and OFF times for network availability. Enter values in twelve-hour (AM/PM) format as hh:mm am/pm. For example: 5:00 AM. To disable the NETWORK SYSTEM option, enter the same time for ON and OFF.

AUTHORIZATION MESSAGE:

If an authorization message is not received from the host, this message is displayed just before the USE PUMP prompt. Enter up to 20 characters for the message.

RE-PROMPT TIME (MINUTES)

How long the System2 will look back for a previous transaction with the same card number. If found, pre-programmed responses from the old transaction can be duplicated in the current transaction. Enter 0-99 minutes. 0 = no limit. The default is 10 minutes. This feature comes in handy for responses which fail authorization, or additional transactions that occur after the initial transaction.

COMMUNICATION PARAMETERS

There are seven network parameters. In the sample menu of , “1200” is the baud rate, “7” is the word size, “E” is even parity, “1” is one stop bit, “T” is tone dialing, “75” is tone duration in milliseconds, “Y” is YES, there is a dial tone.

Set Communication Parameters

Note

SET COMMUNICATION PARAMETERS does not attempt accessing the modem until you exit the option. If the modem is unavailable for the countdown, option is exited and modem remains unconfigured.

Enter [11] from the NETWORK OPTIONS SETTINGS menu to display a menu of communication parameters. Be sure your modem is ON and connected to AUX3 on the FSC. The following are adjustable:

1. DIAL MODE: TONE (default) or PULSE.
2. TONE DURATION: (TONE DIAL ONLY). The time in milliseconds between tone pulses, from 1 to 99. Default is 75. Increase the time for slower phone systems.
3. DIAL TONE: Either YES or NO to wait for dial tone before dialing. Default is YES.
4. BAUD RATE: 300, 1200 or 2400 BPS. Enter 0 for 300, 1 for 1200 baud, or 2 for 2400 baud. Default is 1,200. Check that all network nodes support the selected baud rate.
5. DATA BITS. The “word size” of data: Enter 0 for 7-bit (default) or 1 for 8-bit data.
6. PARITY. Error-checking mode: Enter 0 for NONE, 1 for ODD or 2 for EVEN parity.
7. STOP BITS. Data bits signifying end of word: Enter 0 for 2 stop bits or enter 1 for 1 bit.

Options 4-7 are network-dependent. Consult literature on the particular network for more information. When you exit, System2 reconfigures the modem (if ON and connected) and the AUX3 communication port.

MANUAL ENTRY PRE-STRING

For Fuelman Gascard users this option lets you enter up to an 11-digit pre-card string (13 digit for K800) which is appended preceding the keyboard entered card #. The combined string is then tested to determine if it creates a valid Fuelman/Gascard card number. If so, it is processed normally.

After setting network-specific options (1-7), the following options are global to all networks enabled.

Note

Depending on the network you’re configuring, additional options not shown here may exist.

After setting network-specific options (1-7), the following options are global to all networks enabled.

8 - Set Time Zone

This option allows you to set the time zone related information. This allows the network to adjust date/time information as needed based on the location of the site. Currently, only NBS networks require time zone configuration.

```
Current Time Zone: Central
Deviation from "on-the-hour" in minutes: 00
Daylight Savings Time is Observed: Yes
```

Some localities observe "fractional" time zones: For example, while the surrounding zone sees time as 2:00, a locality sees 2:30 instead.

```
Select The Time Zone To Use:
1 - Atlantic
2 - Eastern
3 - Central
4 - Mountain
5 - Pacific
6 - Alaskan
7 - Hawaiian
8 - Enter time zone, using westward offset from
UTC.
```

Enter option number or press [Return] to exit.

Enter "on-the-hour" deviation in minutes, press [Return] for zero deviation. Unless you use a "fractional" time zone (see above), press [Return].

```
Do you observe daylight savings time at this
location? (Y/N): y
```

If you set a Time Change in this FSC (*Page 30*), answer YES. If not, answer NO.

9 - Set Fleet Table

This menu selection is just like issuing the SET FLEET command (*Page 89*).

10 - Perform Communication Test

For FDIS and COMDATA -- select this to force the FSC to perform a communication test to the host. Test results are shown in *Figure 37...*

COMMUNICATION TEST RESULTS	
Message	Solution
NO ERROR	Comm Test passed
NO PHONE or ID	Set Fleet Table phone number or site ID
NO DIAL TONE	Connect phone line to System2 modem and retry
BUSY	Retry Communication Test
TIMEOUT NO ANSR	Set Connect Time to 45 seconds; or increase Connect Time by 5 seconds
NO CARRIER	Check phone line and retry
NO ANSWER	Check Fleet Table phone numbers
NO CONNECT NTWK	Check Fleet Table phone numbers
ERROR IN FORMAT	Check the modem connection and retry
MODEM NOT CNFGD	Check the modem connection and retry
INVALID FLEET NUMBER	Check Fleet Number in FLEET TABLE
INVALID SITE ID	Check Site ID in Network Options menu

Figure 37: Communication Test Results

11 - Set Forced Trans Capture Time

Note

Does not apply to Trendar FDIS network.

Sets waiting time before uncaptured transactions are sent to the network. If your site is not busy, and the average time between fuelings is 20 minutes, set capture time to 30 minutes.

This reduces unneeded calls to the network, lowering your phone bill.

12 - Force Transactions To Capture

Forces System2 to check its transaction buffer and to capture any network authorized or locally authorized transaction(s). When you select this option the number of transactions to be captured is displayed, then captured.

13 - Print Price and Total on Network Receipts

To have price per unit and total sale printed on the receipt, when prompted Do you want transaction price and total printed on receipts?, answer Y.

14 - Device Server Used in Place of Modem

After you select this option you'll see:

Is a Lantronix Cobox connected in place of a modem (Y/N)? y

When you use the CDS-10 instead of a modem, enter a TCP/IP address as the "phone number" when configuring a fleet, in the Fleet Table. As an example:

```
P>set fleet
-----
| #|?|Fleet/Acct|   Name   |Prompt Seq| Primary  | Secondary|Onl|Off| A | B| |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1| | | | | | | | | 0| | |
| 2| | | | | | | | | 0| | |
| 3| | | | | | | | | 0| | |
:
:
|17| | | | | | | | | 0| | |
|18| | | | | | | | | 0| | |
|19| | | | | | | | | 0| | |
|20| | | | | | | | | 0| | |
-----
ENTER (fleet table row # (1.20) or [RETURN] to exit) : 2

-----
| 2| | | | | | | | | 0| | |
-----

(0=None, 1=Comdata, 2=TCH, 3=Paymentech)

Enter NETWORK: 2
Enter TCH Customer # (length of 6): 0000000000
Enter Prompt Sequence: #*
Enter PRIMARY #: 10.0.0.79/1000      <- IP address and Port
Enter SECONDARY #:
Enter ONLINE (0=Local): 300
Enter OFFLINE : 21
Limit by (D)ollar or (Q)ty: q
```

A slash (/) must always be entered after the IP address to defined the port used for connection.

15 - Petro Vend MODEM In Use

OPW Fuel Management Systems is now shipping a new network modem. This option lets you maintain backward compatibility. After selecting this option you'll see Select Installed Modem. Here, "0" is the old 2,400 baud modem and "1" is the new 33.6k modem.

Select "0" is you have a non-Petro-Vend modem or have upgraded to this new version of software. Select "1" as you are a new customer and have just installed or purchased a new network modem from OPW Fuel Management Systems.

Fleet

The privileged SET FLEET command lets a customer enter data for up to 20 different fleets as shown in the sample screen below.

```

-----
|#|?| Fleet/Acct#| Name          |PSeq  |Primary  |Secondary|Onl|Off|SQY
|-|-----|-----|-----|-----|-----|-----|---|---|---
|1|1| 1234567890 |ABC TRUCK  |*$#EFG|18001234567|9876543 |2 | 70| 25
|2|2| 1234567890 |FLASH EXPRES |*$#EFG|18001234567|9876543 |1 | 50| 25
|3|3| 1234567890 |ACME CARTING |*$#EFG|18001234567|9876543 |0 | 75| 25
-----

```

Figure 38: Fleet Table Sample

Note

Network authorization cannot occur until the fleet table is properly configured.

To configure the fleet table, the Card Buffer must first be configured using SET CARD command (see *Page 109*). Initially, the Fleet Table is empty. The following fields can be changed by entering the number in the # column of the Fleet Table.

Row to Edit (#)

Enter this number to specify a row to edit.

Network Type (?)

A number from 1 to *N* represents a specific network. Enter a "0" to delete a row of information.

Enter Fleet/Acct.

This field connects prompts, phone numbers, and quantities to specific cards for a network based on the card's fleet, account or customer number. By defining a "Fleet/Acct #," you can limit your system to a specific customer of a specific network. This also lets you provide different prompts and limits for each customer.

To define information for a fleet, account or customer number, enter the number assigned by the network for that group. Usually, this is part of the embossed number on a card.

You can also simply press ENTER to accept all cards for that network.

Note

Some networks do not provide specific Fleet/Acct # information on their cards. In these cases you will not receive a "Fleet/Acct #" prompt.

Enter Fleet Name:

This is the account name, the associated fleet name for transactions, receipts and the journal log.

Enter Prompt Sequence:

The prompt sequence defines the order in which prompts are presented to the driver after the driver swipes or enters his or her card. The prompt sequence uses the SET PROMPT code (*Figure 39 on page 92*).

Three optional characters - *, #, and \$- can be included in the prompt sequence:

* The asterisk tells System2 to connect to the network immediately, vs. waiting for the prompting sequence to complete. The customer can thereby answer prompts while System2 is connecting. Put the character near the beginning of the prompt sequence. This is useful if the connect time is lengthy for this network. If numerous prompts are configured, test the asterisk's placement in regards to the time required by a customer to complete the prompt sequence.

Note

If the character is too far forward in the list, the connection may be made too soon, and the network may time out and disconnect before the information is sent. This causes a re-dial, slowing the process even more.

This is Pump number. This character MUST be part of the prompt sequence. When a valid pump number is entered, System2 reserves the pump until authorization is received.

When received, the message USE PUMP appears on the FIT display. If no authorization is received, the pump selection is canceled and no fueling is allowed.

\$The dollar sign forces: **PRESET GALLON AMOUNT (1-#)**. The “#” is the number of gallons the driver wants. This lets the user select the pre-authorized quantity. This prompt is FORCED for specific cards when the Paymentech network is installed.

Enter Primary #.

The dial-out phone number for Authorization/Capture.

Enter Secondary #:

Backup phone number, used if primary number fails to connect.

Enter Online [On] (0=Local).

Maximum gallons allowed while on-line.

Enter Offline [off]:

Maximum gallons allowed when System2 is offline.

A:

- **FDIS - Enter Override** overrides Gallon amount.
- **Comdata - Limit by \$(Y/N)**: This limits transaction by dollar amount for authorization.
- **Other networks - Limit by (D)ollar or (Qty)**. Authorize by dollar limit or quantity limit.
- **Payment - Force QUANTITY Limit prompt for Wright Express cards (Y/N)?**. Displays a Quantity Limit request prompt for WEX cards (the prompt always appears for bank cards).

B:

- **FDIS - Enter Discount**: Set a fuel price discount in percent. This feature lets you give “preferred” fleets a discount (large volume sales, for example).
- **Comdata - Limit by Qty (Y/N)**: Limit transaction by quantity.
- **Other networks - Enter dollar limit (no cents) \$**: If “A” prompt response is “D,” enter the maximum dollar amount requested for any fueling.

PROMPTS

The SET PROMPT command defines the prompts that customers see after swiping or keying their card.

The code letters are those used when entering the prompt sequence of the SET FLEET command or the code used when adding cards to the PCFs verify prompt code and prompt sequence string.

Code	Prompt	Entry	#
A	REEFER FUEL Y/N:	Y/N	1
B	MILEAGE:	123	6
C	TRIP #:	ABC	12
D	TRIP LEG:	ABC	2
E	PIN:	***	8
F	EMPLOYEE ID:	ABC	16
G	VEHICLE ID:	ABC	12
H	TRAILER ID:	ABC	12
I	REEFER HOURS:	123	7
J	DRIVER LICENSE STATE:	ABC	2
K	DRIVER LICENSE #:	ABC	20
L	VEHICLE LICENSE STATE:	ABC	2
M	VEHICLE LICENSE #:	ABC	20
N	TRAILER LICENSE STATE:	ABC	2
O	TRAILER LICENSE #:	ABC	20
P	DRIVER NAME:	ABC	16
Q	PURCHASE ORDER #:	ABC	8
R	CONTROL #:	ABC	12
S	PRO#:	123	12
T	EXTRA PROMPT :	123	8

Figure 39: Network Prompts

Each prompt has a CODE field (from A-T) to identify it. The PROMPT field is a 40-character text message customers see on the FIT. If you alter a prompt, remember to leave enough room for the type of entry: Numeric, Hidden Numeric, YES/NO, and Alphanumeric. The # field shows the maximum number of characters allowed for entry.

Entry

The entry field describes the type of characters the customer inputs in a prompt request: 123 (numeric), *** (hidden numeric), YES/NO, or ABC (alphanumeric). The number at the left of the description is the value entered if you are modifying the prompt.

(0) 123 (Numeric)

Means a number must be entered via the FIT keypad. Numbers entered are echoed on the FIT display. An entry is completed with [ENTER]. You can

clear an entry with [CLEAR] before [ENTER] is pressed. Numeric entries typically include items such as odometer readings and job numbers.

Hidden Numeric. Same as a NUMERIC entry, except that the number being entered is not echoed on the FIT display (an asterisk - * - appears instead). PIN numbers are usually hidden numeric.

Y/N

This typically signifies the customer must answer YES or NO to a questioning prompt. Enter YES by pressing [ENTER] or [1]. Enter NO by pressing the [CLEAR] or [0] key. Enter MAYBE by pressing both at the same time.

ABC

Alphanumeric entries can be alphabetical entries, or letters combined with numbers. Enter letters through the System2 FIT keypad like numbers. Typically, three letters are assigned to each key in addition to the number:

Key	Enters:
1*	[space], Q, Z
2	A, B, C
3	D, E, F
4	G, H, I
5	J, K, L
6	M, N, O
7	P, R, S
8	T, U, V
9	W, X, Y
0*	? [space] * \$

Figure 40: Entering Letters With a Numeric Keypad

*Note

The “?”, “\$”, “*”, and [space] characters are not available if you are using a C/OPT.

When a key is pressed, the number is displayed first. Press the [ALPHA] key once to display the first letter assigned to the key, twice to display the second, and a third time to display the third. For example, pressing the [3] key first displays 3. Pressing [ALPHA] once changes the 3 to a D. Press [ALPHA] again, and the D changes to E. Press [ALPHA] again and the E changes to F.

#

The “pound sign” field defines how many characters can be entered for each prompt. For example, an odometer prompt could be specified with a 6-character entry, while a yes/no entry would require only a single character response.

Default Prompts to Network Specific prompts

The Network Prompt table (*Table 11 on page 95*) reflects the different terms/prompts strings used by a network to capture data. When altering your prompt table, be sure to consider all enabled networks on your system.

You cannot alter a prompt string to have the same meaning as another (using different wording) just to have a different prompts for each network.

The meaning of the prompt in the default table never changes, and is always mapped to a specific field when the authorization packets are built and sent for approval.

If you require a prompt to be captured by the host that is not one of the standard prompts shown. You must make arrangements with a host as to which prompt will be redefined.

Network Prompt Table

Table 11: Network Prompt Table

Prompt Table, FDIS and COMDATA Defaults	EFS	T-Chek	TCH	NBS for Quarles	NBS for FuelMan Gascard	Fleet One
A - Refer Fuel Y/N Used only if the site uses standard diesel as refer fuel from the same pump. Instead of this prompt you can assign product code "081" to refer when dispensed from a specific pump.						
B - Mileage Supports both HUB and ODOMETER readings. An "either-or" prompt.						
C - Trip				Job code		
D - Trip Leg						
E - PIN						
F - Driver ID	Employ #					
G - Vehicle ID	Unit #	Unit #	Unit #			Unit #
H - Trailer ID						
I - Refer Hours						
J - Driver License State	n/a	CDL				
K - Driver License #	n/a	CDL state				
L - Vehicle License State						
M - Vehicle License #						
N - Trailer License State						
O - Trailer License #						
P - Driver Name						
Q - Purchase order	n/a	P.O. #	P.O. #			P.O. #/ Reference #
R - Control #	n/a	n/a				
S - Pro #	n/a	n/a				
T - Extra prompts This information is only recorded with the transaction and is NOT sent to the host.						

ISO Table

The system supports SET ISO and SHOW ISO. These commands are used to configure and enable the credit and fleet cards to be authorized using the Paymentech Network.

The SET ISO command can be used in two ways. Issuing SET ISO with no parameters allows you to step through each entry in the table for configuring the cards. Issuing SET ISO XX, where XX is the line in the ISO table to modify.

Note

Enabling and/or configuring a card in the ISO table has no effect on any network other than Paymentech's.

Configuring the ISO table

After installation of the software (or after a cold start) all entries in the ISO table are disabled by default. After configuring the Paymentech network you must first enable (or configure) the card types you want to process. From startup the ISO table has the follow cards preloaded and disabled: Visa, MasterCard Fleet, MasterCard, Discover, American Express and Voyager Fleet.

To enabled or configure additional cards types, issue the SET ISO command. First a header is displayed indicating the characters codes used to defined a cards track2 data. Then each entry in the table is displayed and you are prompted if you want to modify the entry. The following is an example to enable the first entry in the table.

```
P>set iso
  ISO table for Bank and Private Labels cards
  I - ISO #           C - Card Number
  L - Luhn check digit = - must be field separator
  M - Month           X - don't care digit or field separator
  Y - Year            # - don't care digit
  0-9 - must be specified digit
  > - don't check length to the end OR alternate network card

ISO #1:      VISA          --Not Active
Format:      ICCCCCCCCCL=YMM>
ISO Range: 4-4
# of digits to display/print: 4
Type/OFP: 6/000-1
--Modify this ISO (Y/N/X)? y
CLEAR this entry (Y/N)? N
Enter card name: VISA
Enter ISO card format: ICCCCCCCCCL=YMM>
Enter ISO# range (Minimum Value): 4
Enter ISO# Range (Maximum Value): 4
Enter right most number of card digits to display/print: 4
Enter Multi-trucking CARD TYPE code (see User Guide): 6
```

```

ISO Range: 4-4
# of digits to display/print: 4
Type/OFP: 6/000-1
--Modify this ISO (Y/N/X)? x

```

When configuring a new entry, use the following Card Type table for selecting the “Multi-trucking CARD TYPE code”.

Multi-Trucking Card Type Codes

These numeric codes are used to identify the requesting card type to the network host. They are separated into groups based on processing requirements within the System2.

Group 1 -- ISO Based Bank Cards

These are recognized and/or validated using the ISO table. All Group 1 cards are processed via the Paymentech host.

Card	Numeric Code
Visa	6
MasterCard	7
MasterCard Fleet	8
American Express	9
Discover	10
Dinners Club	11
Carte Blanche	12
Voyager Fleet	13
JCB	14
Visa Fleet	15 (not supported by Paymentech at this time)
Bank Card Spares 1 - 5	16 - 20

Group 2: ISO based private network cards.

Enabled for authorization using the ISO table but recognized/validated using fixed code, due to the unique handling required for each card.

Wright Express	21 (see below for defining group 2 cards in ISO)
----------------	--

When adding group 2 cards to the ISO table, always define the ISO card format using a single “greater than” (>) character. This character along with the card type code indicates it is available for processing to its specific host. Skip entry on all other fields and answer Y to SET ACTIVE?

Tax

System2 uses two tax recording commands:

```
SET TAX
```

```
SHOW TAX
```

SET TAX

The SET TAX command sets Federal, State, Federal Rebate State Rebate, and Sales tax levels. These tax values are ONLY used for the Trendar FDIS Authorization and Capture messages. They do NOT affect prices defined by the SET FUELTYPE command.

Either SET or SHOW displays the following.

```
Federal Tax 0.00  
State Tax 0.00  
Federal Rebate 0.00  
State Rebate 0.00  
Sales Tax 0.00
```

The default value for each of the tax levels is zero.

SHOW TAX

The SHOW TAX command displays the current tax levels. Use it after the SET TAX command to verify your setup.

Restrictions

From the MAIN menu, press F

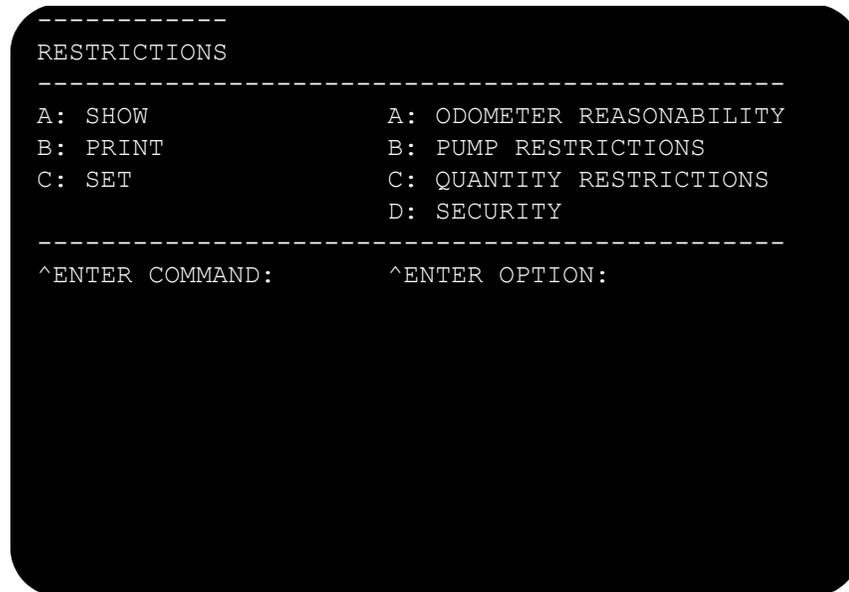


Figure 41: Restrictions Menu

Restrictions (See *Figure 41*) let you control fuel distribution by checking miles traveled between fuelings (reasonability), by limiting pumps that can be used by certain cards, or through quantity limits. Viewing or printing the settings is non-privileged, but changing them is privileged.

Odometer Reasonability

This option checks the difference between two user-entered odometer readings, and determines if the difference is within a range you specified for that card. Sixteen ranges are available.

Note

Odometer Reasonability is only for single-site applications. For reasonability to work, you must program the FIT or OPT display to instruct customers to enter their current odometer value on the FIT keypad. See Page 52.

Customer-entered odometer readings are stored in the card/account file, and then compared to the next mileage entered by that user. The second entry is “reasonable” if the difference between the entries is within your specified range.

Example: The current odometer entry is 55,000 and the previous entry was 54,400. The difference is 600. If the reasonability range is 50 - 250 (Code #6 in) this entry is not reasonable.

You enable reasonability as one step of configuring the Card/Account file; see *SET CARD Command* on page 109.

Odometer entries are also used by the optional Report Package to calculate vehicle efficiency (miles per gallon, cost per mile).

If three unreasonable customer entries are input, you can program System2 for one of two responses:

- **Accept The Third Entry:** System2 accepts the third entry as the current odometer value; the message --BAD ENTRY ACCEPTED is included when this transaction is viewed with the SHOW TRANSACTIONS or PRINT TRANSACTIONS commands.
- **Reject The Third Entry:** A Transaction is aborted after the third bad entry. At this point the customer must reinsert their card and begin another transaction. Fueling is not allowed until a reasonable odometer entry is made.

Fifteen ranges are available. The Code # for a range is entered during the INSERT CARD setup procedure (*Page 109*). Define each range with the SET ODOM command, or use one of the following presets:

Table 12: Odometer Reasonability Codes

Code	Minimum Mileage	Maximum Mileage
1	0	100
2	0	250
3	0	500
4	0	1000
5	50	150
6	50	300
7	50	600
8	50	1000
9	100	200
10	100	400
11	100	700
12	100	1000
13	150	400
14	150	700
15	150	1000

If none of the pre-programmed ranges is acceptable, do the following to make your own:

1. Type **SET ODOM** [ENTER].
ENTER MINIMUM MILEAGE
2. Enter a minimum mileage and press [ENTER].
ENTER MAXIMUM MILEAGE
3. Enter a maximum mileage and press [ENTER].
4. Repeat for up to 15 codes. To skip past the remaining codes, enter a letter instead of a number.

After defining the range codes, you'll see:

CHANGE ACTION AFTER BAD ODOM ENTRIES (Y/N)

Default is NOT to change the option.

Two options are available. If you enter [Y], you are prompted with the following (Y is default):

ALLOW FUELING AFTER 3 BAD ODOM ENTRIES (Y/N)?

Pump Restrictions

The SET PUMP command defines codes for up to 15 sets of pump restrictions. Use restriction codes (when configuring card files, they define what customers can use what fuel.

Use the following pump configuration as an example on setting restrictions:

- *Leaded* fuel is dispensed from pump 1, and cannot be used in newer trucks
- *Unleaded* is dispensed from pump 2; can be used in either new or old trucks
- *Premium* is dispensed from pumps 3 and 4; should not be available to any trucks.

Enter pump #1 as valid for CODE 1, and pumps #1 and #2 as valid for CODE 2. Do not assign pumps 3 or 4 - pumps not entered as valid are assumed invalid. Now use Codes 1 and 2 to configure the vehicle card files for the trucks; other codes could be created to include the premium fuel pumps as required. *The default for all codes is ALL VALID.*

Note

Driver/Vehicle and Account use the most restrictive codes.

Code 0 can be used to indicate no restrictions. In the example above, code 0 could be specified for vehicles that would have access to all four pumps.

Note

Pumps must be installed to be valid.

Quantity Restrictions

Define up to 15 quantity restriction codes with the SET QUANTITY command. Restrictions can be monetary or by volume (gallons, liters or quarts).

The Quantity Restriction codes are used during Card File configuration to specify how much product a particular customer has access to.

Quantity Restriction is often set to match a vehicle's tank size. Sale defaults are as follows (Code 0 turns OFF the function).

Table 13: Restriction Codes

Code	Restriction Amount in Dollars	Code	Restriction Amount in Dollars
0	\$999	9	\$180
1	\$20	10	\$200
2	\$40	11	\$220
3	\$60	12	\$240
4	\$80	13	\$260
5	\$100	14	\$280
6	\$120	15	\$300
7	\$140		
8	\$160		

1. Type **SET QUANTITY** [ENTER].

```

QUANTITY RESTRICTION CODES:
CODE 0: NO RESTRICTIONS
CODE 1: $

```

2. Press [ENTER] (without an entry) to select the default value, or enter a different value.
3. After the last entry, you are prompted:

```
QTY RESTRICTION VALUE OPTIONS (Y/N)
```

If you press [Y], you are prompted:

```
USE VALUES AS $ (Y/N) ?
```

4. Press [Y] to use the values as dollars or [N] to use the values as quantities. The quantity values represent gallons, liters or quarts, depending on the quantity units.

Security

Each System2 has a built-in “security table”, made up of ten 2-digit hexadecimal numbers (in two rows of five) used by the INSERT CARD and COPY CARD # commands for automatic PIN number generation. The security table also generates PINs for bank cards.

Caution

The default table values are the same for every System2 - you MUST set new values with this command in order to generate unique PIN numbers for your system.

Once created, card records are not affected by changes in the security table. Only PIN numbers generated after modifying the table or code number are affected.

PINs for bank cards are generated when the card is inserted. Modifying the table will modify the PINs.

1. Type **SET SEC** [ENTER].

```
ROW 1: 01 23 45 67 89
```

This is the current value of ROW 1 (system defaults are shown).

2. Enter five 2-digit hex numbers, pressing the [ENTER] key after each. Hex numbers are the decimal numbers 0 to 9, and letters A to F.

Note

Make your entries as random as possible. For example, 'A0 E9 83 DD 1C' is good, but '12 12 12 12 12' is not.

3. After five first-row entries, enter five different hex numbers in the second row (ROW 2).
4. After your last entry in Row 2 you should see:

```
SECURITY CODE: 00  
ENTER CODE:
```

The Security Code (system default is 00) is an added measure of encryption. Each security code generates different PINs from your same security table row entries.

Note:

Record your Security Table numbers on the worksheet (Appendix A)! If you are reconfiguring your system, or wish to generate PIN numbers to match another System2, the row and security code numbers must match your original entries!

Cards/Accounts

From the MAIN menu, press [G]

```

-----
CARDS/ACCOUNTS          **PRIVILEGED**
-----
A: SHOW                 A: CARD (#...)
B: PRINT                B: CARD SUMMARY
                        C: CARD ACCOUNT
                        D: ACCOUNT (#...)

-----
C: INSERT              E: CARD
D: DELETE              F: ACCOUNT
E: EDIT

-----
F: SET                 G: CARD
-----
G: COPY                H: CARD #...
-----
H: SORT
L: NETWORK

M: FLEET
N: PROMPTS
O: TAX

```

Figure 42: Cards/Accounts Menu

About Cards/Accounts

The Cards/Accounts menu (*Figure 42*) lets you view or print cards or account summaries, remove, add, or change cards within an account, remove add or change entire accounts, copy cards, and sort cards or accounts.

Before using most of the Card/Account features, you must first issue a SET CARD command, and then, from that submenu, do the following two things:

- Allocate memory for the cards and accounts. TO DO THIS: Type **SET CARD** and then choose 1.) SPECIFY CARD/ACCOUNT BUFFER SIZE.
- Type **SET CARD** again and use 2.) DEFINE CARD/ACCOUNT RECORD to select items for each record in the file.

Showing or Printing Cards

Showing or Printing Card Groups

You can show or print individually (**SHOW CARD #**), as a group (**SHOW CARD SUMMARY**) or only as those cards in a particular account (**SHOW CARD ACCOUNT**). **PRINT** also applies to all three of these options.

SHOW CARD displays the data for one or more card records. Specify beginning digits of the card number to display groups of cards. For example, assign cards 1000-1999 to group 1, cards 2000-2999 to group 2 and cards 3000-3999 to group 3.

In this example, to show all cards for group 1, enter **SHOW CARD 1**. To print only card 1234, enter the command **PRINT CARD 1234**.

When more than one screen of data is available, you can press any key (except [X]) to stop and to start the scrolling of the data across the screen. You may also press the [X] key to abort one of these commands prematurely.

To show or print a single account record you must specify the four-digit account number.

To display *all* the records, enter the command *without* specifying a number. If the account data does not fit onto one screen, the data will scroll up until finished.

Press any key to stop or start the scrolling. Press the [X] key to exit this command without showing the remaining account records.

Showing or Printing Card Summaries

SHOW CARD SUMMARY displays the breakdown of records in the buffer. The selected configuration options and the number of single, driver and vehicle cards are listed.

This command also checks for duplicate numbers in the card file and tests the record numbers in the file to ensure their integrity.

System2 cannot process corrupted records. If a bad number is found, the record is displayed. If you are in Privileged mode, you can delete it.

SHOW CARD ACCOUNT shows all of the card records under a specified account number. For example, to show cards in file 7890, use the command **SHOW CARD ACCOUNT 7890**. The card data are displayed in the form below:

```

CARD #: 1111222233334444
SINGLE CARD
ACCOUNT #: 7890
MONTHLY ALLOCATION: $100.00
-- TOTALS TO DATE: $39.85
MISC ENTRY: DISABLED
PIN #: DISABLED
ODOMETER: DISABLED
PUMP RESTRICTION CODE: 0
DRIVER NAME: RICHARD

```

When this command is executed, the card records scroll. Press any key (except [X]) to stop or start the scrolling. Press the [X] key to exit this command and skip any remaining records.

These commands are used to program individual cards and accounts for the system. Cards and accounts must exist prior to using these commands.

Inserting Cards or Accounts

The INSERT CARD *or* ACCOUNT commands only prompt for entries if memory space is available.

OPW Fuel Management Systems magnetic cards require 16-digit numbers. Optically-read cards require 10 digit numbers.

The first four digits for both types of card must be one of the network numbers for your system. The network numbers are listed on your system's data sheet; most systems have just one network number.

Cardless Records. A cardless “card” is not a physical card, but simply a number entered at the System2 keypad.

The following apply to cardless cards:

- Cardless records can be up to 19 digits long.
 - The FIT must be set up for cardless operation.
 - The PIN entries feature should be enabled for cardless operation.

Dual-Language. If enabled, you are prompted to select the first or second language for the card. (Single and Driver cards only).

PIN Number. If enabled, you are prompted for automatic PIN number generator. Enable this field to have System2 generate the PIN numbers; card numbers must be five or more digits long.

Card Type. Single, Driver or Vehicle must be specified for each card record.

Valid? Specify if the card record is valid. This allows you to create an invalid card record now, and activate it at a later date.

Misc. Entry. This option allows the customer to enter up to nine numbers (such as a job number) that will be included in the transaction record.

The remainder of the prompts are described in the SET CARD command. Some or all of the specified parts can be selected for each record.

The system prompts for an account number, expiration date, validity, discount, monthly and daily allocations, pump and quantity restrictions and an account name (as explained in SET CARD).

- If you enter less than four digits for an account number, leading zeros are added. For example, account 12 is defined as 0012
- Only the original price is shown (or printed). The discounted price(s) are displayed only when generating reports with the Report Package

In Dual-card operation, driver and vehicle cards must be assigned to the same account number. To allow access to vehicle(s) from any account, you can assign the vehicle(s) to account 0000.

As an example, say a company has cars assigned to each department, each with its own account number. The company also has a van that is needed by *everyone*. By assigning the vehicle card for the van to account 0000, members of all departments (or accounts) can fuel the van.

Deleting Cards or Accounts

DELETE CARD eliminates an individual card record; you are prompted for the card number. Enter the number and press [ENTER] to delete the card record.

DELETE ACCOUNT eliminates an account record; you are prompted for the account number. Enter the number and press [ENTER] to delete the account.

Editing Cards or Accounts

EDIT CARD modifies an existing card record. Do one of the following when the system prompts for a card number:

- Enter a number, and the system calls up that card record for modification, OR...
- Enter **ALL**. The system displays the entire card file, one card at a time, using the form **CARD ##### (Y/N/X)?** Press [Y] to edit the displayed card record, or just press [ENTER] to leave this record unchanged and go to the next one in the file. After the last card record has been altered, enter `X' to exit this command.

If you activate Dual Language after cards have been inserted, change the language designation of the cards with the EDIT command.

EDIT ACCOUNT command, the system prompts:

```
ENTER ACCOUNT #:
```

Enter an account number and press [ENTER] to bring up that account for editing. OR, enter A (for ALL) and press [ENTER] to list ALL accounts, one at a time. Press [Y] to edit the displayed account, or press [ENTER] to leave this account unchanged and go to the next one in the file.

When you are done editing, press [X] to return to the Cards/Accounts menu.

SET CARD Command

After issuing the SET CARD command, a submenu (*Figure 43*) appears.

```

1 - SPECIFY CARD/ACCOUNT BUFFER SIZE
2 - DEFINE CARD/ACCOUNT RECORD
3 - RECONCILE CARD RECORD TOTALS
4 - RECONCILE CARD RECORD ALLOCATION
5 - RECONCILE ALL ACCOUNT RECORD TOTALS
6 - RECONCILE ACCOUNT RECORD ALLOCATION
7 - MONTH END TOTALS
8 - SET KEYBOARD CARD CONTROL DATA
9 - ADDITIONAL OPTIONS
X - EXIT
  ENTER CHOICE:

```

Figure 43: SET CARD menu

OPTION 1 - Specify Card/Account Buffer Size

Use the **SET CARD** command before any other Card/Account function. The command splits memory buffer into two or three sections.

WARNING

This command erases all transaction data!

The Card/Account Buffer Size procedure is as follows:

1. From the SET CARD submenu, press [1], then [ENTER]. You will be prompted:

TRANSACTION AND MESSAGE BUFFER WILL BE CLEARED
(Y/N) ?

2. Press [Y], then [ENTER], to partition the buffer and continue. The next prompt is:

ENABLE MESSAGING (Y/N) ?

- If you enable Messaging, the buffer is divided into *three* sections, and less memory is available for card records.
- If you DO NOT enable Messaging, the buffer is divided into *two* sections, and more memory is available for card records.

3. If Messaging is enabled, the next prompt is:

ENTER MESSAGING SIZE CODE (1.4) :

The Size Code (*Table 14*) determines the maximum number of messages the system can display:

Table 14: Messaging Size Codes

Size Code	Message Capacity
1	25
2	50
3	75
4	100

ENTER TRANSACTION SIZE CODE :

4. Enter a transaction size code:

Size Code = (number of transactions) ÷ 25

For example, 100 transactions requires a size code of 4 ($100 \div 25 = 4$).

The number of transactions you can store is limited by the amount of RAM. The amount of RAM in your system is shown in the SYSTEM PARAMETERS - RAM screen (*page 80*).

5. After entering a size code, the system displays the configuration data. For example,

```
# OF CARDS/ACCOUNTS (MIN OPTIONS): #####
      (MAX OPTIONS): ###
      (CURRENT OPTIONS): #####
      # OF TRANSACTIONS: ##
      # OF MESSAGES: ##
-- SAVE THIS CONFIGURATION (Y/N) ?
```

```
# OF CARDS: ####
```

This information helps you decide how to divide the buffer. The number of records System2 can manage depends both on:

- Number of transactions retained
 - Card/account file definition, including:
 - The maximum number of records if *no* options are selected for the file ('MIN')
 - Maximum number of records if *all* options are selected ('MAX')
 - The maximum number of records if the *current* options are retained.
 - Number of allowed messages.
6. Press [Y], then [ENTER] to save the configuration. Just press [ENTER] to erase changes and start again.

OPTION 2 - Define Card/Account Record

Type **SET CARD** and then press [2].

Defines the type of card and account records to be used for the **INSERT CARD**, **COPY CARD #**, and **INSERT ACCOUNT** commands, also accessed from the Cards/Accounts menu.

If the card file has been previously defined, the following message is displayed:

```
CARD/ACCOUNT RECORDS: # OF POSSIBLE ####
# OF TRANSACTIONS: ###
```

This is records already defined, the total amount records that can be defined and the number of transactions that can be retained. If the card/account file has *not* been previously defined, these numbers are not available.

2. The next prompt is:

```
SPECIFY CARD/ACCOUNT RECORD (Y/N) ?
```

To specify a new type of card/account record, press [Y]. You will see:

CARD/ACCOUNT FILE WILL BE DESTROYED!!!

SURE (Y/N)?

WARNING

This command erases all records in the card buffer!

Press [Y] to continue.

3. You are now prompted to include (one after the other) each of the following for the card/account file. Enter [Y] to enable the option. Default for all is NO. Pressing [ENTER] leaves each at NO.

- **Account #:** a department or company identification number of up to four digits; cards can be grouped together for allocation restriction or reporting by assigning them to the same account.
- **Expiration Date:** Card or account validity restriction termination day.
- **Monthly Allocation:** *NOT recommended for multi-site setups.* Defines a monthly monetary limit for a specific card or account.
- **Daily Allocation:** Defines a daily monetary limit for a specific card or account.
- **PIN #:** Personal Identification Number (card records only, not applicable to accounts). Also see *page 99* for more PIN information.
- **Card invalidation:** after three bad PIN entries (affects cards only, not applicable to accounts). See Additional Options in the Set Card menu.
- **Save Odometer Entries:** Save entries from user (card records only, not applicable to accounts). This option must be activated for MPG or km/L calculations to be performed (via the optional Report package).
- **Odometer Reasonability:** Checks if entry is within range.
- **Pump restriction:** Authorized pumps.
- **Quantity restriction:** The product limit per transaction (dollar or volume).
- **Driver/Vehicle/Account name:** Up to nine characters.
- **Verify 1 (Y/N)**
- **Verify 2 (Y/N)**
- **Verify 3 (Y/N)**
- **Prompt Sequence (Y/N)**

As with network cards, you can capture and verify prompt information for cards stored in the card record file. After entering all your Card/Account Record definitions, you are returned to the SET CARD submenu.

OPTION 3 - Clear Card Record Totals

Type **SET CARD** [ENTER] and then press [3] to clear dollar amounts for all cards.

ARE YOU SURE?

Press [ENTER] to confirm.

This SET CARD function compares (reconciles) the amount of product pumped to date with the monthly amount allocated for a card. The amount pumped is subtracted from the amount allocated, and the Amount Pumped is reset to zero.

The monthly allocation can be used as a kind of on-going allocation. For example, say a customer begins with a \$200 allocation. After using \$100 of this, the customer makes a payment of \$50, which is added to the original allocation. The new allocation is \$250 (with \$150 remaining). Although this process can continue indefinitely, the totals may become too large for good bookkeeping.

The Reconcile function keeps these numbers from getting too large. In this example, the new amounts (after reconciliation) would be \$150 allocation and \$0 product pumped.

OPTION 4 - Reconcile Card Record Allocation

Type **SET CARD** [ENTER] and then press [4] to activate the Reconcile function.

SURE?

Press [Y], then [ENTER], to confirm.

OPTION 5 - Clear All Account Record Totals

Type **SET CARD** and then press [5] [ENTER].

SURE?

Press [Y], then [ENTER], to confirm.

This function clears dollar totals for all accounts. This SET CARD function compares (reconciles) the amount of product pumped to date with the monthly amount allocated for an account. The amount pumped is subtracted from the amount allocated, and the Amount Pumped value is reset to zero.

OPTION 6 - Reconcile Account Record Allocation

Type **SET CARD** [ENTER] [6] [ENTER].

SURE?

Press [Y] [ENTER] to confirm.

Similar to **Reconcile Card Record Allocation** (*Page 113*).

OPTION 7 - Month End Totals

Type **SET CARD** [ENTER] [7] [ENTER].

AUTOMATICALLY CLEAR MONTH END TOTALS?

This SET CARD function specifies whether or not to clear the dollar totals for all card and account records automatically at the end of each month.

Press [Y], then [ENTER], to confirm.

OPTION 8 - Set Keyboard Card Control Data

This SET CARD function allow a customer to enter their card number after three consecutive bad reads of the card. This ability is set with position 4 of DIP switch #2 on the FIT board - if CLOSED, manual entry cannot be done. If OPEN, the customer is prompted to enter the number after three bad reads.

Card control data is added to the end of the customer's entry. The system takes this new string and treats it as that customer's card data when they key in their card number. The data string is then used for this customer in the future - whenever they key in their card number.

Card Control Data
Enter tax card control data string:

Option 9 - Additional Option

Press 9 then enter.

Card invalidated after three bad PINs? (Y/N)

Option P - Show PIN #'S

This option gives the holder of a particular credit card the PIN number for that card. If you reply Y, you will see: ENTER CARD NUMBER (MIN. 8 DIGITS) -->1234567886

PIN# --> 53086

Enter the FULL card number and the system generates a PIN for that card. Give the authorized customer the PIN number you enter here.

Using Network Cards in the Proprietary Card File

As a way to reduce processing costs, many cards supported by Multi-Trucking software can be added to the System2 proprietary card file. Since each network provider uses a unique proprietary format for card data storage, network cards can only be used as “single” cards.

Transaction Data

.From the Main Menu press H

```

TRANSACTION DATA    ** PRIVILEGED **
-----
A: SHOW            A: TRANS DATE TIME CARD ACCT VEH
B: PRINT           B: TRANS DATE TIME CARD ACCT VEH SUMMARY
                   C: TRANS (#) CARD HOST
                   D: TRANS CARD HOST SUMMARY
-----
C: SET             E: TRANS
D: CLEAR
-----
E: CLEAR          F: TRANS DATE #...SEQUENCE #
-----
ENTER COMMAND  ENTER OPTION:

```

Figure 44: Transaction Data Menu

Show or Print by Date, Time, Card, or Vehicle

The **SHOW/PRINT [date time card account vehicle]** command displays or prints completed transactions stored in the SYSTEM2 data base by one data field.

Though all transactions are recorded, what you actually see is determined by the **SET TRANS** command.

When you issue a **SHOW TRANS** or **PRINT TRANS**, you are prompted as follows:

```

ENTER DATE:
ENTER TIME:
ENTER CARD:
ENTER ACCOUNT:
ENTER VEHICLE:

```

There are four types of responses to these prompts. Pressing ENTER at each prompt tells the system to ignore that parameter.

To define a range, enter a time, date, or number at a prompt.

For example, to display only the transactions from January 22, 2000, enter JAN 22 2000 at the date prompt, and then press ENTER at the other four prompts.

When specifying the time or date, you can also include one of two following prefixes:

- < (“less than” sign). Will include all transactions up to and including the current time or date. For example, to include all transactions up to and including Jan. 22, 2000, enter <JAN 22 2000 at the date prompt.
- > (“greater than” sign). Will include all transactions starting with and including the specified time or date. For example, to include all that occurred after 5:00 PM (and before midnight), you would enter >5:00 PM at the time prompt.

```
>PRINT TRANSACTION 161
  -ALLOW WRAP AROUND
  -SAVE UNAUTHZ'D USERS ALSO
  -TRANSACTION BUFFER SIZE: 25
SEQUENCE #: 2
REASON FOR TERMINATION: NORMAL
DRIVER: MR TEST
  JUL 15, 2002   07:11 PM
TRANSACTION #: 161
CARD #: 1
FUELTYPE: UNLEADED
FUELTYPE DENSITY: 1000
PUMP #: 1-1
QUANTITY: 25.000 GALLON
GROSS QUANTITY: 51.200 GALLON
PRICE: $1.000
TOTAL: $25.00
ODOMETER: 66555
DISTANCE PER UNIT: NOT AVAILABLE
MISCELLANEOUS:
--RECEIPT ISSUED
ACCOUNT: 00000
```

Show or Print Summary by Transaction, Date, Time, Card, or Vehicle

The **SHOW/PRINT TRANS [date time card account vehicle] SUMMARY** command displays only the product totals.

```
-ALLOW WRAP AROUND
-SAVE AUTHZ'D USERS
-TRANSACTION BUFFER SIZE: 25
```

*** PRODUCT TOTALS ***

```

UNLEADED      : 46.080 GALLON  TOT: $46.08
PREMIUM       : 35.840 GALLON  TOT: $35.84
REGULAR       : 34.900 GALLON  TOT: $34.90
TRANSACTIONS: 9          GRAND TOTAL: $116.82
                AVERAGE: $12.98
Show or Print by Transaction #

```

The **SHOW/PRINT TRANS#** command is quick method of displaying transaction data. You are prompted only for the transaction number.

Set Transaction

The size of the transaction buffer is set when you define card buffer size (*Page 109*). The **SET TRANS** command specifies how the transaction buffer is to be used. The first prompt is:

```
SET WRAP AROUND OPTIONS?
```

If wraparound is enabled, and the transaction buffer is full, the SYSTEM2 overwrites (erases) the older transactions when new transactions are received.

When wraparound is disabled, transactions can not be overwritten; no fueling is allowed if the buffer is full. If you enter (Y), you will be prompted again:

```
ENABLE WRAP AROUND?
```

Press (Y) to confirm.

```
Write over non-captured or failed transactions?
(Y/N)
```

If you answer N it forces Multi to skip over the transactions and use the next available location.

Caution

Do not enable wraparound unless you are certain that transaction data will not be accidentally destroyed.

The next prompt is:

```
RE-DEFINE TRANSACTION?
```

Enter (Y) to redefine transactions and display:

```
TRANS=UNAUTHZ 'D USERS ALSO?
```

If you enter (Y), the system processes an unauthorized attempt to use the system as a transaction and logs the event in the transaction buffer.

Entering (N) causes the system to ignore any unauthorized users and events; only cases where a pump was activated by the SYSTEM2 are recorded.

The third SET TRANS prompt is:

```
SPECIFY DISPLAY FIELDS?
```

This lets you tell the system which fields to display when a SHOW TRANSACTION or PRINT TRANSACTION command is issued. Choose from the following fields:

```
ENTER Y TO DISPLAY THE FIELD:
```

```
ACCOUNT/DRIVER/VEHICLE?
```

```
DATE & TIME ?
```

```
HOST CAPTURE Date/Time? [if at least one network installed]
```

```
TRANS # ?
```

```
CARD #1
```

```
CARD 2
```

```
FUELTYPE
```

```
PUMP
```

```
HOSE
```

```
QUANTITY
```

```
PRICE
```

```
TOTAL
```

```
ODOMETER
```

```
DISTANCE PER UNIT
```

```
MISCELLANEOUS
```

```
RECIEPT STATUS
```

```
ACCOUNT #
```

```
PROMPT ENTRIES?
```

```
- if y THEN SEND IN COMPUTER FORMAT?
```

There must be at least one transaction recorded in your system in order to show all the selected data fields. The last SET TRANS option (displayed after the account number prompt) is:

```
COMPUTER FORMAT CHECK DATA IN HEADER?
```

When transferring data to an external system in the computer format (*Appendix D - Using System2 With a PC* on page 161), an optional data check can be prefixed to the transaction header to provide greater data integrity. The data check includes: (1) the number of records and (2) the sum of the quantities for records.

Press (Y) to enable or (N) to disable the data check.

Network Transactions

Details on “generic” system transactions begins on *Page 136*.

Authorization vs. Capture

Transaction data for network transaction records contain the following information:

AUTHORIZATION #

When a network transaction is initiated, the access status code is recorded here; if the transaction is authorized locally or by the network, the authorization number is also recorded. For example, `A:123456` (network authorized). Transaction status codes (access and capture) are described later in this part of the manual.

REFERENCE #

The reference number is assigned by the network (where appropriate) when the transaction is downloaded. This number is used for reference to the network when an issue about a specific transaction arises.

See Reason for Termination Codes (Auth. GRANTED), *Table 25* on *page 170* and Reason for Termination Codes (Auth. DENIED), *Table 26* on *page 171*. The type of information displayed depends on which items were selected with the SET TRANSACTION command, described elsewhere in this section.

Note

Declined transactions are never captured by the network.

When Fuelman/Gascard network support is enabled, transaction numbers increment to 8999, then “roll over” to 0001.

When Fuelman/ Gascard network support is disabled, transaction numbers increment to 9999.

Network Transaction Logging

A network transaction is completed when customer hangs up the pump handle. Then:

1. System2 records the transaction in its transaction buffer...

2. System2 sends a CAPTURE message to the appropriate host on the next preauthorization sequence. This feature helps reduce the amount of phone connections that occur.

Below are examples of searching for a network transaction.

```

SHOW TRANSACTION WHERE STATUS = AUTHORIZED or CAP-
TURED
  (by transaction state) or DECLINED
SHOW TRANSACTION WHERE STATUS = 345678
  (by authorization number)
SHOW TRANSACTION WHERE STATUS =!
  (by status code letter)
SHOW TRANSACTION WHERE ACCOUNT = ABC TRUCKING (by
fleet name)
SHOW TRANSACTION WHERE ACCOUNT = 000006
  (by fleet number or network name: Comdata, NTS, or
TCHEK)

```

Table 15: Network Search Strings

To Look For...	Enter...
FDIS	FDIS
COMDATA	COMDATA
NTS	NTS
T-CHEK	TCHEK
EFS	EFS
TCH	TCH
Fleet One	FLT1
Quarles Fuel Network	QUARLES
Paymentech	PAYME

A network transaction is initiated when a customer inserts a network card. System2 assigns a status code to the transaction, and sends the transaction to the network. After downloading, System2 updates the status code based on the network response.

The status codes are in *Table 16*.

Table 16: Network Transaction Status Codes

Code	Transaction Status
a	Network-authorized
A	Local-authorized
B	Not allocated
!	Declined authorization
q	Captured authorization
Q	Captured local authorization
i	Failed capture, previous authorized
I	Failed capture, previous local authorized
C	Too many re-prompt attempts

TRANSACTIONS WHERE STATUS = <category>

This command displays all network transactions for one of the following transaction status categories:

Table 17: Account Transaction Status List

Category	Description
Authorized	Granted by the network
Local	Authorization granted by the system
Captured	Completed, and successfully sent to the network
Failed	Completed, but not authorized by network
Declined	Authorization or capture denied

You can also search for transactions by specifying one or more of the following:

- Transaction status code (a, A,!,etc)
- Approval number
- Reference number

These numbers are listed in each transaction record. To display all transactions that were both network-authorized and successfully captured, enter the following:

```
SHOW TRANSACTION WHERE STATUS = a
```

To print a transaction with the authorization number of 123456, enter the following:

```
PRINT TRANSACTION WHERE STATUS= A:123456
```

Remember to specify the correct transaction status code, and to include the colon after the code.

System Totals

Showing or Printing Total Transactions by Date, Time, Card, or Vehicle

The **SHOW TRANS TOTALS** or **PRINT TRANS TOTALS** commands let you print and show the completed transactions that stored in the SYSTEM2 data base. This function is similar to the SHOW/PRINT TRANS command explained in the Transaction Data section (*Page 117*).

Showing or Printing Summary of Total Transactions by Date, Time, Card, or Vehicle

This command displays only product totals, without listing all the transactions. This function is very similar to the SHOW/PRINT TRANS SUMMARY command in the Transaction Data section (*Page 117*).

Midnight Totals

The **MIDNIGHT** commands summarize totals for a day. The following data is logged in the SYSTEM2 journal at 12:00 AM - midnight:

- Daily transaction totals for each POS position of each PCT
- Daily product totals
- Daily transaction records

On the Midnight screen, when a POS position is installed, the pump number is indicated next to the POS number. If one or more of the eight POS positions is not installed, the position is indicated with an 'X'.

Use **SHOW MIDNIGHT** to display the data for any of the preceding eight days. When you enter the command, you are prompted to specify which day. For example,

```

1: JAN 27, 2000
2: JAN 28, 2000
3: JAN 29, 2000
4: JAN 30, 2000
5: JAN 31, 2000
6: FEB 1, 2000
7: FEB 2, 2000
8: FEB 3, 2000 -- ACTIVE
    ENTER CHOICE:

```

Enter [1] -[8] to select the day, or ENTER to exit.

The current date is the `ACTIVE' date. Note that the data are stored in a “wraparound” buffer. This means that as new data are recorded, old data are erased. In the above list, when data for February 4 is recorded, data for January 27 will no longer be available for display.

Day Totals

The **SHOW DAY** or **PRINT DAY** commands display or print the following information for the specified day:

- Amount of each product dispensed
- Number of transactions

CLEAR TRANS

The **CLEAR TRANS** commands clear all or specific transactions from your system. To prevent accidental erasures, the system prompts you **TWICE** for these commands.

You cannot clear transactions in the “middle” of the buffer.

This version of the **CLEAR TRANS** command clears all the transactions that occurred up to and including the specified transaction on the specified date.

CLEAR TRANS

This command clears all transactions in the buffer. If you issue this command and uncaptured network transactions exist you are prompted with:

```
WARNING - Some bank transactions have not been sent!  
Clear Transactions? (Y/N)
```

CLEAR TRANS XXXX

Clears only this specific transaction number.

System Totals

From the MAIN menu, press [I]

```

-----
SYSTEM TOTALS          **PRIVILEGED**
-----
A: SHOW                A: TRANS DATE TIME CARD ACCT VEHICLE
B: PRINT               B: TRANS DATE TIME CARD ACCT VEH SUMMARY
                       C: MIDNIGHT
                       D: DAY
                       E: SHIFT
-----
C: SHOW                F: PUMP#...TOTALS
D: PRINT               G: PCT#...TOTALS
E: CLEAR
-----
F: SHOW                H: FUELTYPE
G: PRINT
-----
H: SHOW                I: TANK
I: PRINT
J: SET
L: NETWORK
                                     M: FLEET
                                     N: PROMPTS
                                     O: TAX

```

Figure 45: System Totals Menu

The System Totals menu (See *Figure 34*) lets you group transaction data by vehicle, by pump, by PCT, by fuel type (unleaded vs. diesel for example), even by what was dispensed from certain tanks.

TRANS Commands

This version of SHOW TRANS or PRINT TRANS lets you print and show the completed transactions that stored in the System2 transaction buffer. This function is very similar to the SHOW/PRINT TRANS command.

This command displays only product totals, without listing all the transactions. This function is very similar to the SHOW/PRINT TRANS SUMMARY command.

```

-SAVE AUTHZ 'D USERS
-TRANSACTION BUFFER SIZE: 25
*** PRODUCT TOTALS ***

```

UNLEADED: 46.080 GALLON TOT: \$46.08
PREMIUM: 35.840 GALLON TOT: \$35.84
REGULAR: 34.900 GALLON TOT: \$34.90
TRANSACTIONS: 9 GRAND TOTAL: \$116.82
AVERAGE: \$12.98

MIDNIGHT Commands

The MIDNIGHT function summarizes totals for a day. The following data is logged in the System2 journal at 12:00 AM - midnight:

- Daily transaction totals for each POS position of each PCT
- Daily product totals
- Daily transaction records

On the Midnight screen, when a POS position is installed, the pump number is indicated next to the POS number. If one or more of the eight POS positions is not installed, the position is indicated with an 'X'. First, enter the SHOW MIDNIGHT TOTALS command to display a list of dates for the last eight days:

Then, enter a number for the day you want to view. For this example, to see totals for July 5 2002 you would enter "2": QUANTITIES FOR PCT 1:

The current date is the 'ACTIVE' date. Note that the data are stored in a "wrap-around" buffer. This means that as new data are recorded, old data are erased. In the above list, when data for February 4 is recorded, data for January 27 will no longer be available for display.

DAY Commands

The SHOW DAY or PRINT DAY commands display or print the following information for the specified day:

- Amount of each product dispensed
- Number of transactions
- Grand total of product dispensed
- Total dollar amount
- Dollar value of average transaction for the specified day.

SHIFT Commands

The **SHOW SHIFT** or **PRINT SHIFT** commands displays or prints the following information for the current shift:

- Starting time
- Amount of each product dispensed
- Number of transactions
- Grand total of product dispensed
- Total dollar value
- Dollar value of average transaction.

Change Shifts

Along with the transaction data, you are asked if you want to change shifts now. Press [Y] if you want to begin a new shift.

PUMP# Commands

These commands manipulate the totals for a specified pump and its totalizer value. The **CLEAR PUMP** command is privileged; the **SHOW PUMP** and **PRINT PUMP** commands are not. The following prompts appear when you want to show or print pump totals:

```
ENTER PUMP: X
** PUMP X TOTALS **
TOTALS:0.0
TOTALIZER:0.0
```

PCT# Commands

The non-privileged **SHOW PCT#** and **PRINT PCT#** commands let you view totals, and totalizer values, for all pumps connected to a certain PCT. the **SHOW PCT TOTAL** and **PRINT PCT TOTAL** commands are not. You must enter a PCT number. The following is a typical display after issuing a **SHOW PCT 1 TOTAL** command:

```
** SHOW PCT 1 TOTALS **
PUMP 1
TOTALS:0.0
TOTALIZER:0.0
PUMP 2
TOTALS:0.0
TOTALIZER:0.0
```

The privileged **CLEAR PCT TOTAL** command resets totals and totalizer

values to “0”.
PCT positions not installed are not shown.

FUELTYPE Commands

The **SHOW FUELTYPE TOTALS** and **PRINT FUELTYPE TOTALS** commands total all pumps of the same type of fuel. For example, you could use this command to see how much mid grade unleaded was dispensed from all pumps in a station.

TANK Commands

The non-privileged **SHOW TANK** and **PRINT TANK** commands display or print the following for each programmed tank:

- Tank numbers
- Fuel types
- Current quantities
- Low-level alarm quantities

Use the privileged **SET TANK** command to program the quantity currently in a tank, and also the **LOW TANK** alarm level.

Journal Printer

From the MAIN menu, press [J]

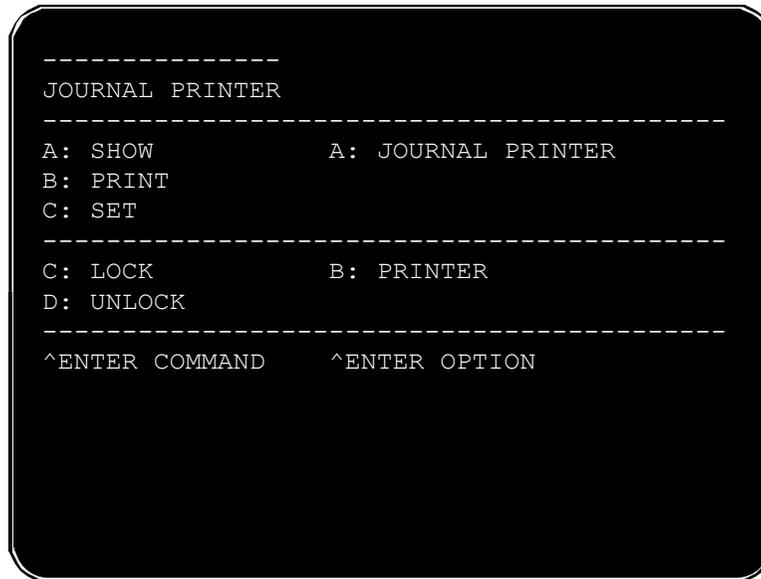


Figure 46: Journal Printer Menu

JOURNAL Commands

An external printer can be connected to the PRINTER port on the back of the FSC to make a hard copy of all transaction data, providing added protection against data loss.

The journal printer records transaction, pump and product numbers, date and time, first card number, the product quantity and dollar total.

The non-privileged **SHOW JOURNAL** and **PRINT JOURNAL** commands display current printer configuration.

Use the privileged **SET JOURNAL** command to specify the system will operate with an external printer. If so, you can also specify which of the following items will be printed:

- Account Name, Driver, Vehicle names. Odometer entry. Miscellaneous entry.
- Account number and second card.

The following is a typical prompt sequence after issuing a SET JOURNAL command and answering [Y] to all prompts:

```
OFFICE JOURNAL (Y/N)
```

```

SET JOURNAL PRINTER OPTIONS (Y/N)
PRINT:
  ACCOUNT, DRIVER, VEHICLE, ODOM, and MISC (Y/N)
  ACCOUNT #, CARD 2 (Y/N)
  STOP LINE SKIP BETWEEN TRANSACTIONS (Y/N)
  JOURNAL ERROR OPTION (Y/N)
  -- ENABLE AUTH ON JOURNAL ERROR (Y/N)

```

The **JOURNAL ERROR OPTION** specifies if the system should authorize fueling when the printer is not operating. The printer may “block” if an error, such as a paper outage, occurs. After fixing the error, unblock the communication with the **SET PRINTER** command.

When the transaction is network captured, one line of information on the transaction is printed on the journal printer like this:

```
33 G 12.35 1 03:34 q:007963 007965 COMDATA
```

What does each part mean?

```

33      System2 sequence number
G       “G” capture is good (or F, failed)
12.35   Dollar amount
1       Product code
03:34   Time of capture
Q:007963 Authorization number
007965   Capture reference number
COMDATA Fleet name

```

LOCK or UNLOCK Commands

The **LOCK** command lets you turn OFF the logging function for the printer, useful for when multiple **PRINT** commands are executed.

If you want to print several items (for example, several types of transaction data) you can keep the printouts together by issuing the **LOCK PRINTER** command. No “incoming” items will be printed until you turn OFF the **LOCK**.

The **UNLOCK PRINTER** command returns the printer to its normal logging function. Any transactions that were locked out are printed when the printer is unlocked.

If no command is generated for 10 minutes while the printer is locked, the system exits the privileged mode and unlocks the printer.

Network Transaction Reconciliation

The SHOW RECONCILIATION command displays System2 data based on configured Fleets/Banks.

Use this command to verify that System2 transactions balance to what the Network reports as received for a given day. The SHOW RECONCILIATION command displays information for the past eight (8) days. Reconcile totals are updated after each transaction is completed.

As the system begins each new day, a new set of totals is started. The previous day's totals are printed after the midnight totals are printed. When the SHoW RECONCiliation command is issued, a list of the last 8 days is displayed.

P>sh recon

```

*** RECONCILLIATION TOTALS ***
  1: OCT 05, 2002
  2: OCT 06, 2002
  3: OCT 07, 2002
  4: OCT 08, 2002
  5: OCT 09, 2002
  6: OCT 10, 2002  --ACTIVE
  7: OCT 03, 2002
  8: OCT 04, 2002

```

Enter CHOICE:

After you select a day for display, the transactions associated to each Fleet/Bank configured in the fleet table (See SHOW/SET FLEET command) are shown. Followed by the accumulative totals for each product.

```

Enter CHOICE: 5
FLEET: 711298 TCH TCH
DATE : OCT 09, 2002
PRODUCT # NAME QUANTITY
-----
  1 UNLEADED 0.000
  2 PREMIUM 0.000
  3 SUPER 0.000
  4 SPEC BULK 0.000
  5 #1 DIESEL 0.000
  6 #2 DIESEL 0.000
  7 #1DIES BLK 0.000
:
 28 EXTRA 0.000
 29 EXTRA 0.000
 30 EXTRA 0.000
 31 EXTRA 0.000

```

```

32      EXTRA                0.000

CONTINUE (Y/N)? y

FLEET: 000000000 Paymentech      Paymentech
DATE : OCT 08, 2002
112  G    28.78 3    1008 1350 q:198948      PAYMENTECH
113  G    31.98 3    1008 1354 q:199711      PAYMENTECH
115  G    33.98 6    1008 1359 q:199716      PAYMENTECH
116  G   101.94 6    1008 1520 q:094712      PAYMENTECH
      :
131  G     4.81 6    1008 1607 q:190215      PAYMENTECH
132  G    28.32 6    1008 1607 Q:090239 BUSY    PAYMENTECH
133  G     0.70 1    1008 2354 q:094834      PAYMENTECH

PRODUCT #   NAME                QUANTITY
-----
      1  UNLEADED                56.333
      2  PREMIUM                 112.600
      3  SUPER                   81.571
      4  SPEC BULK                0.000
      5  #1 DIESEL                0.000
      6  #2 DIESEL               137.832
      7  #1DIES BLK              0.000
      :
      28 EXTRA                   0.000
      29 EXTRA                   0.000
      30 EXTRA                   0.000
      31 EXTRA                   0.000
      32 EXTRA                   0.000

CONTINUE (Y/N)?

```

Paymentech Transaction Batch Totals

This software supports Paymentech's "Host Auto Close" feature. The Paymentech host automatically forces a batch close at 5:00am each day, eliminating the need for you to do end-of-day batch processing.

The SHOW BATCH command lets you display transaction data based on a Paymentech Batch Number, associated with a specific day. Use SHOW BATCH to verify that transactions balance to a Paymentech batch report as recorded for a given day's batch.

SHOW BATCH displays batch information for the past 10 days. Batch totals are updated after each transaction has completed its sale process with Paymentech.

Note

As with the RECONCILE command above, if transactions are cleared or overwritten before a report is run, some transactions may be missing, making it look like your totals are incorrect.

Enter SHOW BATCH for a list of the last ten batch days:

```
P>sh batch
*** Paymentech Batch Totals ***
  1: OCT 07, 2002   - Active
  2: SEP 28, 2002
  3: SEP 29, 2002
  4: SEP 30, 2002
  5: OCT 01, 2002
  6: OCT 02, 2002
  7: OCT 03, 2002
  8: OCT 04, 2002
  9: OCT 05, 2002
 10: OCT 06, 2002
      Enter CHOICE:
```

Choose a day -- all valid fueling transactions for the associated batch are displayed, followed by the cumulative Captured and Failed transaction totals for the selected batch.

Enter CHOICE: 1

```
PAYMENTECH Transactions for: OCT 07, 2002
Trans ? Ttl Sale Prod Date/Time Auth Code Batch# Card Type
-----
  91 C   28.45    1 1007 11:28 q:095857  280001 VISA
  92 C   44.97    2 1007 11:33 q:195864  280001 MASTERCARD
  93 C   57.03    3 1007 11:36 q:095869  280001 AMEX
  94 C   68.81    6 1007 11:40 q:095871  280001 DISCOVER
  95 C   69.95    1 1007 11:43 q:095874  280001 DINERS
  98 C   89.19    2 1007 11:50 q:095886  280001 JCB
 99 F  118.08    6 1007 14:30 i:449    280001 WEX          REEN-
TER ODOMETE
 100 C   15.29    6 1007 14:35 q:094436  280001 WEX
:
:
:
 133 C    0.70    1 1008 23:54 q:094834  280001 WEX
 134 C   37.48    2 1009 09:44 Q:097940  280001 VOYAGER
 135 F   46.17    1 1009 09:44 I:21617   280001 WEX
INVALID PIN
 137 C   54.37    6 1009 09:45 Q:197941  280001 MASTERCARD FLT
 138 C    1.17    1 1009 09:58 q:097939  280001 VISA
 139 C   25.88    1 1009 09:58 Q:095041  280001 WEX

Totals for batch number:      280xxx
Completed Sales Count:        29
Completed Sales Total:       1019.74

Failed Sales Count:           7
Failed Sales Total:          291.54

Total Batch Count:            36
Total Batch Sales:           1311.28
```

Appendices

Appendices

Appendices

Appendix A - Setup Worksheet

System Times

DST Start Date		DST End Date	
System ON Time		System OFF Time	
Receipts ONLY		Time Adjust	
Light ON Time		Light OFF Time	

System Devices

OPT or C/OPT Setup

C/OPT 1	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

C/OPT 2	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

C/OPT 3	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

C/OPT 4	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

C/OPT 5	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds

C/OPT 5	
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____
C/OPT 6	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

PCT Setup

C/OPT 7	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____
C/OPT 8	
Issue receipts?	YES NO If yes, days available_____
Decline message timeout	_____ seconds
Prompt timeout	_____ seconds
Keyboard access?	YES NO If yes, length_____
PCTs to shut off on E-stop	1 2 3 4
Valid pump numbers	_____

System2 can drive up to four Pump Control Terminals. Each PCT controls up to 8 positions.

Copy this page and the next as needed. Circle the appropriate PCT and position numbers.

Note

Most PCT configurations do not require all of this information.

Position	1	2	3	4	5	6	7	8
Pump number								
Pulses per unit								
Maximum fuel per transaction								
Pump Sentry ON?								

Position	1	2	3	4	5	6	7	8
Maximum time per transaction								
Maximum time pump handle can be UP								
Maximum time before first pulse is detected								
Maximum time between pulses								

PCT 2

Position	1	2	3	4	5	6	7	8
Pump number								
Pulses per unit								
Maximum fuel per transaction								
Pump Sentry ON?								
Maximum time per transaction								
Maximum time pump handle can be UP								
Maximum time before first pulse is detected								
Maximum time between pulses								

PCT 3

Position	1	2	3	4	5	6	7	8
Pump number								
Pulses per unit								
Maximum fuel per transaction								
Pump Sentry ON?								
Maximum time per transaction								
Maximum time pump handle can be UP								
Maximum time before first pulse is detected								
Maximum time between pulses								

PCT 4

Position	1	2	3	4	5	6	7	8
Pump number								
Pulses per unit								
Maximum fuel per transaction								
Pump Sentry ON?								
Maximum time per transaction								
Maximum time pump handle can be UP								
Maximum time before first pulse is detected								
Maximum time between pulses								

Installed PCT Positions

PCT #	1	2	3	4	5	6	7	8
1								
2								
3								
4								

Customer Messages

Prompts

LANGUAGE 1 PROMPTS	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	

LANGUAGE 1 PROMPTS (Continued)	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	

LANGUAGE 1 PROMPTS (Continued)

50	
51	
52	

LANGUAGE 2 PROMPTS (NOT ALL SYSTEMS)

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

LANGUAGE 2 PROMPTS (NOT ALL SYSTEMS) (Continued)	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	

Keyboard Messages

KEYBOARD CUSTOM MESSAGES		
Language/Key #	Your Message	Default Message
1/1		YES
1/2		NO
2/1		YES
2/2		NO

Receipt Header

RECEIPT HEADER MESSAGES				
Header Line	Language 1 Message	Language 2 Message (not all systems)	Circle the Color	
1			RED	BLACK
2			RED	BLACK
3			RED	BLACK
4			RED	BLACK

Receipt Trailer

RECEIPT TRAILER MESSAGES				
Trailer Line	Language 1 Message	Language 2 Message (not all systems)	Circle the Color	
1			RED	BLACK
2			RED	BLACK
3			RED	BLACK
4			RED	BLACK

Receipt Body

RECEIPT BODY MESSAGES			
Receipt Line	Language 1 Message	2 Message (not all systems)	Circle the Color

RECEIPT BODY MESSAGES (Continued)				
1			RED	BLACK
2			RED	BLACK
3			RED	BLACK
4			RED	BLACK
5			RED	BLACK
6			RED	BLACK
7			RED	BLACK
8			RED	BLACK
9			RED	BLACK
10			RED	BLACK
11			RED	BLACK
12			RED	BLACK
13			RED	BLACK
14			RED	BLACK
15			RED	BLACK

Bonus Points

ONE BONUS POINT PER _____ CENTS

BONUS POINT MESSAGES				
Receipt Line	Language 1 Message	Language 2 Message (not all systems)	Circle the Color	
1			RED	BLACK
2			RED	BLACK
3			RED	BLACK
4			RED	BLACK

System Parameters

Site ID

Fueltypes

FUEL TYPES			
Type #	Fueling Units	Price per Unit	Product Name
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Fueling Unit Labels

FUELING UNIT LABELS	
Unit Code	Label
1	
2	
3	

Passwords

PASSWORDS	
Access	Password
Main	
Modem	
Show	

Dual Language

ENABLED **DISABLED**

Restrictions

Pump Restrictions

PUMP RESTRICTIONS	
Restriction #	What is Restricted
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Quantity Restrictions

QUANTITY RESTRICTIONS	
Qty. Restriction Code #	Maximum Quantity
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Card and Account Settings

CARD AND ACCOUNT SETTINGS (Circle YES or NO)		
Account No?	YES	NO
Expiration Date?	YES	NO
Monthly Allocation?	YES	NO
Daily Allocation?	YES	NO
PIN?	YES	NO
• If PIN = YES, Card Invalidated After Three Retries?	YES	NO
Save Odometer Entries?	YES	NO
Odometer Reasonability?	YES	NO
Pump Restriction?	YES	NO
Quantity Restriction?	YES	NO
Driver/Vehicle Account Name?	YES	NO
Verified prompts?	YES	NO

Transaction Data Settings

TRANSACTION DATA (Circle YES or NO)		
Enable Wraparound?	YES	NO
Log Unauthorized Transactions?	YES	NO
Display Fields:		
• Account, Driver Vehicle	YES	NO
• Date and Time	YES	NO
• Card 1	YES	NO
• Card 2	YES	NO
• Fuel Type	YES	NO
• Pump Number	YES	NO
• Quantity	YES	NO
• Price	YES	NO
• Total	YES	NO
• Odometer	YES	NO
• Miles per Unit	YES	NO

TRANSACTION DATA (Circle YES or NO) (Continued) (Continued)		
• Miscellaneous	YES	NO
• Receipt Status	YES	NO
• Account Number	YES	NO
• Verified prompts?	YES	NO
• Sent in Computer Format?	YES	NO

System Totals Settings

SYSTEM TOTALS SETTINGS			
Tank Number	Fuel Type	Current Quantity	Low-Level Alert At
1			
2			
3			
4			
5			
6			
7			
8			

Journal Printer Settings

JOURNAL PRINTER SETTINGS		
Print Card 2 Number?	YES	NO
Print Card Name (account, driver, vehicle)?	YES	NO
Print Odometer/Miscellaneous?	YES	NO
Allow Fueling During Printer Error?	YES	NO

Appendix B - Memory Levels & Allocations

Table 18 shows the relationship between RAM quantity, number of transactions, and the number of cards or keys available. All four available levels of RAM are shown. “Minimum Options” and “Maximum Options” refers to the options you enable or disable in the SET CARD procedure.

The memory level is displayed or set through the “RAM” option - See *System Parameters* on page 21.

Table 18: System Transaction Capacity

Memory Level	Transaction Size Code	With this many transactions stored...	...Card capacity with MINIMUM options enabled is:	...Card capacity with MAXIMUM options enabled is:
1 (Standard) 256 kB	2	50	6820	950
	5	125	4150	580
	9	225	580	80
2 (Optional) 512 kB	5	125	18700	2620
	10	250	14200	2000
	18	450	7120	990
	25	625	875	120
3 (Optional) 1 MB	10	250	43300	6090
	20	500	34400	4840
	32	800	23700	3300
	45	1120	12100	1700
	58	1450	580	80
4 (Optional) 2 MB	40	1000	74800	10500
	60	1500	57000	8000
	85	2120	34700	4800
	100	2500	31300	3000
	115	2870	8000	1100
	123	3070	880	120

Messaging is disabled for all figures specified. Card capacity is rounded to a maximum of 3 significant digits

Appendix C - Modem Use

You can program and poll System2 remotely over regular telephone lines with a pair of modems: A site (local) modem on System2 and a remote (host) modem.

Site Modem Configuration

You must use a PC to set up the OPW modem. This modem is available from OPW Fuel Management Systems. The modem attached to System2 must have an “answer only” configuration.

Enter the following parameters for ANY local modem. The OPW modem commands to enter these parameters are shown (these commands are only for the OPW modem).

Table 19: Modem Commands

Parameter	Command
Answers on 1st Ring	ATS0=1
Monitors Data Carrier Detect	AT&C1
Result codes NOT returned	ATQ1
Resets when Data Terminal Ready is turned OFF	AT&D2

Note

Data Carrier Detect (DCD) is sent to the System2 modem. System2 uses DCD to know when a call has been received. Data Terminal Ready (DTR) is output from System2 to let the modem answer.

After entering modem commands listed above, enter `AT&W' to store the configuration permanently. The default baud rate for the modem is 2400.

Host Modem

Use the command **AT&F** to load factory configuration for the remote (host) modem. Default baud rate is 2400.

Modem Password

Factory default modem password is HELLO. To change the modem password, see *System Parameters*.

Appendix D - Using System2 With a PC

This appendix describes the following:

- How to connect a computer to the System2
- Retrieving transaction data from the **System2** in computer format
- Sending configuration data to the **System2** in computer format
- Backing up and restoring card, account and configuration data for the **System2**.

To interface with the **System2** via a PC, you must run an emulation program in your PC. This program is explained later in this appendix.

If the distance between the FSC and PC is *less than 50 feet*, the FSC is considered directly connected to the PC. See *Attaching System2 Directly to a Computer*.

When the distance is *greater than 50 feet*, modems are required. See *Connecting to System2 Via a Modem*.

Caution

BEFORE making any connections, be sure your computer and peripheral equipment (printer, converter, modem, etc.) are OFF.

Connecting System2 to the Computer

Attaching System2 Directly to a Computer

A four-conductor cable connects the **System2** FSC to the PC. One end of the cable is terminated with a DIN connector, the other end has a 25-pin “D” connector.

- The DIN connector plugs into the TERMINAL socket on the rear of the FSC
- The 25-pin connector plugs into your PC, typically in the COM1 or COM2 serial port.

If the “gender” of the 25-pin connector on your computer is the same as that of the communication cable (for example, they are both female), you will have to purchase a “gender-bender” adaptor.

Refer to your PC instruction manual for more information on the serial ports - *not every 25-pin connector on the PC is a communications port.*

Some machines may only have a 9-pin serial port. If so, you will have to purchase an adaptor to convert the 25 pin plug to a 9-pin plug. Most electronic or computer supply stores carry these adapters.

If there is only one serial port on your machine, and it is already being used, you can purchase an additional Serial Card at most computer supply stores. Be sure to read your computer owner's manual prior to buying or installing a card.

Plug the PC power cord into a standard wall socket. You are ready to power up the PC and begin setting up the terminal emulation software.

Connecting to System2 Via a Modem

A modem must be used if you want to communicate with the system from any distance greater than 50 feet.

A Hayes® (or Hayes compatible) modem must be used, because **System2** uses Hayes® commands. Most modems have four sockets, for the following functions:

- A 25-pin “D” socket for the PC
- An RJ11 socket (for TEL line)
- An RJ11 socket (for telephone)
- A POWER IN socket

The modem should have come with the cables you need to make the following connections. (If not, you can purchase what you need at most computer supply stores.)

1. Connect the 25-pin socket to the COM1 or COM2 serial port on the back of your computer.
2. Connect a phone cable from the modem RJ11 “LINE IN” jack to your facility telephone jack.
3. If you want the PC to share its line with a telephone, connect the telephone to the RJ11 modem “TEL” jack.

Note

You cannot use the telephone (for voice communication) and the modem simultaneously.

4. Plug the power adapter into its socket on the modem and into a standard 115 VAC wall socket.

For a PC to communicate with **System2**, run a terminal emulation program. Microsoft Windows ships with a terminal application called Hyperterminal, which is very reliable with OPW fueling systems.

You will need to set the following values (refer to the *System2 Installation Manual* for instructions on changing these settings):

Table 20: System2 Communication Settings

Setting	Value
COM Port	PC port being used
Baud Rate	Must match System2
Parity	Even
Length	7 bits
Stop Bits	1

If you are using direct connection, select the PC COMM port you connected the cable to. If you are using a modem, select your installed Windows modem and enter the phone number of the System2 site.

Data Field Structure

- AUTH FLAG - value of the authorization response flag received from host with the approval response (3 bytes),

Card/Transaction Data Formats

The System2 transaction data format is designed to be read by people, and includes a header with configuration data and labels for each included field. In the display format, the transmission of transaction records can be cued from the keyboard.

To pace the data stream, the transmission of each transaction record must be cued by a specific computer response.

To retrieve transaction data in the computer format, append the prefix **`SHOW'** and the suffix **`CF'** to one of the following commands.

```
TRANSACTIONS
TRANSACTION ###
TRANSACTIONS WHERE DATE = mmm dd, yyyy
TRANSACTIONS WHERE DATE < mmm dd, yyyy
TRANSACTIONS WHERE DATE > mmm dd, yyyy
TRANSACTIONS WHERE TIME = hh:mm am/pm
TRANSACTIONS WHERE TIME < hh:mm am/pm
TRANSACTIONS WHERE TIME > hh:mm am/pm
TRANSACTIONS WHERE CARD = #
```

```
TRANSACTIONS WHERE VEHICLE = #
TRANSACTIONS WHERE ACCOUNT = #
```

The following command will call up transaction 123 in computer format:

```
SHOW TRANSACTIONS 123 CF
```

Search commands can be combined with **'AND'** in the computer format. For example:

```
SH TRANS WH DAT=JAN 1,1996 AND WH TIM>5:00 PM CF
```

When data is requested from **System2** in the computer format, **System2** first transmits the transaction header and the first transaction. This header *always* includes:

- Codes to indicate which transaction fields will be included in the transmitted record(s)
- a 2-digit checksum and a carriage return
- a line feed (**'|CR|LF|'**).

All transactions include the sequence number and Reason For Termination code(s). The fields are included as specified by the transaction field codes listed in the header. All items are separated by a slash (**'/'**).

See *Reason for Termination Codes (Auth. GRANTED)* on page 170 and See *Reason for Termination Codes (Auth. DENIED)* on page 171.

Each record is terminated with **'|CR|LF|'**. The external computer responds with **'|CR|LF|'** to initiate the transmission of the next record. The **System2** will send records each time it receives **'|CR|LF|'** up to the last record. At the last record, the system sends **'//|CR|LF|'**.

If the computer session is terminated by the computer with an **'X'**, **System2** sends **'\\|CR|LF|'**. If access was denied to a customer, only the first four data fields are recorded (and can be transmitted) for that transaction. The graphic below is an example of a transaction data retrieval in the computer format. Note that a data check was *not* included in the header.

The **'SHOW TRANSACTION'** command has been abbreviated to **SH TRANS**.

'|CR|LF|' indicates a carriage return and a line feed.

Indicates a “space pad.” A transaction record is sent as one string. For clarity, the example shows line breaks between fields.

```

External Computer Output  SYSTEM2 Response
-----
SH TRANS 123CF|CR|LF|          abcde fgh i j k l m n o / 07 |CR|LF|
123 / I / TRUXCO --- / SMITH --- / VAN1 --- /
02221989 / 0711 / 0123 / 20001 --- /
60001 --- / 03 / 03 / 0025000 / 00100 /
000002500 / 0066555 / 105 / 1234567890 / 1 / 1234 /
11 / |CR|LF|
|CR|LF|          // |CR|LF|
    
```

Table 21: Transaction Header Format

TRANSACTION HEADER FORMATTING			
Variable	Field Format	Padding	Included...
Number of transactions	4 digits left-justified	zeros	Optionally
Sum of quantities	9 digits left-justified	zeros	Optionally
Transaction field codes	0-15 characters	none	Always
Checksum	2 digits	none	Always

Table 22: Transaction Field Codes

TRANSACTION FIELD FORMATTING			
Variable	Field Format	Padding	Code letter
Account/Driver/Vehicle	9/9/9 characters (total 27 characters)	spaces	a
Date/Time	8/4 digits -- MMDDYYYY/HHMM	zeros	b
Transaction Number	4 digits	zeros	c
Card 1 Number	19 digits	spaces	d
Card 2 Number	19 digits	spaces	e
Fuel Type	2 digits, from 01 to 32 only	zeros	f
Pump Number	2 digits, from 01 to 99	zeros	g
Quantity	7 or 8 digits: #####(##).###	zeros	h
Price	5 digits: ##.####	zeros	i
Total	9 digits: #####.###	zeros	j

TRANSACTION FIELD FORMATTING			
Odometer	1 character and 6 digits		
MPG	4 spaces -- this feature not available	spaces	l
Miscellaneous	10 digits	spaces	m
Receipt Status	0 or 1: "1" = receipt issued, "0" = receipt not issued	none	n
Account Number	4 spaces -- this feature not available	spaces	o
Prompts	9 fields @ 23 characters, left-justified. 3 fields @ 30 characters, left-justified.	spaces	p

Table 23: Card and Account Field Codes

CARD AND ACCOUNT FIELD FORMATTING			
Field Name	Field Format	Padding	CODE
Card/Account Number	19 digits, left-justified	spaces	a
Record Type	8 bytes	none	b
Account Number	4 digits, right-justified	zeros	c
Expiration Date	8 digits: mmddyyyy	none	d
Fuel Totals to Date	8 digits: #####.## (decimal implied)	zeros	e
Fuel Totals Today	8 digits: #####.## (decimal implied)	zeros	f
Monthly Allocation	6 digits: ##### (dollars only, no decimal)	zeros	g
Daily Allocation	6 digits: ##### (dollars only, no decimal)	zeros	h
PIN (card numbers only)	6 digits	spaces	i
Odometer	6 digits	zeros	j
Reasonability	2 digits	zeros	k
Product Restriction	2 digits	zeros	l

CARD AND ACCOUNT FIELD FORMATTING			
Quantity Restriction	2 digits	zeros	m
Driver/Vehicle/Account Name	9 characters	spaces	n
Verified 1 Prompt	21 characters left-justified where: CHAR 1 = Prompt code CHAR 2 = "-" (dash) CHAR 3-21 = Prompt response	spaces	w
Verified 2 Prompts			x
Verified 3 Prompts		spaces	y
Prompt sequence	9 chars left		z

Table 24: Record Type Flags

Byte #	Definition
1	0: Valid 1: Invalidated by manager
2	0: Valid 1: Invalidated by 3 bad entries
3	0: Miscellaneous Entry DISABLED 1: Miscellaneous Entry ENABLED
4	0: Odometer Entry DISABLED 1: Odometer Entry ENABLED
5,6,7,8	0001: Single/Language 1 1001: Single/Language 2 (not all systems) 0010: Driver/Language 1 1010: Driver/Language 2 (not all systems) 0011: Vehicle 0100: Account

Example

00110010 is a Valid Language 1 Driver card with miscellaneous AND odometer entry enabled.

Table 25: Reason for Termination Codes (Auth. GRANTED)

Code	Reason	Cause	Possible Solution
C	Pump error, premature busy	No suggestions	
D	Pump error --reset quantity exceed	Pulses being received without current being sensed or handle switch detection.	Check PV268 DIP switch #6 for correct selection (current sense or handle switch). Check current: s/b 100 mA AC minimum.
E	No 'PUMP HANDLE BUSY'	No current sense or handle switch detection after pump authorization.	Check PV268 DIP switch #6 for correct selection. Check current draw: s/b 100 mA AC minimum. Make sure handle time-out is long enough. Check wiring to PV270 relay board.
F	No fueling pulses	Current sensed or handle switch detected, but no pulses received from pulser.	Check PV268 DIP switch #1 for correct pulser type. Check pulser wiring. Check pump's First Pulse timer.
G	Pump currently active	No suggestions	

I	Normal	Good transaction.	May appear even for incomplete transaction if current sense threshold is too close to actual current draw. Contact OPW Fuel Management Systems Technical Support.
J	Quantity limit exceeded	Card, account or pump limit reached.	Check programming for card, account or pump
K	Total transaction time exceeded	Pump is programmed to dispense fuel only for a programmed length of time.	Check "MAX TIME FOR FUELING" value, and adjust accordingly. See <i>Page 39</i> .
L	Pulser error	Only in flow-switch applications. Pulses not received within five seconds of flow switch activation.	Check pulser. Possible faulty flow switch.
M	Emergency stop	Emergency stop button was depressed during fueling.	If button was NOT pressed, check E-STOP button for short.
N	Missing pulse detected	Current sensed, pulses received, then customer stops pumping. As long as pump is ON, Pulse Timer runs.	Lengthen the Pulse Timer duration, or hang the pump up.
O 01	Communication errors	Power interruption during fueling caused termination of transaction.	Check power source. Are noise filters installed in pump motors, solenoid valves, and contactors?
Z	Manager activated	No suggestions	

Table 26: Reason for Termination Codes (Auth. DENIED)

Code	Reason	Cause	Possible Solution
b	Bad PIN entry	Wrong PIN entered three times.	Verify PIN assigned to card is correct. If yes, check the keypad with FIT test program.
c	Bad odometer entry	Customer card is set for odometer reasonability, and entry falls outside acceptable limits.	Re-enter odometer value. Change reasonability -- <i>Page 99</i>).
c	Bad odometer entry	NOT USED	NOT USED
d	Bad miscellaneous entry	NOT USED	NOT USED
e	User entry time-out	Customer did not enter data after inserting card.	Operator error, or possible keypad malfunction.
f	Card # not in positive file	Invalid card.	
g	Card expired	Card has expiration date assigned to it. This date has passed.	Assign new expiration date to card, or issue new card.

h	Card record expired	Card record in the system is assigned an expiration date, which has passed.	Assign new expiration date to card record, or issue new card.
l	Card invalidated	Card has not been validated for use in this system.	Change validation status of card.
j	Three bad PIN entries	Customer has entered incorrect PIN three times.	Verify PIN assigned to card is correct. If yes, check the keypad with FIT test program.
k	No allocation	Daily or monthly limit has been reached on card or account.	If daily, Customer must wait until midnight to reset daily totals. If monthly, new limits must be programmed or totals cleared.
n	Account expired	The card is assigned to an account that has expired.	Program new expiration date on account.
o	Account invalidated	Card has not been validated for use in this system.	Change validation status for the account.
p	Account numbers do not match	Driver card is not assigned to the same account as the Vehicle card.	Program both cards to the same account.
q	Account record not found	Card is assigned to an account record that has not been programmed into the card/account file.	Program the card into the file.

Checksums

The checksum is a number included with data to ensure the integrity of the data.

The checksum used by the **System2** is a 2-digit number calculated by adding the decimal values of the ASCII characters in a string and truncating the sum.

For example, in the string ``/ABC'`, the decimal values for each character are: ``/'` = 47, ``A'` = 65, ``B'` = 66 and ``C'` = 67. Adding these numbers produces 245. Truncating the number in this case means removing all but the last two digits - for 245, this results in 45.

The checksum is included with transaction, card, and account records sent by the **System2**. You can also checksum each record when using the ``RESTORE'` command. As an example, the following transaction record has a checksum of 08.

```
123/I/123089/1130/000001234/08|CR|LF|
```

Note that when calculating the checksum for a record, you *must* include the slashes (``/'`) in the calculation.

An example of a checksum in a ``RESTORE'` command is:

```
RESTORE STATION12345/beatify/75|CR|LF|
```

The checksum is 75. Note that you *must* include the slash and the blank space (between ``RESTORE'` and ``STATION12345'` in the example above) in the checksum calculation.

Calculating a Checksum

The following BASIC program can be used to determine the checksum for a line of data:

```
10 CHKSUM% = 0
20 TRANSACTION$= "LINE OF DATA 0123456789"
30 NUMCHARS% = LEN(TRANSACTION$)
40 FOR INDEX% = 1 TO NUMCHARS%
50 SINGLECHAR$=MID$(TRANSACTION$,INDEX%,1)
60 CHKSUM% = CHKSUM% + ASC(SINGLECHAR$)
70 NEXT INDEX%
80 TEMP$= STR$(CHKSUM%)
90 TEMP$= RIGHT$(TEMP$,2)
100 PRINT TEMP$
110END
```

ASCII Character Table

Decimal Value	ASCII Char	Decimal Value	ASCII Char	Decimal Value	ASCII Char	Decimal Value	ASCII Char
032	space	056	8	080	P	104	h
033	!	057	9	081	Q	105	I
034	“	058	:	082	R	106	j
035	#	059	;	083	S	107	k
036	\$	060	<	084	T	108	l
037	%	061	=	085	U	109	m
038	&	062	>	086	V	110	n
039	'	063	?	087	W	111	o
040	(	064	@	088	X	112	p
041	)	065	A	089	Y	113	q
042	*	066	B	090	Z	114	r
043	+	067	C	091	[	115	s
044	,	068	D	092	\	116	t
045	-	069	E	093	]	117	u
046	.	070	F	094	^	118	v
047	/	071	G	095	_	119	w
048	0	072	H	096	'	120	x
049	1	073	I	097	a	121	y
050	2	074	J	098	b	122	z
051	3	075	K	099	c	123	{
052	4	076	L	100	d	124	|
053	5	077	M	101	e	125	}
054	6	078	N	102	f	126	~
055	7	079	O	103	g		

Backing up the card validation data allows you to safeguard this information and to minimize system downtime when modifying or repairing a System2. You can also backup one and restore the data to another System2 systems are to have the same data base.

The BACKUP and RESTORE commands must be included as part of a computer program that can format, store and transmit the raw computer data produced by the System2.

The Phoenix for Windows software package from OPW Fuel Management Systems provides all the know-how you need to backup and restore card data quickly and easily using an IBM®-compatible personal computer.

Phoenix is available from your distributor or directly from OPW Fuel Management Systems.

BACKUP/BACKUP Card Commands

These privileged commands transmit card and account data from the System2 data base to an external computer.

From an external computer, the BACKUP commands request System2 to transmit site id, card and account field code(s), checksum, carriage return and a line feed ('|CR|LF|'), all separated by a slash (/).

The records themselves are then sent following each '|CR|LF|' sent by the external computer. After the last record, the System2 sends '///|CR|LF|'.

- If NO card number is specified, backup starts transmission at the first card/account record
- If a card number is specified, the transmission starts at the specified record. Because the records are sorted by number, this command allows you to backup a latter portion of the file.

Card and account records are sorted only by number; that is, account 2222 would be between card 1111 and card 3333. The BACKUP commands back up both record types.

There is no command to specify only card or only account.

The following is an example of the information exchanged with the 'BACKUP' command.

In this example, 'STATION12345' is the site ID and '44' is the checksum. The '-' indicates a "space pad." Card and account records are sent as single strings. For clarity, the example above shows line breaks between fields. RESTORE site id (/fields) (/checksum)

This privileged command loads card and account information from an external computer to the System2 data base.

The SITE ID, CARD or ACCOUNT numbers (field "a") and RECORD TYPES (field "b") must be specified. You may specify any additional field codes you wish to restore (see Restoring Fields below). You may also include a checksum for the command line and/or the data records.

Note

Specify field codes with lower-case letters. Specify the RESTORE command and any site ID letters with UPPER-CASE.

The following information exchanged with the 'RESTORE' command.

```

|CR|LF|                                     P>
RESTORE STATION12345/abcdefghijklmnop/
44|CR|LF|                                     |CR|LF|
10004000000000000000/00100001/1234/
020219961996199619961996199619961996/00000809/001000/000100/--5903/
0014060/02/00/01/RIKARD---/54|CR|LF|         |CR|LF|
//|CR|LF|                                     P>

```

The ``|CR|LF|`` indicates a carriage return and a line feed. The ``-`` indicates a “space pad.” A card or account record must be sent as one string. For clarity, the example above shows line breaks between fields.

Restoring Fields

The **System2** allocates space in its data base when it receives the field codes.

You can restore a different number of fields than were in the data base when it was backed up. For example, if a field was accidentally omitted during configuration, you can add that field without losing any card or account data.

First, back up the current card or account data. Then, use the **SET CARD BUFFER** command to include all the old and new fields. *This destroys the old data!*

Finally, restore the card or account data, specifying the original fields *plus* the new field(s). The new fields can be filled with blanks or actual data.

Similarly, you can restore fewer fields - this increases the number of transactions or card and account records to be retained by the **System2**.

Backing up the **System2** is like taking a snapshot of the data base. When data is restored, **System2** returns to exactly the same state as when backed up.

Frequent data base backups reduce the need to update any specific fields (e.g. mileage) in the data base when you use the **RESTORE** command.

UPDATE site id (/fields) (/checksum)

This *privileged* command modifies existing card or account records in the **System2**.

SITE ID and CARD # must be specified for this command; all other field changes are optional. A field *must* be present in the original record to be updated. Checksum data can be sent if desired.

The sequence for the **UPDATE** command is similar to that of **RESTORE**

Note

The message 'SYSTEM DOWN' is shown on the FIT display while backing up or restoring configuration data. Terminal cannot be used by customers while this message is displayed.

The '\|CR|LF|' indicates a carriage return and a line feed. The '-' indicates a "space pad." A card or account record must be sent as one string.

SYSDBACKUP Command

When this command is executed, **System2** transmits the configuration data and the version number of the system. *You CANNOT back up configuration data while a transaction is in progress.*

SYSRESTORE #####(#)/<checksum> Command

When this command is invoked, **System2** does the following:

- tests the FSC version for compatibility
- clears the card buffer
- clears all transactions
- restores configuration data
- restarts all tasks
- optionally changes the size of the system memory (RAM)

SYSRESTORE requires the FSC version number and checksum be specified. Version number must be the same for *both* the system that was backed up and the system that will be restored (the letter after the version number can be ignored for this command).

The FSC version number is printed on the cover of this manual; it can also be displayed using the **SHOW SYSTEM** command. The decimal point is *not* included.

For example, if a **System2** with FSC software version 21.01E and standard RAM memory is backed up, the command **SYSRESTORE 2101** can be used to reconfigure the same system or another system with the same FSC version number and the same size memory.

Differing RAM Size

SYSRESTORE also lets you restore differing size system memory (RAM) by specifying the size code (#) for the system to be restored. What's RAM size code? See *RAM* on page 80.

*The memory size specified with the **SYSRESTORE** command MUST match the actual memory size of the **System2** being restored!*

If the specified memory is larger than the system's memory, **System2** locks up and must be cold started (the power and battery turned OFF and then ON). If the specified memory is smaller than the system's memory, **System2** will *not* be able to access the additional memory.

The **SYSBACKUP** command takes a “snapshot” of **System2** data. Any configuration data that may have been changed since the last backup - time, date, tank levels, etc. - must be re-entered after executing the **SYSRESTORE** command.

No pumps can be active at the time of a **SYSBACKUP** or **SYSRESTORE** command.

Appendix E - Troubleshooting

Problem/Solution Table

Problem	Possible Solution(s)
No FIT display messages	Adjust "display viewing angle" potentiometer (on top of the display PC board).
FAULTY PUMP message	Three "zero-quantity" transactions. Reinstall pump with INSTALL PCT # POSITION # command. Bad pulser, replace.
RESET QUANTITY EXCEEDED message	Current Sense/Pump Handle selector switch in wrong position. Change Switch #1 on PV-268 board.
SYSTEM DOWN message at <i>one</i> FIT	FIT not installed. Petro-Net wiring problem. FIT board malfunction. Run COMM test to check board, replace if needed.
SYSTEM DOWN message at <i>all</i> FITs	FIT board malfunction. Run COMM test for each FIT board; replace if needed. FSC board malfunction. If all FIT boards pass COMM test, replace FSC board.
INCORRECT CARD message	Incorrect network number encoded on card(s). Replace card. Incorrect network number programmed in FIT EPROM. Replace EPROM.
SYSTEM FULL message	Printer error. Clear the error. Transaction buffer filled. Clear buffer. Buffer wraparound not enabled. Turn ON wraparound feature.
MEMORY ERROR message	Expanded memory failure. Battery switch OFF during power failure? Battery failure. Replace battery. Expanded Memory failure. Replace FSC board.
Pulser not counting pulses.	ACTIVE/PASSIVE pulser switch set incorrectly. Change Switch #1 on PV-268 board.
Newly programmed messages or pump parameters not working.	Changes were not downloaded. Use DOWNLOAD command.
Printer not printing transactions .	Communications blocked by printer error. Unblock with SET JOURNAL command. Printer is locked. Unlock printer with UNLOCK command
Printer Error LED is flashing.	1 flash - paper jam 2 flashes - paper low (or out) 3 flashes - printer cutter jam
Black square on FIT display after card is inserted .	NOT ALL SYSTEMS. Card expects second language but no message for second language was programmed.

Troubleshooting Flowcharts

The flowcharts on the following pages give you advice on what to do when the these messages appear on the FIT display:

FAULTY PUMP? RE-ENTER
INCORRECT CARD
INCORRECT READING
SYSTEM DOWN
INVALID PUMP, RE-ENTER
PUMP HANDLE? RE-ENTER

Another three charts give you advice when there is:

- No quantity shown on the transaction receipts,
- No communication between the FSC and the PC,
- A modem doesn't answer the System2.

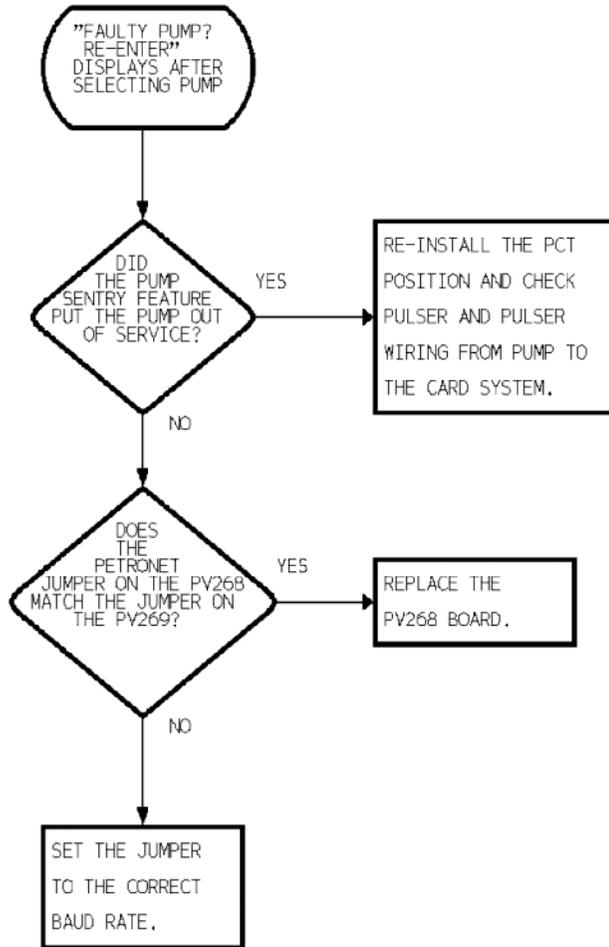


Figure 47: Diagnosing "Faulty Pump Reenter" Message

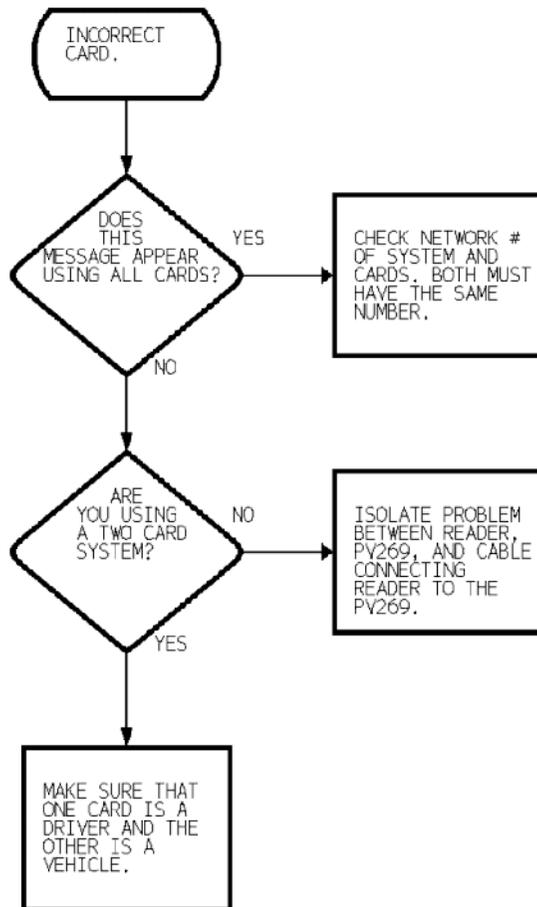


Figure 48: Diagnosing "Incorrect Card" Message

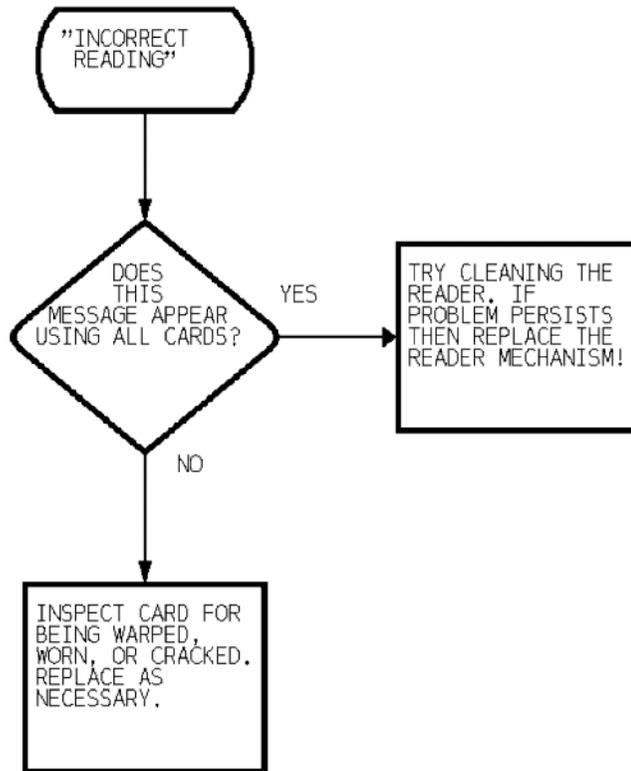


Figure 49: Diagnosing "Incorrect Reading" Message

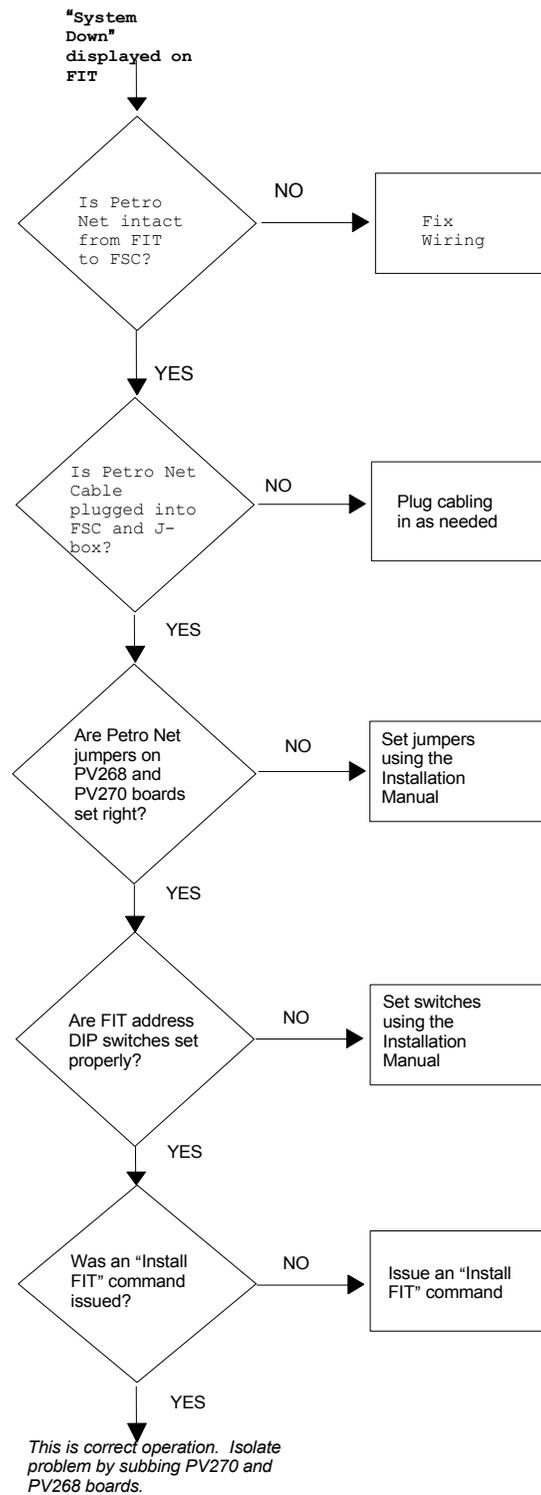
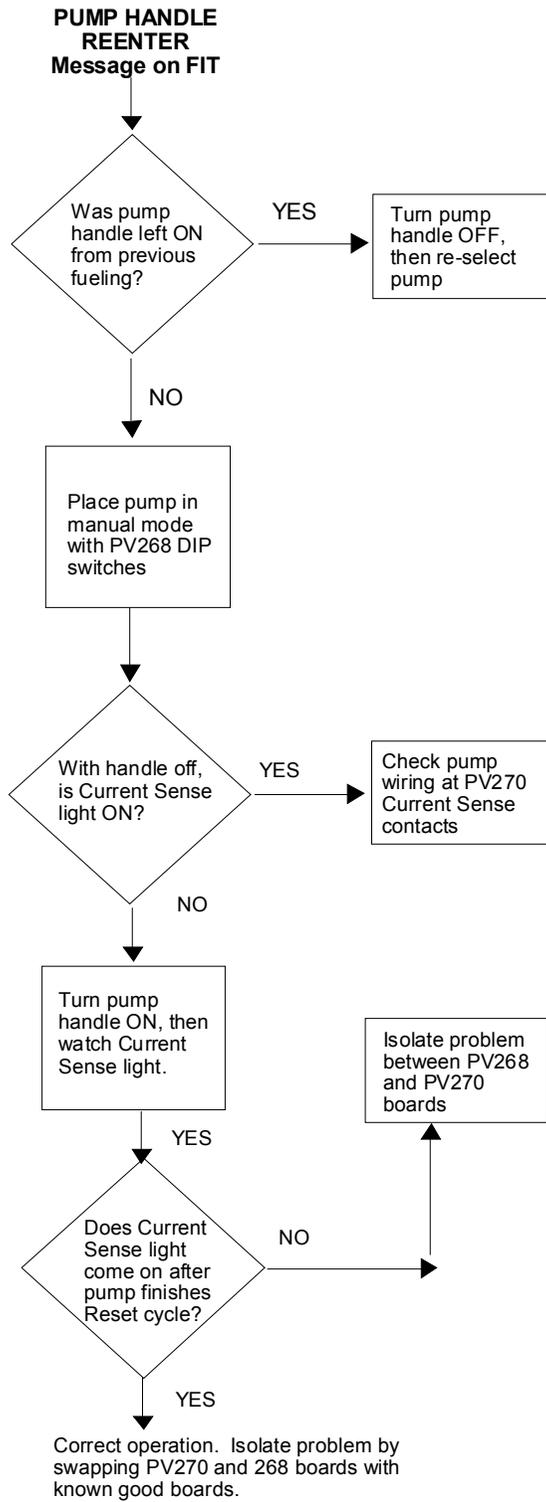
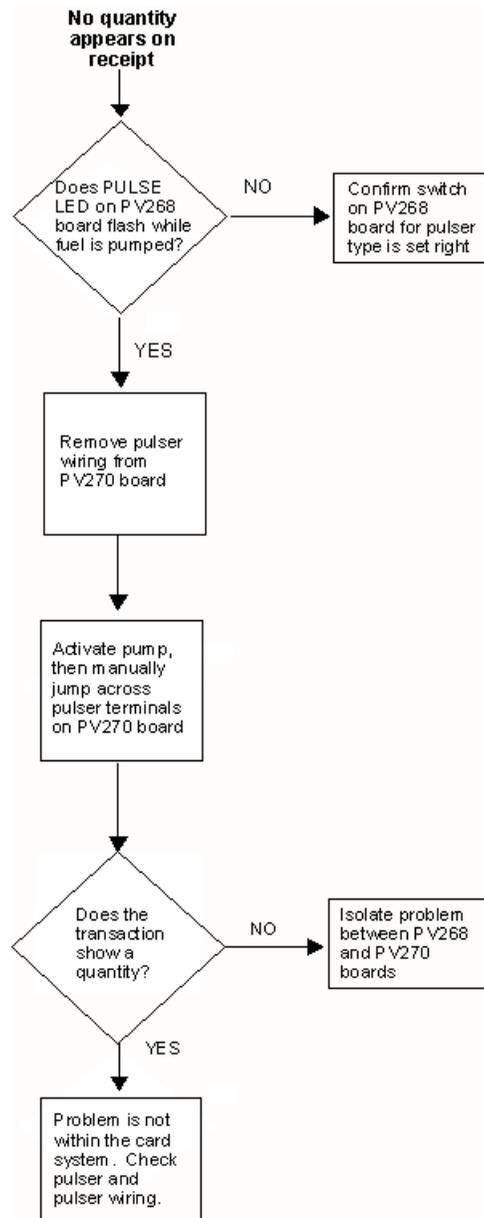
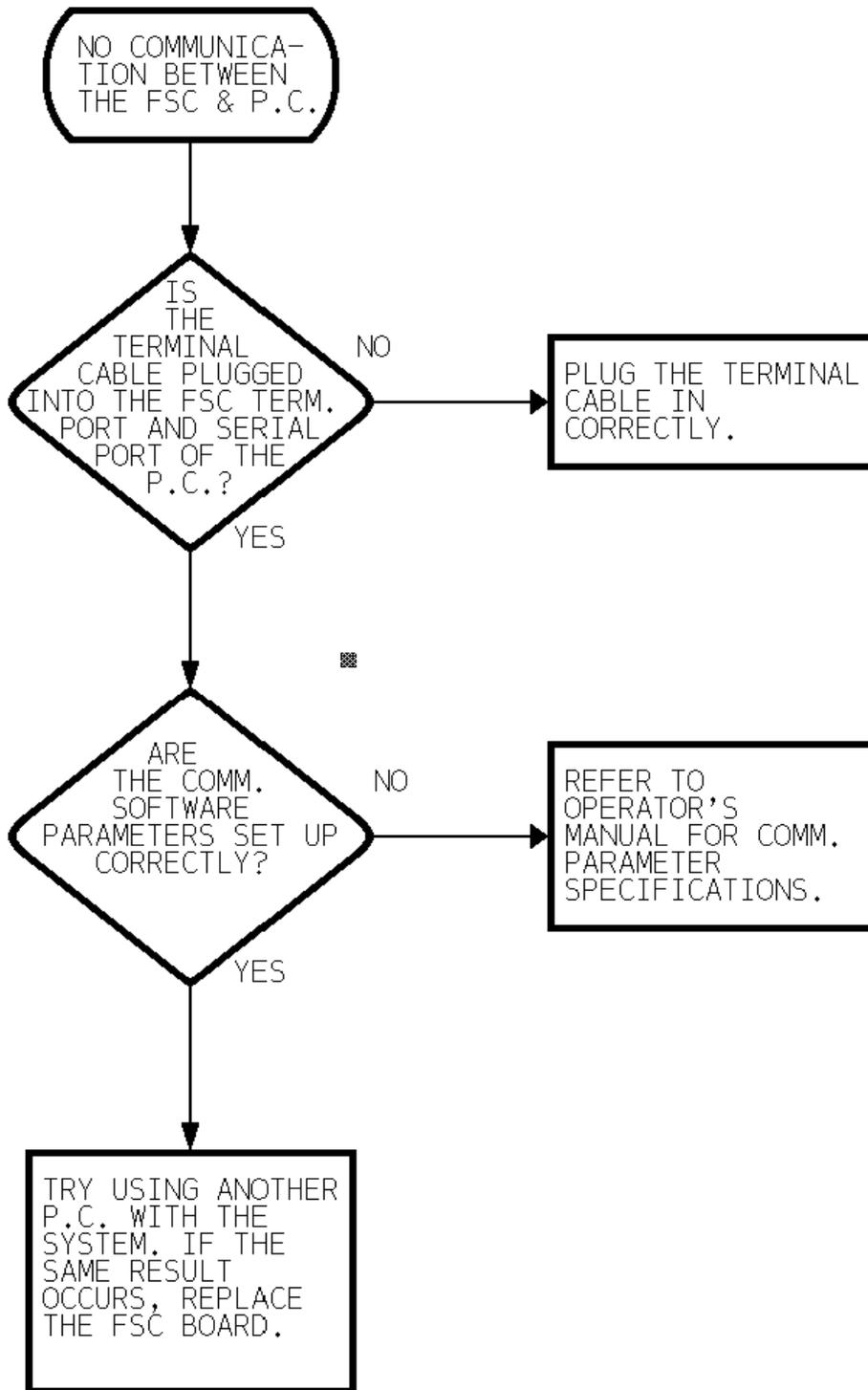
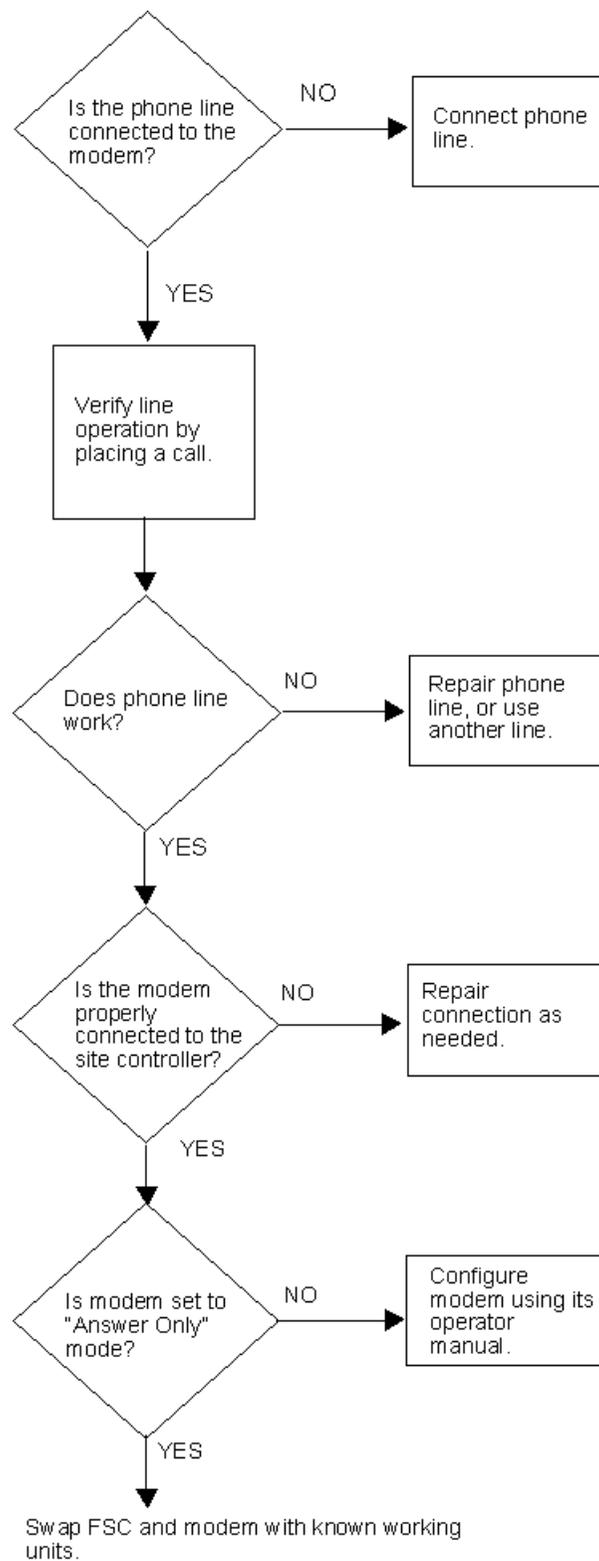


Figure 50: Diagnosing "System Down" Message









Single card # 0300000000000001

Appendix G - Receipt Printer Maintenance

This appendix tells you how to load paper, clear paper jams, install a new printer, install a replacement Printer/Cutter assembly and replace the Chute/Bracket/Sensor assembly

Loading Paper

See *Figure 51*. The thermal printer accepts metric size thermal paper 59.5mm (2.3 inches) with a maximum diameter of 120mm (4.7 inches). The thermal paper has a heat-sensitive coating on one side. The thermal printer 'burns' characters into this coating.

During cold ambient temperatures the OPT unit is automatically heated, and during hot ambient temperatures, the inside of the unit can get very hot as well. For these reasons, high heat resistant paper should be used.

Replacement paper is available from OPW Fuel Management Systems. Ask for part number **54-1106**.

Loading Procedure

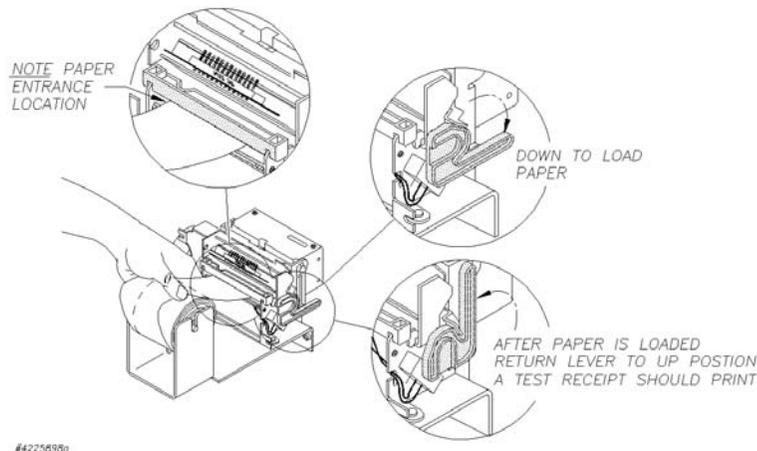


Figure 51: Loading Paper into the Receipt Printer

1. Make sure the OPT power is on.
2. Turn the Paper Load Handle to the DOWN position.
5. If necessary, remove the paper roll/spindle from the bracket.

3. Cut the new paper with scissors to leave a sharp edge, then feed the paper into the printer. The paper goes in just below the black plastic bar. Make sure the paper feeds from the *top* of the roll - the side with the thermal coating. If the roll is reversed, the receipts will be blank.
4. Insert the spindle in the new roll, then place the roll into the bracket.
5. Turn the paper Load Handle to the UP position. The printer should automatically print a test receipt. If a receipt did not print, refer to the Troubleshooting section of this guide.

Clearing a Paper Jam

See *Figure 52* on *page 191*.

If the paper jam appears to be in the printer rollers or the cutter, the cutter must be removed from the printer.

1. TURN OFF THE OPT POWER!
2. If the jam is severe, remove the door from the enclosure (see the C/OPT manual M39-00.01).
3. Tear the paper and remove the paper roll and spindle from the bracket. Leave enough paper sticking out from the printer so it can be easily grasped.
4. Remove the Printer/Cutter assembly from the bracket by unscrewing the two thumbscrews. Disconnect any wires if necessary, making sure you note where they came from. Make sure that the paper chute is clean, and free from obstructions.
5. Turn the Paper Load Handle to the DOWN position. Try to remove the paper from the printer/cutter assembly. If successful, reinstall the printer/cutter assembly, insert a roll of paper and test the printer for proper operation by printing a test receipt.
6. If the paper cannot be pulled out of the Printer/Cutter assembly, open the cutter assembly and remove any paper lodged there.

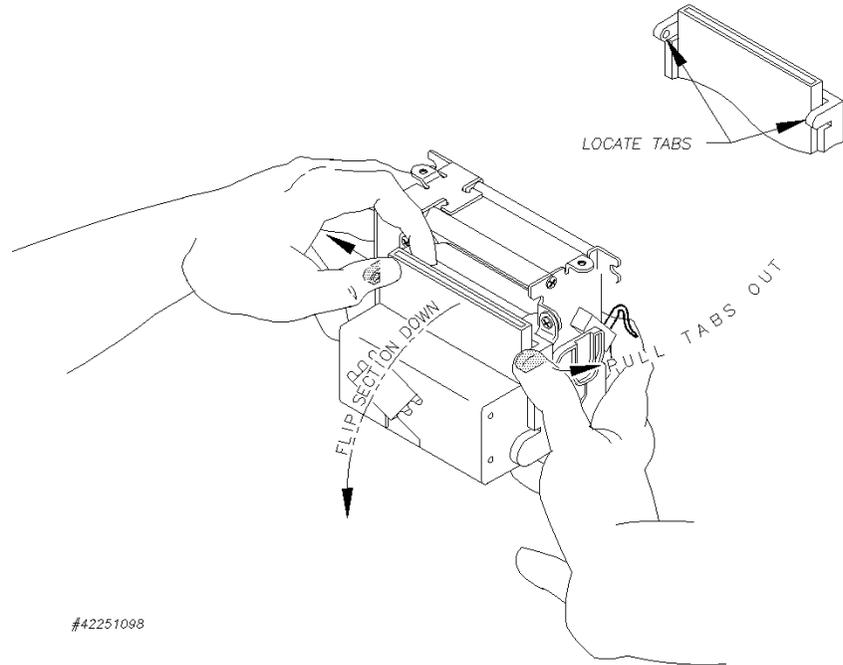


Figure 52: Clearing a Jam

6. If paper is still jammed, it may be necessary to remove the cutter from the printer. Remove any paper jam
7. ed in the printer rollers or the cutter.
7. Reattach the cutter to the printer.
8. Reattach the Printer/Cutter assembly to the bracket. Reconnect any wires you previously disconnected.

Installing A New Receipt Printer

1. TURN OFF OPT POWER!
2. Remove the door from the enclosure (see OPW Fueling Systems document number).
3. Note where the buzzer cable attaches to the circuit board, then disconnect it.

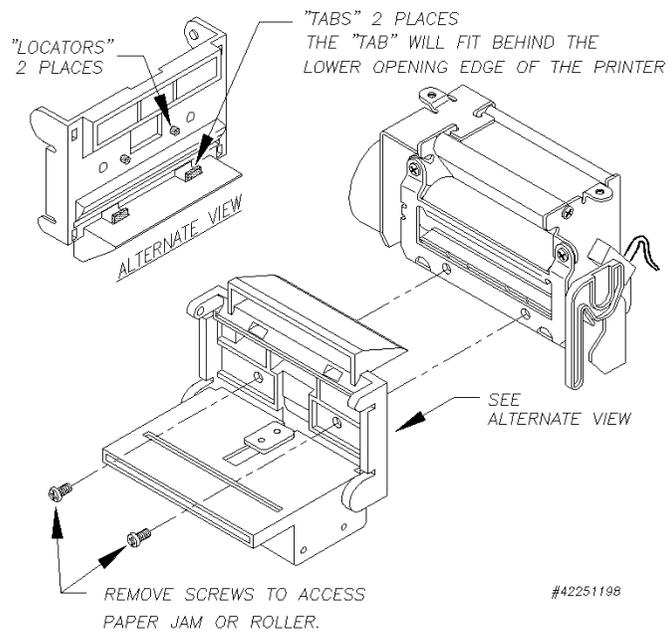


Figure 53: First-Stage Disassembly

8. See Figure 54. Remove the four screws from the buzzer cover and from the hold-down plate.

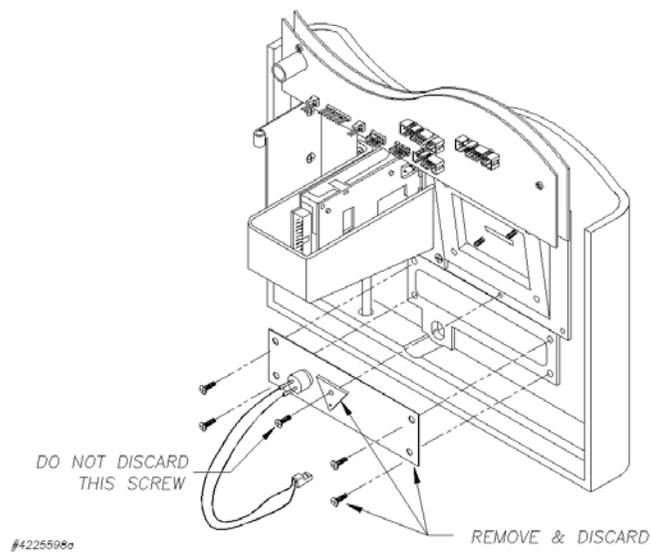


Figure 54: Removing the Buzzer Cover

9. Replace the one center screw.

10. Discard the four screws, plate, gasket and buzzer. The Receipt Printer Option has a buzzer of its own.
11. Remove any leftover gasket material from the door.
12. See Place the supplied gasket on to the chute. Use the provided screws to mount the Receipt Printer Option to the door.

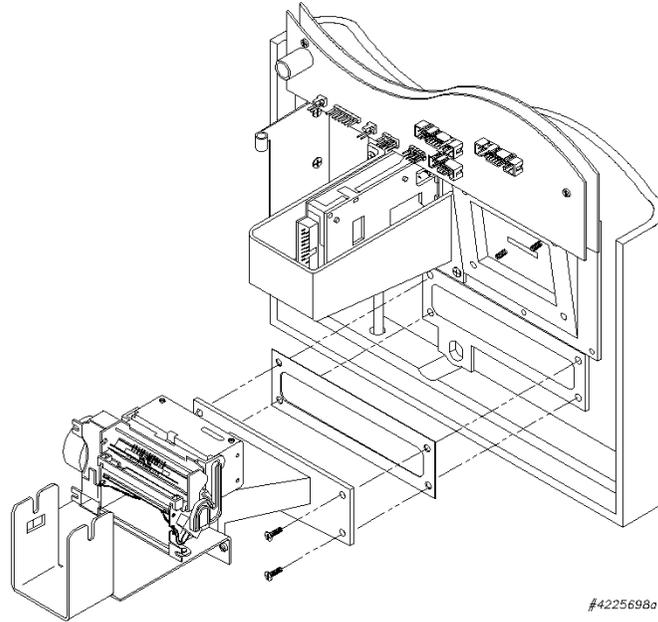


Figure 55: Mounting the Printer

13. Refer to *Figure 56* on *page 194* if you have an OPT unit with a PV290 OPT Controller board, or to *Figure 56* on *page 194* if you have an OPT unit with a PV297 or PV299 OPT Controller board.

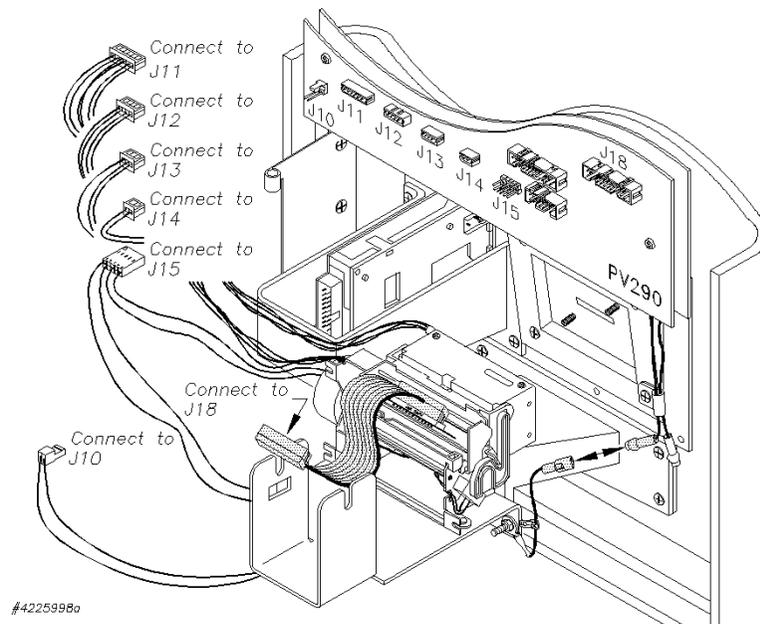


Figure 56: OPT with PV290 Board

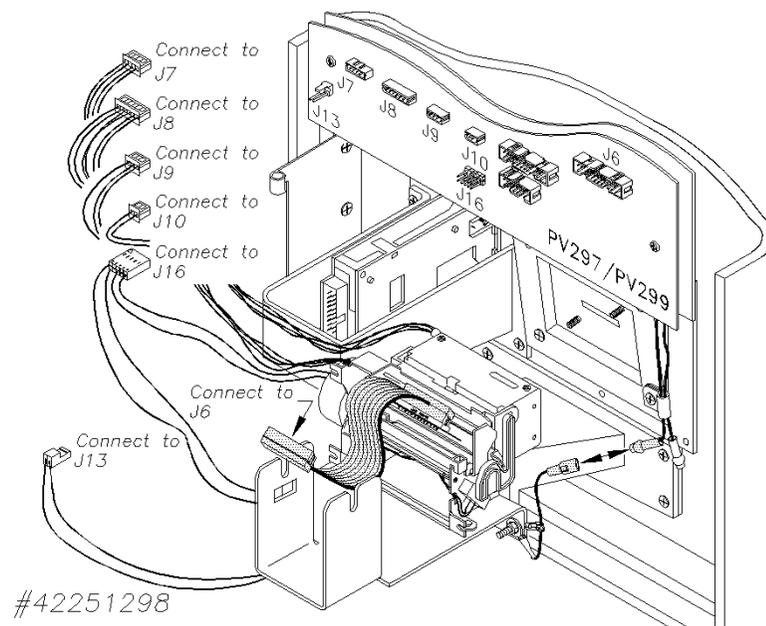


Figure 57: OPT with PV297 or PV299 Board

The board number can be found on the right-hand edge of the board. Connect all cables to the circuit board. Connect ground wire as shown.

4. Reinstall door on enclosure (see OPW Fuel Management Systems manual number M39-00.01, C/OPT Installation and Operation manual).
5. Load a roll of paper (see *Loading Paper* on page 189).

Replacing the Printer/Cutter Assembly

1. TURN OFF OPT POWER!
2. Remove the door from the enclosure (see OPW Fuel Management Systems manual number M39-00.01, C/OPT Installation and Operation manual).
3. Noting their locations, disconnect all cables coming from the old Printer/Cutter assembly from the circuit board.
4. See *Figure 58*. Remove the Printer/Cutter assembly from the bracket by unscrewing the two thumbscrews on the underside of the bracket.
5. Place the new Printer/Cutter assembly on the bracket and secure with the two thumbscrews.

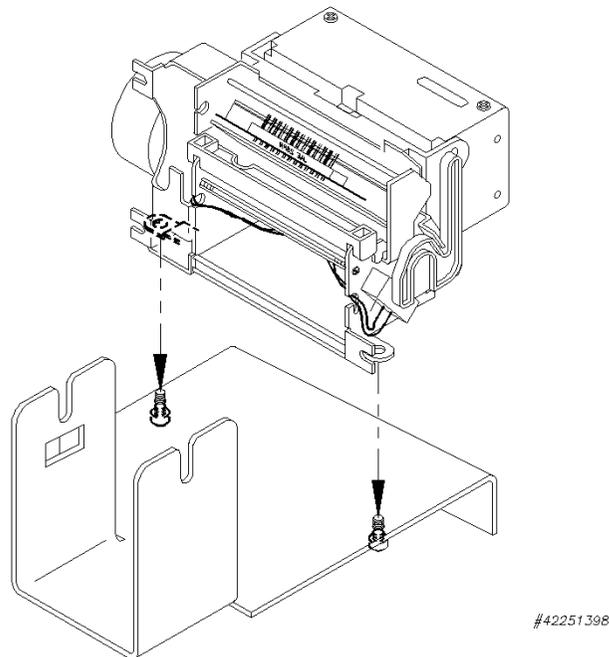


Figure 58: Printer/Cutter Removal and Reinstallation

6. Connect all the cables to the circuit board.
7. Re-install the door on the enclosure ().

8. Turn on the OPT power.
9. Load a roll of paper (see *Page 189*).

Replacing the Chute/Bracket/Sensor Assembly

1. TURN OFF THE OPT POWER!
2. Remove the door from the enclosure (see the C/OPT manual, M39-00.01).
3. Turn the Paper Load Handle to the DOWN position. Remove any paper from the printer.
4. Remove the Printer/Cutter assembly from the bracket by unscrewing the two thumbscrews (*Figure 58 on page 195*). Move the printer/Cutter assembly to one side. Disconnect Printer/Cutter cables from the circuit board if necessary, making sure you note where they came from.
5. Note where the sensor cable and buzzer cable attach to the circuit board, then disconnect the cables from the circuit board.
6. Disconnect the ground cable.
7. To remove the Chute/Bracket/Sensor assembly from the door, remove the four screws from the assembly. Set the four screws aside.
8. Remove any leftover gasket material from the door.
9. See *Figure 59 on page 197*. Place the supplied gasket on to the chute. Use the provided screws to mount the new Chute/Bracket/Sensor Assembly to the door. Replace the Printer/Cutter assembly on the bracket (*Figure 58 on page 195*).
10. Connect all cables to the circuit board. Connect ground cable as shown.
11. Re-install door on the enclosure (see C/OPT manual, M39-00.01).
12. Load a roll of paper (see *Replacing the Printer/Cutter Assembly on page 195*).

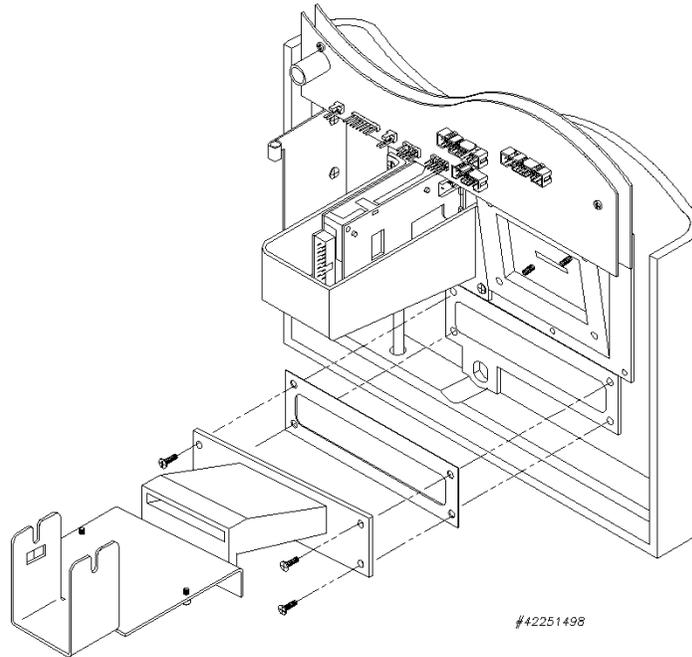


Figure 59: Chute/Bracket/Sensor Installation

Troubleshooting

In order to help you with any difficulties you may encounter, here are some general problems and possible causes. If you are still having trouble, please contact OPW Fuel Management Systems Technical Service department at (708) 485-4200.

Printing blank receipts

- Out of paper
- Paper is not thermal paper
- Paper is loaded incorrectly (it should feed from the top of the spool)
- Printer is defective
- Fault on the OPT Controller board
- Printer wires/cables not connected or seated properly

Prints receipts but reports that paper is out

- Paper is threaded over the black bar instead of under it.
- Inoperative paper out sensor on printer
- Fault on the OPT Controller board

- Printer wires/cables not connected or seated properly

Printer does not feed paper

- Paper jam
- Paper Load Handle is not in the up position
- Printer motor is defective
- Fault on the OPT Controller board
- Printer wires/cables not connected or seated properly

Cutter does not cut after printing a receipt

- Chute sensor failure. Check the following values while in Test/Configuration Mode (Refer to the OPT User's Guide):

<u>Condition</u>	<u>Acceptable Values</u>
Paper in chute	0 - 200
No paper in chute	800 - 1024
Chute sensor threshold	600

- Cutter wires not connected or seated properly
- Cutter mechanism is defective
- Fault on the OPT Controller board

Appendix G - Paymentech Network Configuration

This appendix shows a step by step process used to configure the Paymentech Network. The responses shown are intended as a guide. Your responses should be specific to your sites configuration needs.

Connect to the System2 using a terminal emulation program such as; HyperTerminal. Once connected you should see:

```
** SET DATE and TIME **
>
```

Following the steps below, you can quickly configure you system for use. First Log in to gain Privileged Access, and set time and date:

```
** SET DATE and TIME **
>hello
ENTER MAIN PASSWORD:
HELLO!
P>set time
Enter time (XX:XX AM/PM): 9:58 am
  JAN 01,1990   09:58 AM
P>set date
Enter Date (MMM DD, YYYY): apr 10, 2003
  APR 10,2003   09:58 AM
```

Set the RAM level, this is the amount of memory installed in the FSC

```
P>set ram
OPTIONS:
  0 - STD (level 1)
  1 - EMA (level 2)
  2 - EMB
  3 - EMC (level 3)
  4 - EMD (level 4)
  5 - EME
  Enter option: 4
  Current option: EMD (level 4)
P>
```

Configure the Transaction and Proprietary Card file buffers

Even if you are not using the Proprietary feature of the System2 you MUST configure the Card file buffer.

```
P>Set card
  1 - Specify Card/Account buffer size
  2 - Define Card/Account record
  3 - Clear Card Record Totals
  4 - Reconcile Card Record Allocation
  5 - Clear All Account Record Totals
  6 - Reconcile Account Record Allocation
  7 - Month End Totals
  8 - Set Keyboard Card Control Data
  9 - Additional Options
  X - Exit
    Enter Choice: 1
    NOTE: Transaction and message buffer will be CLEARED ! (Y/N)? y
-- Enable MESSAGING (Y/N)? N
```

If you are not using Proprietary Cards, set this number as high as the system will allow.

```
Enter transaction size CODE: 45
# of Cards/Accounts (MIN OPTIONS): 66420
      (MAX OPTIONS): 9340
# of transactions      : 1250
# of messages         : 0
--Save this CONFIGURATION (Y/N)? y
  1 - Specify Card/Account buffer size
  2 - Define Card/Account record
  3 - Clear Card Record Totals
  4 - Reconcile Card Record Allocation
  5 - Clear All Account Record Totals
  6 - Reconcile Account Record Allocation
  7 - Month End Totals
  8 - Set Keyboard Card Control Data
  9 - Additional Options
  X - Exit
    Enter Choice: 2
    Card/Account Records: Card/Account storage NOT yet defined
    Specify Card/Account record (Y/N)? y
    --Card/Account file will be DESTROYED !!! Sure (Y/N)? y
```

If using the Proprietary Card file, set these fields as needed. Otherwise hit <Enter> leaving all the options set to “No”.

```
ACCOUNT #'S (Y/N)? N
EXPIRATION DATE (Y/N)? N
```

```

MONTHLY ALLOCATION (Y/N)? N
DAILY ALLOCATION (Y/N)? N
PIN # (Y/N)? N
SAVE ODOMETER ENTRIES (Y/N)? N
PUMP RESTRICTION (Y/N)? N
QUANTITY RESTRICTION (Y/N)? N
DRIVER / VEHICLE / ACCOUNT NAME (Y/N)? N
VERIFY 1 (Y/N)? N
VERIFY 2 (Y/N)? N
VERIFY 3 (Y/N)? N
PROMPT-SEQ. (Y/N)? N
  Maximum Cards/Accounts: 66420
  1 - Specify Card/Account buffer size
  2 - Define Card/Account record
  3 - Clear Card Record Totals
  4 - Reconcile Card Record Allocation
  5 - Clear All Account Record Totals
  6 - Reconcile Account Record Allocation
  7 - Month End Totals
  8 - Set Keyboard Card Control Data
  9 - Additional Options
  X - Exit
    Enter Choice:
P>

```

Configure the information seen when viewing transactions

```

P>set trans
Set wrap around options ? y
  -Enable wrap around ? y
  -Write Over NON-CAPTURED or FAILED Transactions ? N
Re-Define Transaction ? y
  -TRANS = Unauthz'd users also ? N
Specify displayed fields ? y
Enter 'Y' to display the field:
ACCOUNT, DRIVER, VEHICLE ? y
DATE & TIME ? y
TRANS #      ? y
CARD #1     ? y
CARD #2     ? y
FUELTYPE    ? y
PUMP        ? y
  HOSE      ? y
QUANTITY    ? y
PRICE       ? y
TOTAL       ? y

```

```

ODOMETER      ? n
DISTANCE PER UNIT ? n
MISCELLANEOUS ? n
RECEIPT STATUS ? y
ACCOUNT #      ? y
PROMPT ENTRIES ? y
  Send in Computer format ? y
  --Computer format check data in header ? y
P>

```

Fuel product codes - 01 through 32 - are sent to Paymentech during authorization request. You MUST verify with them, that the codes assigned to each product are configured as needed.

NOTE

When authorizing Wright Express (WEX) cards via Paymentech, the WEX fueltype codes are normally used by Paymentech for all transaction/card types. Contact Paymentech or Wright Express for a list of required codes.

```
P>set fueltype
```

#	Name	Units	Price	TRE	COM	UNI	FMGC	QFN
1	UNLEADED	LITERS	1.000	GUS	0	032	002	12
2	DIESEL	LITERS	1.000	GPS	0	006	004	09
3	TE DIESEL	LITERS	1.000	GSS	0	005	003	10
4	REFER	LITERS	1.000	MSC	0	025	N/A	NA
5	#1 DIESEL	LITERS	1.000	D1S	1	010	030	03
6	#2 DIESEL	LITERS	1.000	D2S	2	001	005	06
7	#1DIES BLK	LITERS	1.000	MSC	0	013	N/A	NA
8	KERO BULK	LITERS	1.000	MSC	0	049	N/A	NA
9	#2DIES BLK	LITERS	1.000	MSC	0	004	N/A	NA
10	UNLEAD BLK	LITERS	1.000	LPG	0	052	N/A	NA
11	LUBE OIL1	LITERS	1.000	OIL	3	071	045	11
12	LUBE OIL2	LITERS	1.000	LUB	3	072	822	NA
13	TRANS OIL	LITERS	1.000	MSC	3	075	808	NA
14	COOLANT	LITERS	1.000	AFR	0	076	605	14
15	SUPER BULK	LITERS	1.000	MSC	0	056	N/A	15
16	PROPANE	LITERS	1.000	MSC	0	080	039	NA
17	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
18	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
19	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
20	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
21	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
22	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
23	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
24	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA
25	EXTRA	LITERS	1.000	MSC	0	000	N/A	NA

| 26 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 27 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 28 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 29 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 30 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 31 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|
| 32 | EXTRA	| LITERS	| 1.000	| MSC	| 0	| 000	| N/A	| NA	|

```
-----
TAX Included in price per unit..... YES
ENTER (fuel table row # (1..32) or [RETURN] to exit) : 4
-----
```

| 4 | REFER	| LITERS	| 1.000	| MSC	| 0	| 025	| N/A	| NA	|
-----------	--------	-------	-----	---	-----	-----	----	--

```
-----
TAX Included in price per unit..... YES
Enter NAME : SUPER UNLD
Enter UNIT of measure (1=GALLONS 2=LITERS 3=QUARTS): 1
Enter PRICE: 1.689
Enter UNIVERSAL fuel type code: 025
-----
```

Repeat this process until all product descriptions and prices are set as needed.

```
ENTER (fuel table row # (1..32) or [RETURN] to exit) :<Enter to exit>
Is TAX included in the price per unit (Y/N)? Yes
P>
```

Configure the Journal Printer

```
P>Set jour
Office Journal (Y/N)? y
Set Journal printer options (Y/N)? y
Print:
ACCOUNT, DRIVER, VEHICLE, ODOM, and MISC (Y/N)? y
ACCOUNT #, CARD 2 (Y/N)? y
Prompt Responses (Y/N)? y
STOP line skip between transactions (Y/N)? y
Journal ERROR option (Y/N)? y
--ENABLE Auth on journal ERROR (Y/N)? y
P>
```

The following section shows setup for pumps and terminals. You must repeat this process for each pump and terminal connected to the System2. Consult your Gesticulator for more information when configuring this section.

Configure Pump Control Terminal (PCT)

```
P>Conf pct 1
Is this a K800 PCT (y/n)? N
Is This a U.P.C. (Y/N)? N
P>inst pct 1
```

OKAY

Configure each position with a connect pump (8 per PCT)

```
P>conf pct 1 pos 1
```

Note

This is for a System/2 PCT.

```
PCT 1 Position 1
Enter Pump #: 1
Enter Pulses Per LITERS: 100
MAX Fuel to be dispensed per transaction: 300
Pump Sentry Options (Y/N)? N
Pump Sentry: DISABLED
Maximum time allowed for fueling (Minutes): 5
Maximum time allowed to retrieve pump handle (Seconds): 60
Maximum time allowed to detect first fueling pulse (Secs): 60
Maximum time allowed between fueling pulses (Secs): 30
Enter Fueltype Code #: 4
Enter Tank #: 1
Clear Pump Totals (Y/N)? y
    --Cleared
Enter Totalizer Value: 3410
P>
P>inst pct 1 pos 1
PCT 1 Position 1 Pump # 1 Okay
```

Configure Fuel Island Terminal (FIT)

```
P>conf fit 1
  Is this an OPT (Y/N)? y
  Enter Decline Message Time-Out seconds : 30
  Enter Prompt Time-Out Code (1..9): 5
  Issue Receipts (Y/N)? y
  --Enter limit to receive receipts in days (0..99): 1 Day
Limit
  --Clear Receipt Counter (Y/N)? y
  ENABLE Keyboard Access (Y/N)? N
  Specify PCTs to shut off on E-Stop (Y/N)? N
  Change FIT Access To Pumps (Y/N)? N

FIT Installed
Island Terminal : OPT
Decline Time-Out: 30 SECONDS
```

```
Prompt Time-Out: 35 SECONDS
Receipts: 0          1 Day Limit To Receive Receipt
Keyboard Access --DISABLED
PCTs To Shut Off On E-Stop: 1,2,3,4
Card Reader Error Counter: 0
--ACCESS TO ALL PUMPS
P>
P>inst fit 1
Okay
P>
```

Change default message seen on Terminals (Optional)

```
P>format display 8
LANGUAGE 1 DISPLAY # 8:
    PETRO VEND SYSTEM 2
|Lang 1          ||          |
    DAN'S FUEL STOP - WELCOME
P>format display 9
LANGUAGE 1 DISPLAY # 9:
    INSERT CARD
|Lang 1          ||          |
    INSERT CARD TO BEGIN FUELING
```

Format Header and Trailer information printed on Receipts

System2 headers and trailers can each contain up to four lines. Each line is 11 characters long and can be printed as normal (black on white) or inverse (white on black) text. With network receipts, only the header and trailer are configurable, the receipt body is fixed. Text should be entered as uppercase and centered if possible.

Note

Select 'N' to configure network receipts. If proprietary cards are used as well, the Language 1 header and trailer must also be configured.

```
P>format receipt head      ENTER Language 1 or N :N
|                          |
line 1 -->      DANS FUEL STOP      --red print (Y/N)? N
line 2 -->      US RT 80, EXIT 769   --red print (Y/N)? N
line 3 -->      MORRIS, IL          --red print (Y/N)? N
line 4 -->
P>
P>format receipt trail      ENTER Language 1 or N :N
```

```

line 1 --> THANKS FOR STOPPING      --red print (Y/N)? N
line 2 -->   PLEASE COME AGAIN      --red print (Y/N)? N
line 3 -->
P>

```

This command ensures all configured terminal, receipt and pump information is sent to each installed device.

```

P>download
Okay

```

Configure Paymentech-Specific Information

This next section shows configuration of Paymentech specific information. Most of the information should be provided to you from Paymentech.

```

P>set network
NETWORK CHOICES
  1 - Paymentech
  2 - [Enable network 2]
  8 - Set Time Zone
  9 - Set Fleet Table
 10 - Perform Communication Test
 11 - Set Forced Trans Capture Time
 12 - Force Transaction Capture.....256 Seconds
 13 - Print Price and Total on Network Receipts: Yes
 14 - Device Server used in place of modem: Yes
Enter option number or press [RETURN] to exit: 1

NETWORK option settings          NETWORK : Paymentech

  1 - Client # .....
      Merchant #.....
      Terminal #.....
  2 - Site Name.....
  3 - Site City.....
  4 - Site State.....
  5 - Redial Attempts..... 1
  6 - Connect Time.....(Seconds).... 30
  7 - Local Authorization..... Disabled
  8 - Network System..... ON
      ON..... 12:00 AM
      OFF..... 12:00 AM
  9 - Authorization Message..... HAVE A SAFE TRIP
 10 - Re-Prompt Time...(Minutes).... 10
 11 - Communication Parameters..... 1200 7E1 T60Y

```

Enter option number or press [RETURN] to exit: 1
Enter CLIENT #: 1234 (provided by Paymentech)
Enter MERCHANT #: 990000001234 (provided by Paymentech)
Enter TERMINAL #: 999 (provided by Paymentech)

Enter option number or press [RETURN] to exit: 11

NETWORK option settings NETWORK : Paymentech

- 1 - DIAL MODE..... TONE
- 2 - TONE DURATION..... 60
- 3 - DIAL TONE..... YES
- 4 - BAUD RATE..... 1200
- 5 - DATA BITS..... 7
- 6 - PARITY EVEN
- 7 - STOP BITS..... 1

Enter option number or press [RETURN] to exit: 4

Enter BAUD RATE (0=300 1=1200 2=2400) : 2

NETWORK option settings NETWORK : Paymentech

- 1 - DIAL MODE..... TONE
- 2 - TONE DURATION..... 60
- 3 - DIAL TONE..... YES
- 4 - BAUD RATE..... 2400
- 5 - DATA BITS..... 7
- 6 - PARITY EVEN
- 7 - STOP BITS..... 1

Enter option number or press [RETURN] to exit:

Reconfiguring Modem...Please Wait

Modem Reconfiguration...NO ERROR

NETWORK option settings NETWORK : Paymentech

- 1 - Client # 1234
 - Merchant #..... 990000001234
 - Terminal #..... 999
- 2 - Site Name.....
- 3 - Site City.....
- 4 - Site State.....
- 5 - Redial Attempts..... 1
- 6 - Connect Time..... (Seconds) ... 30
- 7 - Local Authorization..... Disabled
- 8 - Network System..... ON
 - ON..... 12:00 AM
 - OFF..... 12:00 AM
- 9 - Authorization Message..... HAVE A SAFE TRIP

- 10 - Re-Prompt Time...(Minutes)..... 10
- 11 - Communication Parameters..... 2400 7E1 T60Y

IMPORTANT

Do Not Enable Local Authorization! Paymentech will reject a transaction that was not previously authorized. You will most likely lose the revenue of that sale.

Enter option number or press [RETURN] to exit: <press Enter>

NETWORK CHOICES

- 1 - Paymentech
- 2 - [Enable network 2]
- 8 - Set Time Zone
- 9 - Set Fleet Table
- 10 - Perform Communication Test
- 11 - Set Forced Trans Capture Time
- 12 - Force Transaction Capture.....165 Seconds
- 13 - Print Price and Total on Network Receipts: Yes
- 14 - Device Server used in place of modem: Yes

Enter option number or press [RETURN] to exit: 9

#	?	Fleet/Acct	Name	PromptSeq	Primary	Secondary	Onln	Off	A	B
1								0		
2								0		
3								0		
4								0		
5								0		
6								0		
7								0		
8								0		
9								0		
10								0		
11								0		
12								0		
13								0		
14								0		
15								0		
16								0		
17								0		
18								0		
19								0		
20								0		

ENTER (fleet table row # (1..20) or [RETURN] to exit) : 1

1								0		
---	--	--	--	--	--	--	--	---	--	--

(0=None, 1=Paymentech, 2=?????)

Enter NETWORK: 1

```

Enter PRIMARY #: 18775295686(provided by Paymentech)
Enter SECONDARY #: 18002269864(provided by Paymentech)
Enter ONLINE (0=Local): 100(based on type of vehicles fueling)
Enter OFFLINE : 1

ENTER (fleet table row # (1..20) or [RETURN] to exit) :
NETWORK CHOICES

1 - Paymentech
2 - [Enable network 2]
8 - Set Time Zone
9 - Set Fleet Table
10 - Perform Communication Test
11 - Set Forced Trans Capture Time
12 - Force Transaction Capture.....485 Seconds
13 - Print Price and Total on Network Receipts: Yes
14 - Device Server used in place of modem: No
Enter option number or press [RETURN] to exit: 11
Hint: Set this value about 15-20 mins. longer then the average
time between fuelings. This will lessen the amount of phone
calls made to Paymentech.
Enter time interval (in mins) to force captures : 30
NETWORK CHOICES
1 - Paymentech
2 - [Enable network 2]
8 - Set Time Zone
9 - Set Fleet Table
10 - Perform Communication Test
11 - Set Forced Trans Capture Time
12 - Force Transaction Capture.....472 Seconds
13 - Print Price and Total on Network Receipts: Yes
14 - Device Server used in place of modem: Yes
Enter option number or press [RETURN] to exit:
P>

```

Configure the ISO Table

Finally you must configure the ISO table to enable the bank/fleet cards you want to process at this site. By default the first nine positions of the table are configured for most of the major cards. You must however, enable them for use. As you step through the table answer YES to the; "-- Modify this ISO" question, each card you wish to allow access. Press <Enter> for each prompt and "Y" to "Set ACTIVE." The steps below show the first few, continue on as needed.

```

P>set iso
ISO table for Bank, Fleet and Private Label card configura-
tion
I - ISO #          C - Card Number

```

```

L - Luhn check digit = - must be field separator
M - Month                X - don't care digit or field separator
Y - Year                  # - don't care digit
0-9 - must be specified digit
> - don't check length to the end OR alternate network card
ISO #1:      VISA          --Inactive
Format:      ICCCCCCCCCCL=YYMM>
ISO Range:   4-4
# of digits to display/print: 4
Type/OFP:    6/000-1
--Modify this ISO (Y/N/X)? y
CLEAR this entry (Y/N)? N

Enter card name: VISA
Enter ISO card format: ICCCCCCCCCCL=YYMM>
Enter ISO# range (Minimum Value): 4
Enter ISO# Range (Maximum Value): 4
Enter right most number of card digits to display/print: 4
Enter Multi-trucking CARD TYPE code (see User Guide): 6
Print the price and total on Receipt? (Y/N): Yes
---Set ACTIVE (Y/N)? y
ISO #2:      VISA          --Inactive
Format:      ICCCCCCCCCCL=YYMM>
ISO Range:   4-4
# of digits to display/print: 4
Type/OFP:    6/000-1
--Modify this ISO (Y/N/X)? y
CLEAR this entry (Y/N)? N
Enter card name: VISA
Enter ISO card format: ICCCCCCCCCCL=YYMM>
Enter ISO# range (Minimum Value): 4
Enter ISO# Range (Maximum Value): 4
Enter right most number of card digits to display/print: 4
Enter Multi-trucking CARD TYPE code (see User Guide): 6
Print the price and total on Receipt? (Y/N): Yes
---Set ACTIVE (Y/N)? y
ISO #3:      MASTERCARD FLT  --Inactive
Format:      IIICCCCCCCCCCCL=YYMM>
ISO Range:   556-556
# of digits to display/print: 4
Type/OFP:    8/000-1
--Modify this ISO (Y/N/X)? y
CLEAR this entry (Y/N)? N
Enter card name: MASTERCARD FLT
Enter ISO card format: IIICCCCCCCCCCCL=YYMM>
Enter ISO# range (Minimum Value): 556

```

```

Enter ISO# Range (Maximum Value): 556
Enter right most number of card digits to display/print: 4
Enter Multi-trucking CARD TYPE code (see User Guide): 8
Print the price and total on Receipt? (Y/N): Yes
---Set ACTIVE (Y/N)? y
ISO #4:      MASTERCARD      --Inactive
Format:     IICCCCCCCCCCCL=YYMM>
ISO Range:  51-55
# of digits to display/print: 4
Type/OFP:   7/000-1
--Modify this ISO (Y/N/X)? x <x to exit>

```

To enable the Wright Express card, you must configure it specifically. Follow the steps below to enable the Wright Express for authorization.

```

P>set iso 10      (Unused row in table)
  ISO table for Bank, Fleet and Private Label card configura-
  tion

  I - ISO #          C - Card Number
  L - Luhn check digit = - must be field separator
  M - Month          X - don't care digit or field separator
  Y - Year           # - don't care digit
  0-9 - must be specified digit
  > - don't check length to the end OR alternate network card
ISO #10:      Row NOT defined!
--Modify this ISO (Y/N/X)? y
Enter card name: Wright Express
Enter ISO card format: >
Enter ISO# range (Minimum Value): 0
Enter ISO# Range (Maximum Value): 0
Enter right most number of card digits to display/print: 13
Enter Multi-trucking CARD TYPE code (see User Guide): 21
Print the price and total on Receipt? (Y/N): y
---Set ACTIVE (Y/N)? y
P>sh iso
  ISO table for Bank, Fleet and Private Label card configura-
  tion

  I - ISO #          C - Card Number
  L - Luhn check digit = - must be field separator
  M - Month          X - don't care digit or field separator
  Y - Year           # - don't care digit
  0-9 - must be specified digit
  > - don't check length to the end OR alternate network card
ISO #1:      VISA      --Active
Format:     ICCCCCCCCCCCCL=YYMM>
ISO Range:  4-4

```

```
# of digits to display/print: 4
Type/OFP: 6/000-1
ISO #2:      VISA          --Active
Format:     ICCCCCCCCCCCCCL=YYMM>
ISO Range:  4-4
# of digits to display/print: 4
Type/OFP: 6/000-1
ISO #3:      MASTERCARD FLT  --Active
Format:     IIICCCCCCCCCCCL=YYMM>
ISO Range:  556-556
# of digits to display/print: 4
Type/OFP: 8/000-1
ISO #4:      MASTERCARD      --Active
Format:     IICCCCCCCCCCCL=YYMM>
ISO Range:  51-55
# of digits to display/print: 4
Type/OFP: 7/000-1

ISO #5:      DISCOVER        --Active
Format:     IIIIIICCCCCCCL=YYMM>
ISO Range:  601100-601109
# of digits to display/print: 4
Type/OFP: 10/000-1
ISO #6:      DISCOVER        --Active
Format:     IIIIIICCCCCCCL=YYMM>
ISO Range:  601120-601199
# of digits to display/print: 4
Type/OFP: 10/000-1
ISO #7:      AMERICAN EXP    --Active
Format:     IICCCCCCCCCCCL=YYMM>
ISO Range:  34-34
# of digits to display/print: 4
Type/OFP: 9/000-1
ISO #8:      AMERICAN EXP    --Active
Format:     IICCCCCCCCCCCL=>YYMM
ISO Range:  37-37
# of digits to display/print: 4
Type/OFP: 9/000-1
ISO #9:      VOYAGER         --Inactive (NOT TAKEN)
Format:     IIIIIICCCCCCCCCCCL=YYMM>
ISO Range:  708885-708889
# of digits to display/print: 4
Type/OFP: 13/000-1
ISO #10:     WRIGHT EXPRESS  --Active
Type/OFP: 21/000-1
```

```
ISO #11:      Row NOT defined!
ISO #12:      Row NOT defined!
ISO #13:      Row NOT defined!
ISO #14:      Row NOT defined!
ISO #15:      Row NOT defined!
ISO #16:      Row NOT defined!
ISO #17:      Row NOT defined!
ISO #18:      Row NOT defined!
ISO #19:      Row NOT defined!
ISO #20:      Row NOT defined!
ISO #21:      Row NOT defined!
ISO #22:      Row NOT defined!
ISO #23:      Row NOT defined!
ISO #24:      Row NOT defined!
ISO #25:      Row NOT defined!
P>
P>bye
BYE!
>
```

After completing these steps, you are now ready to process transactions with the Paymentech host. To use the proprietary card file, see the appropriate information within this guide.

For questions regarding error messages displayed at the terminal, when processing a card. See documentation provided by Paymentech. If you are unable to process cards after following all the steps above, please contact OPW Fuel Management Systems Technical Support at (708) 485-4200.

Appendix H - Comdata Network

Parts List for Comdata Upgrade

- M41-33.0XX Comdata Multi-Trucking Operators Guide
- S41-33.0XX Comdata Multi-Trucking FSC Software
- P41-M12-XX FSC PAL Chip For Memory
- S44-01.XX FIT Alpha Software
- 20-4192 Alpha Button Upgrade Kit

Comdata Software Upgrade Procedure

1. Execute the following commands and write down the system configuration information in the tables later in this appendix:
 - A. SHOW/PRINT FIT X *where X is the FIT number*
 - B. SHOW/PRINT PCT X *where X is the PCT number*
 - C. SHOW/PRINT NETWORK
 - D. SHOW/PRINT FLEET
 - E. SHOW/PRINT CARD
2. Back up your PROPRIETARY CARD FILE (if present). Use a program like Petro Vend's Phoenix® or Phoenix for Windows. Poll any transaction data that pertains to PROPRIETARY CARDS and force any NETWORK TRANSACTIONS that have not been captured by the network.
3. Execute a SET NETWORK command.
4. Next, choose FORCE TRANSACTIONS TO CAPTURE. The system will tell you if there were any transactions to capture and that they have been captured.
5. Remove power from the Fuel Site Controller (FSC) and disconnect battery.
6. Remove U-25 and U-28 program chips.
7. If present on the board, remove U9 and U10.
8. Remove the U-24 PAL chip.

Note

PAL chip sockets are frequently damaged. This damage is often caused when a screwdriver is used to remove the chips from the board. To avoid this damage (which is NOT warranty-

covered) use a Chip Puller (such as Amp Part No. 82648-1 52-pin). Pullers remove chips without damaging sockets.

9. Install the new U-25, U-28, U-9 and U-10 chips.
10. Install the new U24 PAL chip if applicable.
11. Change JUMPER 7 from OLD to NEW (if applicable).
12. Change Standard FIT to an Alpha FIT. See .
13. Reapply power to the FSC and reconnect the battery.

Note

If, after reapplying FSC power, the unit's STATUS light flashes "0", you must enter TEST mode to change the Petro-Net baud rate. The status of the FIT and PCT will be DOWN until you change the baud rate.

14. Issue the Test command to change the Petro-Net baud rate to 1200.
15. Reset the system.
16. At the System 2 prompt type in "HELLO".
17. Enter the main password.
18. Type in the work "TEST".

The following prompts appear. They should be answered as below:

```

TEST RAM (Y/N)? N
TEST BATTERY (Y/N)? N
MONITOR PETRONET (Y/N)? N
MONITOR HOST (Y/N)? N
TEST CLOCK (Y/N)? N
PORT # TO TEST: (ENTER)
SELECT PETRONET BAUD RATE (Y/N)? Y
                                1200 baud
                                2400 baud
                                4800 baud
                                9600 baud

SELECT OPTION: 1
                                1200 baud

RESET SYSTEM (Y/N) Y
--DO YOU WANT TO DO A COLD START? N

```

Caution

DO NOT do a cold-start!

19. Reprogram the system parameters, see *Appendix I - Step-by-Step Comdata Configuration* on page 219.
20. Restore proprietary card file if necessary.

Appendix I - Step-by-Step Comdata Configuration

This section gives step by step instructions to configure a System2 for Comdata/Ruan applications. Do this procedure AFTER software installation. See the referenced sections of this manual for command explanations.

1. Obtain a terminal or PC with a terminal emulation software program.
2. Set COMM parameters to E,7,1, 1200 baud.
3. Use ANSI or VT100 terminal emulation.

You will see a ">" when communication is established.

4. Type **HELLO** and press ENTER. You should see **ENTER PASSWORD**.
5. Type **HELLO** again and press ENTER. You are now in privileged mode, as shown by the "P>" prompt. To configure the System2 you must be in privileged mode.

Once the System2 is configured according to this guide, perform several fueling transactions for each PCT position to ensure proper operation.

Also, make sure the modem, journal printer and receipt printer are operating correctly. If you have any problems, contact Comdata.

Your particular configuration choices may differ. These entries are simply the most common answers for non proprietary systems. Use the **Previous Info** field to copy down the previous configuration of the system. Some text in the following table is smaller for formatting purposes

Step	System2 displays:	Your command:	Previous info:
1	P> Options: 0-STD (level 1) 1-EMA (level 2) 2-EMB 3-EMC (level 3) 4-EMD (level 4) 5-EME Current Option: EMA (level 2)	SET RAM <enter> 1 <enter>	
2	P> Enter Time (xx:xx am/pm): Enter Time in xx:xx am/pm format (e.g., 03:50 pm)	SET TIME <enter> <i>Enter current time then</i> <enter>	
3	P> Enter Date (MMM DD, YYYY): Enter Date in MMM DD, YYYY format (e.g. Jan 1, 1991)	SET DATE <enter> <i>Enter current date then</i> <enter>	

Step	System2 displays:	Your command:	Previous info:
4	<pre> P> 1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice: Note: Transaction and Message Buffer Will Be Cleared! (Y/N) --Enable Messaging (Y/N) Enter Transaction Size Code: # Of Cards/Accts (Min. Opt): (Max. Options): # Of Transactions: # Of Messages: --Save This Configuration (Y/N)? 1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice: </pre>	<pre> SET CARD BUFFER <enter> 1 <enter> y <enter> n <enter> 14 <enter> 100 <enter> 14 <enter> 350 <enter> 0 <enter> Y <enter> 2 <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
4 cont	Card/Account Records: Card/Account Not Yet Defined Card/Account File Will Be Destroyed!!! Sure (Y/N)? Account #s Expiration Date Monthly Allocation Daily Allocation PIN # Save Odometer Entries Pump Restriction Quantity Restriction Driver/Vehicle/Account Name Verify 1? Verify 2? Verify 3? Prompt Seq. 1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:	Y <enter> N <enter> N <enter> X <enter>	

Step	System2 displays:	Your command:	Previous info:
5	<pre> P> ----- | # | Name | Units | Price | TRN | COM | UNI | |---|-----|-----|-----|---|---|---| | 1 | UNLEADED | GALLONS | 1.000 | GUL | 0 | 061 | | 2 | PREMIUM | GALLONS | 1.000 | GPC | 0 | 063 | | 3 | SUPER | GALLONS | 1.000 | GSS | 0 | 065 | | 4 | SPEC HULK | GALLONS | 1.000 | MSC | 0 | 017 | | 5 | #1 DIESEL | GALLONS | 1.000 | D1E | 1 | 010 | | 6 | #2 DIESEL | GALLONS | 1.000 | D2E | 2 | 001 | | 7 | #1DIESEL BLK | GALLONS | 1.000 | MSC | 0 | 013 | | 8 | #2DIESEL BLK | GALLONS | 1.000 | MSC | 0 | 049 | | 9 | #3DIESEL BLK | GALLONS | 1.000 | MSC | 0 | 004 | |10 | UNLEADED BLK | GALLONS | 1.000 | LPS | 0 | 062 | |11 | LUBE OIL1 | GALLONS | 1.000 | OIL | 3 | 071 | |12 | LUBE OIL2 | GALLONS | 1.000 | LUB | 3 | 072 | |13 | TRAMS OIL | GALLONS | 1.000 | MSC | 3 | 076 | |14 | COOLANT | GALLONS | 1.000 | APR | 0 | 076 | |15 | SUPER HULK | GALLONS | 1.000 | MSC | 0 | 066 | |16 | PROGRAM | GALLONS | 1.000 | MSC | 0 | 090 | Enter: (Fuel Table Row # (1..32 or [Return] to exit) ----- | 6 | #2 DIESEL | GALLONS | 1.000 | D1E | 1 | 010 | Enter Name: Enter UNITS Mode (1=Gallon 2=Liter 3= Quart) Enter Price: Enter Trendar Type: Enter Comdata Type (0=Other 1=#1 Diesel 2=#2 Diesel) Enter type Enter UNIVERSAL type: Enter type Enter: (Fuel Table Row # (1..32 or [Return] to exit) <enter> Is TAX included in price per unit? NOTE: If you don't press "Y, authorizer thinks tax not included in transaction amount, may cause billing errors. </pre>	<pre> SET FUELTYPE <enter> 6 <enter> <enter> <enter> <enter> <enter> <enter> <enter> y <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
6	<p>P></p> <p>VERY IMPORTANT! Unlike non-network systems, the journal printer MUST be connected to the PRINTER port, NOT AUX 1.</p> <p>Office Journal (Y/N)? Set Journal Printer Options (Y/N)? Print: Account, Driver, Vehicle, Odom Misc (Y/N)? Account #, Card 2 (Y/N)? Prompt Responses (Y/N)? Journal Error Option? --Enable Auth On Journal Error (Y/N)?</p>	<p>SET JOURNAL <enter></p> <p>Y <enter> Y <enter></p> <p>Y <enter> Y <enter> Y <enter> Y <enter></p> <p>Y <enter></p>	

Step	System2 displays:	Your command:	Previous info:
7	P>	SET TRANS <enter>	
	Set Wrap Around Options?	Y <enter>	
	--Enable Wrap Around?	Y <enter>	
	--Write Over NON-CAPTURED or FAILED Transactions?	N <enter>	
	Redefine Transaction?	Y <enter>	
	Trans = Unauth'd Users Also?	Y <enter>	
	Specify Displayed Fields?		
	Enter Y To Display the Field	Y <enter>	
	Account, Driver, Vehicle?	Y <enter>	
	Date & Time?	Y <enter>	
	Trans # ?	Y <enter>	
	Card 1 ?	Y <enter>	
	Card 2 ?	Y <enter>	
	Fueltype ?	Y <enter>	
	Pump ?	Y <enter>	
	Hose ?	Y <enter>	
	Quantity ?	Y <enter>	
	Price ?	Y <enter>	
	Total ?	Y <enter>	
	Odometer ?	Y <enter>	
	Distance Per Unit ?	Y <enter>	
	Miscellaneous ?	Y <enter>	
	Receipt Status ?	Y <enter>	
	Account # ?	Y <enter>	
	Prompt Entries ?	Y <enter>	
	--Computer Format ?	Y <enter>	
	--Computer Format Check Data in Header	Y <enter>	

The steps in Part 8 below must be repeated for each pump you have connected to the System2. These commands allow you to program pump number, fueltype, time-outs, etc. There can be up to four PCTs; each can control up to eight hoses.

"X" is the PCT number, "N" is relay number. A "[]" means enter the variable (such as pump number) here.

Step	System2 displays:	Your command:	Previous info:
8	P>	CONF PCT X <enter>	
	Is This a U.P.C. (Y/N)?	N <enter>	

Step	System2 displays:	Your command:	Previous info:
9	<p>P></p> <p>PCT 1 POSITION 1 Enter Pump #: Enter Pulses Per Gallon Enter Pulse Ratio Max Fuel to Be Dispensed Per Transaction: Enable Pump Sentry (Y/N)? Pump Sentry: Enabled Maximum Time Allowed for Fueling (minutes): Maximum Time Allowed to Retrieve Pump Handle (seconds): Maximum Time to Detect First Fueling Pulse (seconds): Maximum Time Allowed Between Fueling Pulses (seconds): Enter Fueltype Code #: Enter Tank # Clear Pump Totals (Y/N)? --Cleared Enter Totalizer Value: P></p>	<p>CONFIG PCT X POS N <enter></p> <p>[] <enter> [] <enter> [] <enter></p> <p>500 <enter> Y <enter></p> <p>30 <enter></p> <p>120 <enter></p> <p>120 <enter> 300 <enter></p> <p>6 <enter> [] <enter> Y <enter></p> <p>Value,then <enter></p> <p>DOWNLOAD <enter></p>	
10	<p>P></p>	<p>INSTALL PCT X POS N <enter></p>	

Step	System2 displays:	Your command:	Previous info:
14	<pre>P> Language 1 Display #8 PETRO VEND SYSTEM2 |Lang 1 | COMPANY NAME TERM [comdata terminal #]</pre>	<pre>FORMAT DISPLAY 8 <enter> <enter></pre>	
15	<pre>P> Language 1 Display #9 INSERT CARD |Lang 1 | INSERT COMDATA CARD</pre>	<pre>FORMAT DISPLAY 9 <enter> <enter></pre>	

System2 headers and trailers can each contain up to four lines. Each line is 11 characters long and can be printed in either red or black. In a network receipt (like Comdata), only the receipt header and trailer are programmable. The network receipt body is fixed, and cannot be changed.

The first two lines of the receipt header are programmed under the language 1 portion of the "FORMAT RECEIPT HEADER" command. The remaining two lines of the receipt header are programmed under the network portion.

Please note that both commands use lines 1 and 2 for entering this information. Text should be in uppercase and centered if possible.

Step	System2 displays:	Your command:	Previous info:
16	<p>P></p> <p>Enter Language 1 or N:1 <enter> Line 1-->| |</p> <p>...red print (Y/N)? Line 2-->||TERMINAL ???</p> <p><i>[] is Comdata Terminal Number</i></p> <p>...red print (Y/N)? Line 3-->||</p>	<p>FORMAT RECEIPT HEAD <enter></p> <p>Your Company Name <enter></p> <p>Y <enter> [] <enter></p> <p>Y <enter> <enter></p>	
17	<p>P></p> <p>Enter Language Line 1-->|| CITY <enter></p> <p>...red print (Y/N)? Line 2-->||</p> <p>...red print (Y/N)? Line 3-->||</p>	<p>FORMAT RECEIPT HEAD <enter></p> <p>1 or N <enter></p> <p>Y <enter> State <enter> Y <enter> <enter></p>	

Step	System2 displays:	Your command:	Previous info:
18	<p>P></p> <p>Enter Language 1 or N</p> <p>Line 1-->| |</p> <p>...red print (Y/N)?</p> <p>Line 2-->||</p> <p>...red print (Y/N)?</p> <p>Line 3-->|| (press space bar to advance cursor to the end of line) <enter></p> <p>...red print (Y/N)?</p> <p>Line 4-->||</p> <p>...red print (Y/N)?</p> <p>P></p>	<p>FORMAT</p> <p>RECEIPT</p> <p>TRAIL</p> <p><enter></p> <p>N <enter></p> <p>[SIGN NAME]</p> <p><enter></p> <p>Y <enter></p> <p>Y <enter></p> <p>[BELOW]</p> <p><enter></p> <p>Y <enter></p> <p>X <enter></p> <p>Y <enter></p> <p>DOWNLOAD</p> <p><enter></p>	

Step	System2 displays:	Your command:	Previous info:
20	<pre> P> NETWORK CHOICES 1 - COMDATA 6 - SET FLEET TABLE 7 - PERFORM COMMUNICATION TEST 8 - SET FORCED TRANS CAPTURE TIME 9 - FORCE TRANSACTION CAPTURE 500 SECONDS Enter option number or press [RETURN] to exit: NETWORK option settings 1 - SITE ID 2 - SITE NAME 3 - SITE CITY..... 4 - SITE STATE..... 5 - REDIAL ATTEMPTS.....1 6 - CONNECT TIME...(seconds)...30 7 - LOCAL AUTHORIZATION.....ON 8 - NETWORK SYSTEM.....Disabled ON.....12:00 AM OFF.....12:00 AM 9 - AUTHORIZATION MESSAGE..HAVE A SAFE TRIP 10-RE-PROMPT TIME...(MINUTES).....10 11-COMMUNICATION PARAMETERS..1200 7E1 T75Y Enter option number or press [RETURN] to exit: Enter SITE ID:* Enter option number or press [RETURN] to exit: Enter SITE NAME: Enter option number or press [RETURN] to exit: Enter SITE CITY: Enter option number or press [RETURN] to exit: Enter SITE STATE </pre>	<pre> SET NETWORK <enter> 1 <enter> 1 <enter> [Site ID] <enter> 2 <enter> [Site Name] <enter> 3 <enter> Site City <enter> 4 <enter> 1L <enter> </pre>	<pre> *SITE ID is provided by Comdata. SITE ID is required for authorization! </pre>

Step	System2 displays:	Your command:	Previous info:
20 cont.	Enter option number or press <return> to exit.	5 <enter>	
	Enter REDIAL ATTEMPTS:	3 <enter>	
	Enter option number or press <return> to exit.	6 <enter>	
	Enter CONNECT TIME seconds:	30 <enter>	
	Enter option number or press <return> to exit.	7 <enter>	
	Enter LOCAL AUTHORIZATION? (Y/N)?	Y <enter>	
	Enter NUMBER (default=1):	1 <enter>	
	Enter DURATION (default=1):	1 <enter>	
	Enter ALLOW KEYED CARDS (Y/N):	N <enter>	
	Enter option number or press <return> to exit.	8 <enter>	
	Enter NETWORK processing ON time (HH:MM AM/PM):	12:00 AM <enter>	
	Enter NETWORK processing OFF time (HH:MM AM/PM):	12:00 AM <enter>	
	Enter option number or press <return> to exit.	9 <enter>	
	Enter AUTHORIZATION MESSAGE:	THANK YOU <enter>	
	Enter option number or press <return> to exit.	10 <enter>	
	Enter RE-PROMPT TIME minutes (0 - no limit):	10 <enter>	
	Enter option number or press <return> to exit.	11 <enter>	
	NETWORK option settings COMDATA 1 - DIAL MODE .....TONE 2 - TONE DURATION ....75 3 - DIAL TONE .....YES 4 - BAUD RATE .....1200 5 - DATA BITS .....7 6 - PARITY .....EVEN 7 - STOP BITS .....1		

Step	System2 displays:	Your command:	Previous info:
20 cont.	<p>Enter option number or press <return> to exit.</p> <p><i>NOTE: Modem must be attached to AUX 3.</i></p> <p>Reconfiguring modem...Please wait Modem reconfigured.</p> <p>NETWORK CHOICES</p> <p>1 - COMDATA</p> <p>6 - SET FLEET TABLE</p> <p>7 - PERFORM COMMUNICATION TEST</p> <p>8 - SET FORCED TRANS CAPTURE TIME</p> <p>9 - FORCE TRANSACTION CAPTURE 500 SECONDS</p> <p>Enter option number or press [RETURN] to exit:</p> <p><i>Note: Fleet table must be set before you can do a communication test.</i></p> <pre> ----- | a| |last,oct| name |prompt seq| primary | secondary |on|off| Δ | a| |---|-----|-----|-----|-----|-----|-----|-----| | 1| | | | | | | | | 2| | | | | | | | | 3| | | | | | | | | 4| | | | | | | | | 5| | | | | | | | | 6| | | | | | | | | 7| | | | | | | | | 8| | | | | | | | | 9| | | | | | | | |10| | | | | | | | |11| | | | | | | | |12| | | | | | | | |13| | | | | | | | |14| | | | | | | | |15| | | | | | | | |16| | | | | | | | |17| | | | | | | | |18| | | | | | | | |19| | | | | | | | |20| | | | | | | | ----- </pre> <p>ENTER (fleet table row # (1..20) or [RETURN] to exit):</p> <pre> ----- | 1| | | | | | | | ----- </pre> <p>[0=None, 1=COMDATA]</p> <p>Enter NETWORK: Enter PROMPT SEQUENCE: Enter PRIMARY #:</p>	<p><enter></p> <p>6 <enter></p> <p>1 <enter></p> <p>1 <enter> #GBC <enter> 18001234567 <enter></p>	

Step	System2 displays:	Your command:	Previous info:
20 cont	<p>Enter SECONDARY #:</p> <p>Enter ONLINE:</p> <p>Enter OFFLINE:</p> <p>LIMIT by \$ (Y/N):</p> <p>LIMIT by Qty (Y/N):</p> <p>ENTER (fleet table row # 1-20 or [return] to exit):</p> <p>NETWORK CHOICES</p> <p>1 - COMDATA</p> <p>6 - SET FLEET TABLE</p> <p>7 - PERFORM COMMUNICATION TEST</p> <p>8 - SET FORCED TRANS CAPTURE TIME</p> <p>9 - FORCE TRANSACTION CAPTURE 500 SECONDS</p> <p>Enter option number or press [RETURN] to exit:</p> <p><i>Here, Fleet table is redisplayed with your ROW 1 changes visible.</i></p> <p>ENTER (fleet table row # 1-20 or [return] to exit):</p> <p><i>Here, Fleet table ROW 1 is displayed with your changes visible.</i></p> <p>Performing test...please wait Communication test...no error [card number data] INVALID CARD NR MSG#00012.</p> <p><i>NOTE: If you do NOT see the "Invalid Card" message, check the Troubleshooting appendix for comm errors.</i></p>	<p>18001234567 <enter></p> <p>500 <enter></p> <p>0 <enter></p> <p>Y <enter></p> <p>N <enter></p> <p><enter></p> <p>7 <enter></p> <p>1 <enter></p>	

Step	System2 displays:	Your command:	Previous info:
20 cont.	NETWORK CHOICES 1 - COMDATA 6 - SET FLEET TABLE 7 - PERFORM COMMUNICATION TEST 8 - SET FORCED TRANS CAPTURE TIME 9 - FORCE TRANSACTION CAPTURE 500 SECONDS Enter option number or press [RETURN] to exit:	<enter>	
21	P> ** SET TAX** Federal Tax.....0.00 State Tax.....0.00 Federal Tax Rebate.....0.00 State Tax Rebate.....0.00 Sales Tax.....0.00 Enter FEDERAL TAX Enter STATE TAX Enter FEDERAL TAX REBATE Enter STATE TAX REBATE Enter SALES TAX P> P>	SET TAX <enter> .01 <enter> .05 <enter> .01 <enter> .01 <enter> .05 <enter> DOWNLOAD <enter>	

Appendix J - Trendar/FDIS Network

Parts List for Trendar/FDIS Upgrade

M41-33.05C TRENDAR FDIS MULTI TRUCKING OPERATORS GUIDE

S41-33.05C TRENDAR FDIS MULTITRUCKING FSC SOFTWARE

P41-ML2-01A FSC PAL CHIP FOR MEMORY LEVEL 2

S44-01.01O FIT ALPHA SOFTWARE

20-4192 ALPHA BUTTON UPGRADE KIT

Trendar/FDIS Software Upgrade Procedure

1. Execute the following commands and write down the system configuration information:

```
SHOW/PRINT FIT X  where X is the FIT number
SHOW/PRINT PCT X  where X is the PCT number
SHOW/PRINT NETWORK
SHOW/PRINT FLEET
SHOW/PRINT CARD
```

2. Back up your PROPRIETARY CARD FILE (if present). Use a program like Petro Vend's Phoenix®. Poll any transaction data that pertains to PROPRIETARY CARDS and force any NETWORK TRANSACTIONS that have not been captured by the network.

Note

To force transactions to capture, execute a "SET NETWORK" command. Then, choose FORCE TRANSACTIONS TO CAPTURE. If your system had any uncaptured transactions, it will tell you that they have been captured. If your system does not have any transactions to be captured, it will tell you that as well.

3. Remove power from the Fuel Site Controller (FSC) and disconnect battery.
4. Remove the U-25 and U-28 program chips (and U9 and U10 if present).
5. Remove the U-24 PAL chip.

Note

Returned PAL chip sockets are frequently damaged. This damage is often caused when a screwdriver is used to remove the chips from the board. To avoid this damage (which is NOT warranty-covered) use a Chip Puller (such as Amp Part No. 82648-1 52-pin). Pullers remove chips without damaging sockets.

6. Install the new U-25, U-28, U-9 and U-10 chips.
7. Change JUMPER 7 from OLD to NEW (if applicable).
8. Change Standard FIT to an Alpha FIT - see Appendix J.
9. Reapply power to the FSC and reconnect the battery.

AFTER REAPPLYING FSC POWER, THE STATUS LIGHT FLASHES "0" UNTIL YOU DO THE TEST COMMAND. THE FIT AND PCT SHOW AS "DOWN" UNTIL THIS COMMAND IS ISSUED.

10. Issue the "Test" command to change the Petro-Net baud rate to 1200 and reset the system.
 - A. At the System 2 prompt type in "HELLO".
 - B. Enter the main password.
 - C. Type in the work "TEST".
 - D. The following prompts will be displayed. They should be answered as below:

```

TEST RAM (Y/N)?  N
TEST BATTERY (Y/N)?  N
MONITOR PETRONET (Y/N)?  N
MONITOR HOST (Y/N)?  N
TEST CLOCK (Y/N)?  N
PORT # TO TEST:  (ENTER)
SELECT PETRONET BAUD RATE (Y/N)?  Y

                                1200 baud
                                2400 baud
                                4800 baud
                                9600 baud

SELECT OPTION:  1
1200 baud
  RESET SYSTEM (Y/N) Y
--DO YOU WANT TO DO A COLD START?  N

```

BE SURE YOU ANSWER NO TO THE "COLD START" QUESTION!

Reprogram the system parameters using Section H.3 below.

Restore proprietary card file if necessary.

Trendar/FDIS Step By Step Configuration

This section contains step by step instructions for configuring a System2 for the new Trendar FDIS Network. Refer to other chapters of this manual for explanations of the commands listed below. You can use the Previous Information field to copy down the previous configuration of the system.

1. Obtain a CRT or PC with terminal emulation software.
2. Set communication parameters: E,7,1, baud rate 1200 (in FSC as well)
3. Use Wyse 50 or VT100 terminal emulation.
4. After communications are established you will see a > prompt. Type HELLO and press <enter>.

You should now be prompted with the message ENTER PASSWORD. Type in HELLO again and press <enter>.

You should now see a P> instead of a ">." To configure the System2 you must be in privileged mode.

Perform several fueling transactions after configuration through each PCT to make sure your System2 is configured according to the specifications outlined in this guide.

Please note that your particular configuration choices may differ. These entries are simply the most common answers for non proprietary systems.

The step-by-step procedure begins on page 215, 233. Use the Previous Info field to copy down the previous configuration of the system.

If you have any problems, please contact Petro Vend Technical Service at 708-485-4200.

Step	System2 displays:	Your command:	Previous info:
1	<p>P></p> <p>Options:</p> <p>0-STD (level 1)</p> <p>1-EMA (level 2)</p> <p>2-EMB</p> <p>3-EMC (level 3)</p> <p>4-EMD (level 4)</p> <p>5-EME</p> <p>Current Option:</p> <p>EMA (level 2)</p>	<p>SET RAM</p> <p><enter></p> <p>1</p> <p><enter></p>	
2	<p>P></p> <p>Enter Time (xx:xx am/pm): Enter Time in xx:xx am/pm format (e.g., 03:50 pm)</p>	<p>SET TIME</p> <p><enter></p> <p><i>Enter current time then</i></p> <p><enter></p>	
3	<p>P></p> <p>Enter Date (MMM DD, YYYY): Enter Date in MMM DD, YYYY format (e.g. Jan 1, 1991)</p>	<p>SET DATE</p> <p><enter></p> <p><i>Enter current date then</i></p> <p><enter></p>	

Step	System2 displays:	Your command:	Previous info:
4	<p>P></p> <p>1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:</p> <p>Note: Transaction and Message Buffer Will Be Cleared! (Y/N)</p> <p>--Enable Messaging (Y/N)</p> <p>Enter Transaction Size Code:</p> <p># Of Cards/Accts (Min. Opt):</p> <p>(Max. Options):</p> <p># Of Transactions:</p> <p># Of Messages:</p> <p>--Save This Configuration (Y/N)?</p> <p>1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:</p>	<p>SET CARD BUFFER <enter></p> <p>1 <enter></p> <p>y <enter></p> <p>n <enter></p> <p>30 <enter></p> <p>533 <enter></p> <p>184 <enter></p> <p>875 <enter></p> <p>0 <enter></p> <p>Y <enter></p> <p>2 <enter></p>	

Step	System2 displays:	Your command:	Previous info:
4 cont	Card/Account Records: Card/Account Not Yet Defined Specify Card/Account Record (Y/N) Card/Account File Will Be Destroyed!!! Sure (Y/N)? Account #s Expiration Date Monthly Allocation Daily Allocation PIN # Save Odometer Entries Pump Restriction Quantity Restriction Driver/Vehicle/Account Name Verify 1? Verify 2? Verify 3? Prompt Seq. 1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:	Y <enter> Y <enter> N <enter> N <enter> X <enter>	

Step	System2 displays:	Your command:	Previous info:
5	<pre> P> ----- | # | Name | Units | Price | TRR |DCM| UNI | |---|-----|-----|-----|---|---|---| | 1 | UNLEADED | GALLONS | 1.000 | GSE | 0 | 061 | | 2 | PREMIUM | GALLONS | 1.000 | GPE | 0 | 061 | | 3 | SUPRE | GALLONS | 1.000 | GSE | 0 | 056 | | 4 | SPEC BULK | GALLONS | 1.000 | MSC | 0 | 017 | | 5 | #1 DIESEL | GALLONS | 1.000 | D1E | 1 | 010 | | 6 | #2 DIESEL | GALLONS | 1.000 | D2E | 1 | 001 | | 7 | #1DIES BULK | GALLONS | 1.000 | MSC | 0 | 013 | | 8 | #2DIES BULK | GALLONS | 1.000 | MSC | 0 | 049 | | 9 | #2DIES BULK | GALLONS | 1.000 | MSC | 0 | 004 | | 10 | UNLEAD BULK | GALLONS | 1.000 | LPG | 0 | 062 | | 11 | LUBE OIL1 | GALLONS | 1.000 | OIL | 3 | 071 | | 12 | LUBE OIL2 | GALLONS | 1.000 | LUB | 3 | 072 | | 13 | TRAMS OIL | GALLONS | 1.000 | MSC | 3 | 076 | | 14 | COOLANT | GALLONS | 1.000 | APE | 0 | 076 | | 15 | SUPRE BULK | GALLONS | 1.000 | MSC | 0 | 056 | | 16 | PROPANE | GALLONS | 1.000 | MSC | 0 | 090 | Enter: (Fuel Table Row # (1..16) or [Return] to exit) ----- - | 6 | #2 DIESEL | GALLONS | 1.000 | D1E | 1 | 010 | Enter Name: Enter UNITS Mode (1=Gallon 2=Liter 3= Quart) Enter Price: Enter Trendar Type: Enter Trendar FDIS Type (0=Other 1=#1 Diesel 2=#2 Diesel) Enter type Enter UNIVERSAL type: Enter: (Fuel Table Row #(1..16) or [Return] to exit)<enter> </pre>	<pre> SET FUELTYPE <enter> 6 <enter> <enter> <enter> <enter> <enter> <enter> <enter> <enter> <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
6	<p>P></p> <p>VERY IMPORTANT! Unlike non-network systems, the journal printer MUST be connected to the PRINTER port, NOT AUX 1.</p> <p>Office Journal (Y/N)? Set Journal Printer Options (Y/N)? Print: Account, Driver, Vehicle, Odom Misc (Y/N)? Account #, Card 2 (Y/N)? Prompt Responses (Y/N)? Journal Error Option? --Enable Auth On Journal Error (Y/N)?</p>	<p>SET JOURNAL <enter></p> <p>Y <enter> Y <enter></p> <p>Y <enter> Y <enter> Y <enter> Y <enter></p> <p>Y <enter></p>	

Step	System2 displays:	Your command:	Previous info:
9	<pre> P> PCT 1 POSITION 1 Enter Pump #: Enter Pulses Per Gallon Enter Pulse Ratio Max Fuel to Be Dispensed Per Transaction: Enable Pump Sentry (Y/N)? Pump Sentry: Enabled Maximum Time Allowed for Fueling (minutes): Maximum Time Allowed to Retrieve Pump Handle (seconds): Maximum Time to Detect First Fueling Pulse (seconds): Maximum Time Allowed Between Fueling Pulses (seconds): Enter Fueltype Code #: Enter Tank # Clear Pump Totals (Y/N)? --Cleared Enter Totalizer Value: P> </pre>	<pre> CONFIG PCT X POS N <enter> [] <enter> [] <enter> [] <enter> 500 <enter> Y <enter> 30 <enter> 120 <enter> 120 <enter> 300 <enter> 6 <enter> []<enter> Y <enter> Value,then <enter> DOWNLOAD <enter> </pre>	
10	<pre> P> </pre>	<pre> INSTALL PCT X POS N <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
14	<pre>P> Language 1 Display #8 PETRO VEND SYSTEM2 |Lang 1 | COMPANY NAME TERM [Trendar FDIS terminal #]</pre>	<pre>FORMAT DISPLAY 8 <enter> <enter></pre>	
15	<pre>P> Language 1 Display #9 INSERT CARD |Lang 1 | INSERT TRENDAR FDIS CARD</pre>	<pre>FORMAT DISPLAY 9 <enter> <enter></pre>	

System2 headers and trailers can each contain up to four lines. Each line is 11 characters long and can be printed in either red or black. In a network receipt (like Comdata), only the receipt header and trailer are programmable. The network receipt body is fixed, and cannot be changed.

The first two lines of the receipt header are programmed under the language 1 portion of the "FORMAT RECEIPT HEADER" command. The remaining two lines of the receipt header are programmed under the network portion.

Please note that both commands use lines 1 and 2 for entering this information. Text should be in uppercase and centered if possible.

Step	System2 displays:	Your command:	Previous info:
16	<p>P></p> <p>Enter Language 1 or N:1 <enter> Line 1-->| |</p> <p>...red print (Y/N)? Line 2-->||TERMINAL []</p> <p><i>[] is Trendar FDIS Terminal Number</i></p> <p>...red print (Y/N)? Line 3-->||</p>	<p>FORMAT RECEIPT HEAD <enter></p> <p>Your Company Name <enter></p> <p>Y <enter> [] <enter></p> <p>Y <enter> <enter></p>	
17	<p>P></p> <p>Enter Language Line 1-->|| CITY <enter></p> <p>...red print (Y/N)? Line 2-->||</p> <p>...red print (Y/N)? Line 3-->||</p>	<p>FORMAT RECEIPT HEAD <enter></p> <p>1 or N <enter></p> <p>Y <enter> State <enter> Y <enter> <enter></p>	

Step	System2 displays:	Your command:	Previous info:
18	<pre>P> Enter Language 1 or N Line 1-->| | ...red print (Y/N)? Line 2-->|| ...red print (Y/N)? Line 3-->|| (press space bar to advance cursor to the end of line) <enter> ...red print (Y/N)? Line 4-->|| ...red print (Y/N)? P></pre>	<pre>FORMAT RECEIPT TRAIL <enter> N <enter> [SIGN NAME] <enter> Y <enter> Y <enter> [BELOW] <enter> Y <enter> X <enter> Y <enter> DOWNLOAD <enter></pre>	

Step	System2 displays:	Your command:	Previous info:
19	<pre> P> ----- |Code| Prompt |Entry| # | |----|-----|-----|---| | A | REQUEST FUEL Y/N, | Y/N | 1 | | B | MILEAGE, | 123 | 6 | | C | TRIP #, | ABC | 10 | | D | TRIP LEG, | ABC | 2 | | E | PIN, | *** | 8 | | F | EMPLOYER ID, | ABC | 12 | | G | VEHICLE ID, | ABC | 12 | | H | TRAILER ID, | ABC | 12 | | I | REQUEST HOMES, | 123 | 6 | | J | DRIVER LICENSE STATE, | ABC | 2 | | K | DRIVER LICENSE #, | ABC | 20 | | L | VEHICLE LICENSE STATE, | ABC | 2 | | M | VEHICLE LICENSE #, | ABC | 20 | | N | TRAILER LICENSE STATE, | ABC | 2 | | O | TRAILER LICENSE #, | ABC | 20 | | P | DRIVER NAME, | ABC | 12 | | Q | PURCHASE PRICE #, | 123 | 9 | | R | CONTROL #: | 123 | 8 | | S | EXTRA PROMPT 1: | 123 | 1 | | T | EXTRA PROMPT 2: | 123 | 1 | Enter (Prompt Table Row # (A--T) or [Return] to exit): ----- - | S | EXTRA PROMPT 1: | 123 | 1 | Enter Prompt: Enter Entry Mode (0 = Numeric, 1=Hidden, 2=Yes/No, 3=Alpha): Enter Length (1..20): Enter (Prompt Table Row # (A--T) or [Return] to exit): </pre>	<pre> SET PROMPT <enter> S <enter> [Your Message] <enter> 0 <enter> 12 <enter> <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
20 cont.	Enter option number or press <return> to exit.	5 <enter>	
	Enter REDIAL ATTEMPTS:	3 <enter>	
	Enter option number or press <return> to exit.	6 <enter>	
	Enter CONNECT TIME seconds:	30 <enter>	
	Enter option number or press <return> to exit.	7 <enter>	
	Enter LOCAL AUTHORIZATION? (Y/N)?	N <enter>	
	Enter NUMBER (default=1):	1 <enter>	
	Enter DURATION (default=1):	1 <enter>	
	Enter ALLOW KEYED CARDS (Y/N):	N <enter>	
	Enter option number or press <return> to exit.	8 <enter>	
	Enter NETWORK processing ON time (HH:MM AM/PM):	12:00 AM <enter>	
	Enter NETWORK processing OFF time (HH:MM AM/PM):	12:00 AM <enter>	
	Enter option number or press <return> to exit.	9 <enter>	
	Enter AUTHORIZATION MESSAGE:	THANK YOU <enter>	
	Enter option number or press <return> to exit.	10 <enter>	
	Enter RE-PROMPT TIME minutes (0 - no limit):	10 <enter>	
	Enter option number or press <return> to exit.	11 <enter>	
	NETWORK option settings TRENDAR FDIS 1 - DIAL MODE .....TONE 2 - TONE DURATION ....75 3 - DIAL TONE .....YES 4 - BAUD RATE .....1200 5 - DATA BITS .....7 6 - PARITY .....EVEN 7 - STOP BITS .....1		

Step	System2 displays:	Your command:	Previous info:
20 cont	<p>Enter SECONDARY #:</p> <p>Enter ONLINE [On]</p> <p>Enter OFFLINE [Off]</p> <p>Enter Override:</p> <p>Enter Discount:</p> <p>ENTER (fleet table row # 1-20 or [return] to exit):</p> <p>NETWORK CHOICES</p> <p>1 - TRENDAR FDIS</p> <p>6 - SET FLEET TABLE</p> <p>7 - PERFORM COMMUNICATION TEST</p> <p>8 - SET FORCED TRANS CAPTURE TIME</p> <p>9 - FORCE TRANSACTION CAPTURE 500 SECONDS</p> <p>Enter option number or press [RETURN] to exit:</p> <p><i>Here, Fleet table is redisplayed with your ROW 1 changes visible.</i></p> <p>ENTER (fleet table row # 1-20 or [return] to exit):</p> <p><i>Here, Fleet table ROW 1 is displayed with your changes visible.</i></p> <p>Performing test...please wait Communication test...no error [card number data] INVALID CARD NR MSG#00012.</p> <p><i>NOTE: If you do NOT see the "Invalid Card" message, check the Troubleshooting appendix for comm errors.</i></p>	<p>18001234567 <enter></p> <p>500 <enter></p> <p>0 <enter></p> <p>10 <enter></p> <p>0 <enter></p> <p><enter></p> <p>7 <enter></p> <p>1 <enter></p>	

Step	System2 displays:	Your command:	Previous info:
20 cont.	<p>NETWORK CHOICES</p> <p>1 - TRENDAR FDIS</p> <p>6 - SET FLEET TABLE</p> <p>7 - PERFORM COMMUNICATION TEST</p> <p>8 - SET FORCED TRANS CAPTURE TIME</p> <p>9 - FORCE TRANSACTION CAPTURE 500 SECONDS</p> <p>Enter option number or press [RETURN] to exit:</p>	<p><enter></p>	
21	<p>P></p> <p> ** SET TAX**</p> <p>Federal Tax.....0.00</p> <p>State Tax.....0.00</p> <p>Federal Tax Rebate.....0.00</p> <p>State Tax Rebate.....0.00</p> <p>Sales Tax.....0.00</p> <p>Enter FEDERAL TAX</p> <p>Enter STATE TAX</p> <p>Enter FEDERAL TAX REBATE</p> <p>Enter STATE TAX REBATE</p> <p>Enter SALES TAX</p> <p>P></p> <p>P></p>	<p>SET TAX</p> <p><enter></p> <p>.01 <enter></p> <p>.05 <enter></p> <p>.01 <enter></p> <p>.01 <enter></p> <p>.05 <enter></p> <p>DOWNLOAD</p> <p><enter></p>	

Appendix K - Generic Networks

This appendix tells you how to set up networks not described in the other appendices in this manual. Please see your System2 Operators Guide for explanations of commands. Also, your responses may be different for each network configured. The responses shown in this guide are not always best for your site, they represent basic responses required to bring up the site.

You will need a CRT terminal, or a PC running terminal emulation software. Fuel Site Controller (FSC) baud rate is set at 1200 baud by default. Set other COMM parameters to E,7,1 (with Wyse 50 or VT100 emulation).

The > prompt means communication is working. Type HELLO and press ENTER. Next you will see ENTER PASSWORD. Type HELLO again, and press ENTER. The P> prompt means you are in privileged mode. To configure the System2 you must be in privileged mode.

Do a COLD START It is also recommended that you perform a cold start before you proceed with configuration.

Step	System2 displays:	Your command:	Previous info:
1	P> Enter Time (xx:xx am/pm):	SET TIME <enter> Enter current time then <enter>	
2	P> Enter Date (MMM DD, YYYY):	SET DATE <enter> Enter date in MMM DD, YYYY format (e.g. Jan 1, 1997) <enter>	
Step	System2 displays:	Your command:	Previous info:
3	P> Options: 0-STD (level 1) 1-EMA (level 2) 2-EMB 3-EMC (level 3) 4-EMD (level 4) 5-EME Current Option: EMA (level 2)	SET RAM <enter> 1 <enter>	

Step	System2 displays:	Your command:	Previous info:
4	<p>P></p> <p>1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:</p> <p>Note: Transaction and Message Buffer Will Be Cleared! (Y/N)</p> <p>--Enable Messaging (Y/N)</p> <p>Enter Transaction Size Code:</p> <p># Of Cards/Accts (Min. Opt): (Max. Options):</p> <p># Of Transactions:</p> <p># Of Messages: --Save This Configuration (Y/N)?</p> <p>1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:</p>	<p>SET CARD BUFFER <enter></p> <p>1 <enter></p> <p>y <enter></p> <p>n <enter></p> <p>30 <enter></p> <p>366 <enter></p> <p>512 <enter></p> <p>750 <enter></p> <p>0 <enter></p> <p>Y <enter></p> <p>2 <enter></p>	

Step	System2 displays:	Your command:	Previous info:
4 cont	Card/Account Records: Card/Account Not Yet Defined Specify Card/Account Record (Y/N) Card/Account File Will Be Destroyed!!! Sure (Y/N)? Account #s Expiration Date Monthly Allocation Daily Allocation PIN # Save Odometer Entries Pump Restriction Quantity Restriction Driver/Vehicle/Account Name Verify 1? Verify 2? Verify 3? Prompt Seq. MAXIMUM CARDS/ACCOUNTS: XXXX 1-Specify Card/Account Buffer Size 2-Define Card/Account Record 3-Clear Card Record Totals 4-Reconcile Card Record Allocation 5-Clear All Account Record Totals 6-Reconcile Account Record Allocation 7-Month End Totals 8-Set Keyboard Card Control Data 9-Additional Options X-Exit Enter Choice:	Y <enter> Y <enter> N <enter> N <enter> X <enter>	

Step	System2 displays:	Your command:	Previous info:
6	<p>P></p> <p>VERY IMPORTANT! Unlike non-network systems, the journal printer MUST be connected to the PRINTER port, NOT AUX 1.</p> <p>Office Journal (Y/N)? Set Journal Printer Options (Y/N)? Print: Account, Driver, Vehicle, Odom Misc (Y/N)? Account #, Card 2 (Y/N)? Prompt Responses (Y/N)? Journal Error Option? --Enable Auth On Journal Error (Y/N)?</p>	<p>SET JOURNAL <enter></p> <p>Y <enter> Y <enter></p> <p>Y <enter> Y <enter> Y <enter> Y <enter></p> <p>Y <enter></p>	

Step	System2 displays:	Your command:	Previous info:
9	<p>P></p> <p>PCT 1 POSITION 1 Enter Pump #: Enter Pulses Per Gallon Max Fuel to Be Dispensed Per Transaction: Enable Pump Sentry (Y/N)? <i>(Do NOT enable if testing with pump simulator)</i> Pump Sentry: Enabled Maximum Time Allowed for Fueling (minutes): Maximum Time Allowed to Retrieve Pump Handle (seconds): Maximum Time to Detect First Fueling Pulse (seconds): Maximum Time Allowed Between Fueling Pulses (seconds): Enter Fueltype Code #: Enter Tank # Clear Pump Totals (Y/N)? --Cleared Enter Totalizer Value:</p> <p>P></p>	<p>CONFIG PCT X POS N < enter ></p> <p>[] < enter > [] < enter > [] < enter > 500 < enter > Y < enter ></p> <p>30 < enter ></p> <p>120 < enter ></p> <p>120 < enter ></p> <p>300 < enter > 6 < enter > [] < enter > Y < enter ></p> <p>Value, then < enter ></p> <p>DOWNLOAD < enter ></p>	
10	<p>P></p>	<p>INSTALL PCT X POS N < enter ></p>	

Step	System2 displays:	Your command:	Previous info:
11	<p>P></p> <p>OKAY</p> <p><i>Repeat for each PCT and position.</i></p>	<p>INSTALL PCT X <enter></p>	
12	<p>P></p> <p>Is This an OPT (Y/N)? Enter Decline Message Time-out Code in (seconds): Enter Prompt Time-out Code (1..9) Issue Receipts (Y/N)? --Enter Limit To Receive Receipts in Days (0..99) Clear Receipt Counter (Y/N)? Enable Keyboard Access (Y/N)? Specify PCT's To Shut Off On E-Stop (Y/N)? Change FIT Access To Pumps (Y/N)?</p> <p>FIT Installed Island Terminal: FIT Decline Time-out: 60 Seconds Prompt Time-out: 55 Seconds Receipts: 01-Day Limit To Receive Receipt Keyboard Access -- Disabled PCT's To Shut Off On E-Stop: 1,2,3,4 Card Reader Error Counter: 0 --Access To All Pumps</p> <p>P></p>	<p>CONFIG FIT X <enter></p> <p>N <enter></p> <p>60 <enter></p> <p>9 <enter></p> <p>Y <enter></p> <p>1 <enter></p> <p>Y <enter></p> <p>N <enter></p> <p>N <enter></p> <p>N <enter></p> <p>N <enter></p> <p>DOWNLOAD <enter></p>	
13	<p>P></p> <p>OKAY</p> <p><i>Repeat for each FIT.</i></p>	<p>INSTALL FIT X <enter></p>	

Step	System2 displays:	Your command:	Previous info:
14	<pre>P> Language 1 Display #8 PETRO VEND SYSTEM2 |Lang 1 | COMPANY NAME TERM [terminal #]</pre>	<pre>FORMAT DISPLAY 8 <enter> <enter></pre>	
15	<pre>P> Language 1 Display #9 INSERT CARD |Lang 1 | INSERT [NETWORK NAME] CARD</pre>	<pre>FORMAT DISPLAY 9 <enter> <enter></pre>	

System2 headers and trailers can each contain up to four lines. Each line is 11 characters long and can be printed in either red or black. In a network receipt, only the receipt header and trailer are programmable. The network receipt body is fixed, and cannot be changed.

The first two lines of the receipt header are programmed under the language 1 portion of the "FORMAT RECEIPT HEADER" command. The remaining two lines of the receipt header are programmed under the network portion.

Please note that both commands use lines 1 and 2 for entering this information. Text should be in uppercase and centered if possible.

Step	System2 displays:	Your command:	Previous info:
16	P> Enter Language 1 or N:1 <enter> Line 1-->|| ...red print (Y/N)? Line 2-->||TERMINAL [] ...red print (Y/N)? Line 3-->||	FORMAT RECEIPT HEAD <enter> Your Company Name <enter> y/n <enter> [] <enter> y/n <enter> <enter>	
17	P> Enter Language Line 1-->| | ...red print (Y/N)? Line 2-->|| ...red print (Y/N)? Line 3-->||	FORMAT RECEIPT HEAD <enter> 1 or N [city] <enter> y <enter> [State] <enter> Y <enter> [opt. info] <enter>	

Step	System2 displays:	Your command:	Previous info:
18	<p>P></p> <p>Enter Language 1 or N</p> <p>Line 1-->| | ...red print (Y/N)?</p> <p>Line 2-->|| ...red print (Y/N)?</p> <p>Line 3-->|| (press space bar to advance cursor to the end of line) ...red print (Y/N)?</p> <p>Line 4-->|| ...red print (Y/N)?</p> <p>P></p>	<p>FORMAT RECEIPT TRAIL <enter></p> <p>N <enter></p> <p>[txt] <enter> Y <enter></p> <p>[txt] <enter> y <enter></p> <p>[txt] <enter> Y <enter></p> <p>DOWNLOAD <enter></p>	

Step	System2 displays:	Your command:	Previous info:
19	<pre> P> ----- |Code| Prompt |Entry| # | |----|-----|-----|----| | A |SERPHE FUEL Y/N. | Y/N | 1 | | B |MILEAGE. | 123 | 6 | | C |TRIP \$. | ABC | 12 | | D |TRIP LED. | ABC | 2 | | E |PIN. | *** | 8 | | F |DRIVER ID. | ABC | 16 | | G |VEHICLE ID. | ABC | 12 | | H |TRAILER ID. | ABC | 12 | | I |SERPHE HOURS. | 123 | 7 | | J |DRIVER LICENSE STATE. | ABC | 2 | | K |DRIVER LICENSE \$. | ABC | 20 | | L |VEHICLE LICENSE STATE. | ABC | 2 | | M |VEHICLE LICENSE \$. | ABC | 20 | | N |TRAILER LICENSE STATE. | ABC | 2 | | O |TRAILER LICENSE \$. | ABC | 20 | | P |DRIVER NAME. | ABC | 16 | | Q |PURCHASE PRICE \$. | 123 | 9 | | R |CONTROL \$. | 123 | 12 | | S |PRO \$. | 123 | 1 | | T |EXTRA PROMPT. | 123 | 8 | Enter (Prompt Table Row # (A--T) or [Return] to exit): ----- | S |EXTRA PROMPT 1: | 123 | | 1 | Enter Prompt: Enter Entry Mode (0 = Numeric, 1=Hidden, 2=Yes/No, 3=Alpha): Enter Length (1..20): Enter (Prompt Table Row # (A--T) or [Return] to exit): </pre>	<pre> SET PROMPT <enter> S <enter> [Your Message] <enter> 0 <enter> 12 <enter> <enter> </pre>	

Step	System2 displays:	Your command:	Previous info:
20	<pre> P> NETWORK CHOICES 1 - [ENABLED NETWORK 1] 2 - [ENABLED NETWORK 2] 3 - [ENABLED NETWORK 3] 6 - SET FLEET TABLE 7 - PERFORM COMMUNICATION TEST 8 - SET FORCED TRANS CAPTURE TIME 9 - FORCE TRANSACTION CAPTURE 500 SECONDS Enter option number or press [RETURN] to exit: NETWORK option settings 1 - SITE ID 2 - SITE NAME 3 - SITE CITY..... 4 - SITE STATE..... 5 - REDIAL ATTEMPTS.....1 6 - CONNECT TIME...(seconds)...30 7 - LOCAL AUTHORIZATION.....ON 8 - NETWORK SYSTEM.....Disabled CN.....12:00 AM OFF.....12:00 AM 9 - AUTHORIZATION MESSAGE..HAVE A SAFE TRIP 10-RE-PROMPT TIME...(MINUTES)...10 11-COMMUNICATION PARAMETERS..1200 7E1 T75Y Enter option number or press [RETURN] to exit: Enter SITE ID:* Enter option number or press [RETURN] to exit: Enter SITE NAME: Enter option number or press [RETURN] to exit: Enter SITE CITY: </pre>	<pre> SET NETWORK <enter> 1 <enter> 1 <enter> [Site ID] <enter> 2 <enter> [Site Name] <enter> 3 <enter> Site City <enter> </pre>	<pre> *SITE ID is provided by network. SITE ID is required for authorization! </pre>

Step	System2 displays:	Your command:	Previous info:
20 cont.	Enter option number or press <return> to exit. Enter REDIAL ATTEMPTS: Enter option number or press <return> to exit. Enter CONNECT TIME seconds: Enter option number or press <return> to exit. NOTE: "Local Authorization" is not allowed in some networks. Contact your network house before enabling the feature. If feature is enabled and your network does not support it, your network will NOT authorize the transaction, and you will have to manually collect payment. Enter LOCAL AUTHORIZATION? (Y/N)? Enter NUMBER (default=1): Enter DURATION (default=1): Enter ALLOW KEYED CARDS (Y/N): Enter option number or press <return> to exit. Enter NETWORK processing ON time (HH:MM AM/PM): Enter NETWORK processing OFF time (HH:MM AM/PM): Enter option number or press <return> to exit. Enter AUTHORIZATION MESSAGE: Enter option number or press <return> to exit. Enter RE-PROMPT TIME minutes (0 - no limit): Enter option number or press <return> to exit. AL TONE .....YES 4 - BAUD RATE .....1200 5 - DATA BITS .....7 6 - PARITY .....EVEN	5 <enter> 3 <enter> 6 <enter> 30 <enter> 7 <enter> Y <enter> 1 <enter> 1 <enter> N <enter> 8 <enter> 12:00 AM <enter> 12:00 AM <enter> 9 <enter> THANK YOU <enter> 10 <enter> 10 <enter> 11 <enter>	

Step	System2 displays:	Your command:	Previous info:
20 CONT	<p>Enter SECONDARY #:</p> <p>Enter ONLINE [On] | Enter OFFLINE [Off] | Limit by (D)ollar or (Q)uantity |</p> <p>Enter DOLLAR limit (no cents)\$: (if D selected)</p> <p>ENTER (fleet table row # 1-20 or [return] to exit):</p> <p>NETWORK CHOICES</p> <p>1 - [ENABLED NETWORK 1] 2 - [ENABLED NETWORK 2] 3 - [ENABLED NETWORK 3]</p> <p>6 - SET FLEET TABLE 7 - PERFORM COMMUNICATION TEST* 8 - SET FORCED TRANS CAPTURE TIME 9 - FORCE TRANSACTION CAPTURE 500 SECONDS</p> <p><i>*The EFS, NTS, T-CHEK and NBS for CFI do NOT support communication tests. Option 7 does not apply to these networks.</i></p> <p><i>To test these networks, use the network-supplied test card (if available) or a valid network card if a test card is unavailable.</i></p>	<p>18001234567 <enter></p> <p>500 <enter> 0 <enter> D or Q <enter> dollar amt <enter></p> <p><enter></p> <p><enter></p>	

Step	System2 displays:	Your command:	Previous info:
20 cont.	NETWORK CHOICES 1 - [ENABLED NETWORK 1] 2 - [ENABLED NETWORK 2] 3 - [ENABLED NETWORK 3] 6 - SET FLEET TABLE 7 - PERFORM COMMUNICATION TEST 8 - SET FORCED TRANS CAPTURE TIME 9 - FORCE TRANSACTION CAPTURE 500 SECONDS Enter option number or press [RETURN] to exit:	<enter>	
21	P> <i>NOTE: Tax information is used only by Trendar/FDIS networks.</i> ** SET TAX** Federal Tax.....0.00 State Tax.....0.00 Federal Tax Rebate.....0.00 State Tax Rebate.....0.00 Sales Tax.....0.00 Enter FEDERAL TAX Enter STATE TAX Enter FEDERAL TAX REBATE Enter STATE TAX REBATE Enter SALES TAX P> P>	SET TAX <enter> .01 <enter> .05 <enter> .01 <enter> .01 <enter> .05 <enter> DOWNLOAD <enter>	

After completing this procedure, the FSC is ready to process transactions for enabled networks. To use the proprietary card database, see the appropriate appendix in this manual.

For questions regarding network-specific errors, see documentation for that network.

For questions on configuration or other PV equipment, see the appropriate manuals. If you cannot locate answers to your questions, please contact PC technical service at 708-485-4200.

Appendix L - FIT Alphanumeric Conversion

This appendix tells you how to convert a standard FIT terminal into a FIT terminal that accepts alphanumeric entry.

1. Turn off Fuel Island Terminal (FIT) power.
2. Carefully remove the old version FIT EPROM from socket U7 and PAL CHIP from socket U12.
3. Install the new version FIT EPROM into U7 and the PAL CHIP into U12 with the notch facing up.

Caution

Use care not to bend pins on the EPROM.

4. Disconnect the keyboard cable from the pocket lights, beeper, keyboard, e-stop button and J2 of the PV269 board. Discard the cable.
5. Remove the E-Stop button from the pocket by unscrewing the nut on the back of the pocket.
6. Remove the E-Stop plate from the pocket by prying it off with a flat blade screwdriver.
7. Clean the pocket area around the E-Stop button.
8. Center the new **54-0232 alpha plate** over the hole.
9. Insert the new **20-5032 alpha switch/cable assembly** through the hole from the front of the pocket.
10. Place the new **50-0173 washer** over the back of the alpha switch and cable. Secure the Alpha Switch and washer with the nut supplied.
11. Install the new **20-1463 alpha keyboard cable** to J2 of the PV269, beeper, pocket lights, keyboard and the new alpha switch connector.
12. Route the alpha keyboard cable the same way as the old one.
13. Place the new alpha instruction label on the front right of the door overlay, centering it to the right of the alpha switch button.
14. Close SWITCH 1 POS 1 on the FIT board. Press YES to test pocket lights, beeper, and the alpha switch.
15. When everything is working, open SWITCH 1 POS 1 and press RESET.

Appendix G - System2 Commands Summary

Table 27 is a complete list of all System2 commands. NOT ALL COMMANDS ARE AVAILABLE IN ALL SYSTEMS.

- [P]Privileged - command requires user to be in privilege mode to use.
- [D]Download – command requires a download for changes to take effect.
- [O]Optional - command requires option to be purchased.
- #Requires your numerical entry.

Table 27: System2 Commands Summary

TIME MANAGEMENT
SET TIME [P]
PRINT/SHOW TIME
SET DATE [P]
PRINT/SHOW DATE
FORMAT DATE
SET TIME CHANGE [P]
PRINT/SHOW TIME CHANGE
SET SYSTEM TIMES [P]
PRINT/SHOW SYSTEM TIMES
SET LIGHT [P]
OPEN [P]
CLOSE [P]

SYSTEM MEMORY
SET RAM [P]
PRINT/SHOW RAM

Table 27: System2 Commands Summary (Continued)

PROGRAMMABLE DATABASE
SET CARD BUFFER [P]
SET SECURITY TABLE [P]
PRINT/SHOW SECURITY TABLE
INSERT CARD [P]
COPY CARD [P]
EDIT CARD [P]
DELETE CARD [P]
PRINT/SHOW CARD
PRINT/SHOW CARD “#”
INSERT ACCOUNT [P]
EDIT ACCOUNT [P]
DELETE ACCOUNT [P]
PRINT/SHOW ACCOUNT
PRINT/SHOW ACCOUNT “#”

FUEL/TANKS
SET FUELING UNITS [P]
PRINT/SHOW FUELING UNITS
SET FUELTYPE “#” [P]
PRINT/SHOW FUELTYPE
SET TANK “#” [P]
PRINT/SHOW TANK

PUMP CONTROL TERMINAL
CONFIGURE PCT “#” [P, D]
CONFIGURE PCT “#” POS “#” [P, D]
INSTALL PCT “#” [P]
INSTALL PCT “#” POS “#” [P]
REMOVE PCT “#” [P]

Table 27: System2 Commands Summary (Continued)

REMOVE PCT “#” POS “#” [P]
REMOVE PUMP “#”
PRINT/SHOW PCT “#”
CONFIGURE PUMP #
PRINT/SHOW PUMP “#”
INSTALL PROGRAM [P]
REMOVE PROGRAM [P]

FUEL ISLAND TERMINAL
CONFIGURE FIT “#” [P, D]
INSTALL FIT “#” [P]
REMOVE FIT “#” [P]
PRINT/SHOW FIT “#”

Commercial/Outdoor Payment TERMINAL
CONFIGURE OPT “#” [P, D]
INSTALL OPT “#” [P]
REMOVE OPT “#” [P]
PRINT/SHOW OPT “#”

MESSAGES
FORMAT DISPLAY “#” [P, D]
FORMAT DISPLAY DEFAULT [P, D]
PRINT/SHOW DISPLAY
PRINT/SHOW DISPLAY “#”
FORMAT KEYBOARD “#” [P, D]
PRINT/SHOW KEYBOARD
PRINT/SHOW KEYBOARD “#”

Table 27: System2 Commands Summary (Continued)

RECEIPT PRINTER
FORMAT RECEIPT HEADER [P, D]
PRINT/SHOW RECEIPT HEADER
FORMAT RECEIPT TRAILER [P, D]
PRINT/SHOW RECEIPT TRAILER
FORMAT RECEIPT BODY [P, D]
SET BONUS POINTS [P, D]
PRINT/SHOW BONUS POINTS
FORMAT RECEIPT BONUS POINTS [P, D]
PRINT/SHOW RECEIPT BONUS POINTS

TRANSACTION BUFFER
SET TRANSACTION [P]
PRINT/SHOW TRANSACTION
PRINT SHOW TRANSACTION “#”

JOURNAL PRINTER
SET JOURNAL PRINTER [P]
PRINT/SHOW JOURNAL PRINTER
LOCK JOURNAL
UNLOCK JOURNAL

RESTRICTIONS
SET PUMP RESTRICTION [P]
PRINT/SHOW PUMP RESTRICTION
SET QUANTITY [P]
PRINT/SHOW QUANTITY

Table 27: System2 Commands Summary (Continued)

ODOMETER REEASONABILITY
SET REASONABILITY [P]
PRINT SHOW REASONABILITY
SITE ID
SET SITE ID [P]
PRINT/SHOW SITE ID
PASSWORD
SET PASSWORD [P]
PRINT/SHOW PASSWORD
DUAL LANGUAGE (NOT ALL SYSTEMS)
SET LANGUAGE [P] (NOT ALL SYSTEMS)
PRINT/SHOW LANGUAGE
PUMP/FUEL REPORTS
PRINT/SHOW FUELTYPE “#” TOTALS
PRINT/SHOW PUMP “#” TOTALS
CLEAR PUMP “#” TOTALS
PRINT/SHOW PCT “#” TOTALS
CLEAR PCT “#” TOTALS
PRINT/SHOW TANK
PRINT/SHOW MIDNIGHT TOTALS
CARD/ACCOUNT REPORTS
PRINT/SHOW <validity> <source><category> CARD <range>
PRINT/SHOW ACCOUNT
PRINT/SHOW ACCOUNT “#”

Table 27: System2 Commands Summary (Continued)

PRINT/SHOW CARD ACCOUNT “#”
PRINT/SHOW CARD SUMMARY

TRANSACTION REPORTS
PRINT/SHOW TRANSACTION
PRINT/SHOW TRANSACTION “#”
PRINT/SHOW TRANSACTION SUMMARY
PRINT SHOW DAY
PRINT/SHOW DAY <mmm dd,yyy>
CLEAR TRANSACTION <mmm dd,yyy> SEQUENCE <#> [P]
CLEAR TRANSACTION [P]
SHOW TRANSACTION CF

TRANSACTION SEARCHES
PRINT/SHOW TRANSACTION WHERE DATE = <mmm dd,yyy>
PRINT/SHOW TRANSACTION WHERE DATE < <mmm dd,yyy>
PRINT/SHOW TRANSACTION WHERE DATE > <mmm dd,yyy>
PRINT/SHOW TRANSACTION WHERE TIME = <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE TIME < <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE TIME > <hh:mm am/pm>
PRINT/SHOW TRANSACTION WHERE CARD = <#>
PRINT/SHOW TRANSACTION WHERE VEHICLE = <#>
PRINT/SHOW TRANSACTION WHERE ACCOUNT = <#>

SHIFT
SHIFT [P]
PRINT/SHOW SHIFT

MODEM/PASSTHRU PORT
CALL [P]

Table 27: System2 Commands Summary (Continued)

PASSTHROUGH [P]
INTEFACING TO EXTERNAL COMPUTER
COMPUTER (TEST) <command> [P]
ECHO [P]
BACKUP “#” [P]
RESTORE [P]
UPDATE <site id(/fields)(/checksum)> [P]
SYSBACKUP [P]
SYSRESTORE <#####> [P]
PUNCHCODE
PUNCHCODE [P,O]
TROUBLESHOOTING
TEST [P] Warning – AUTHORIZED USE ONLY – may erase system configuration!
REPORT PACKAGE
REPORT [P,O]
NETWORKS
SET NETWORK [P]
SET HOST [P]
SET BATCH [P]
FORCE BATCH CLOSE [P]
SET FLEET [P]
SET GASCARD [P]
FLEETLINK

Table 27: System2 Commands Summary (Continued)

INSTALL VIT “#” [P, D]
INSTALL VIT “#” POS “#” [P, D]
REMOVE VIT “#” [P, D]
REMOVE VIT “#” POS “#” [P, D]
PRINT/SHOW VIT “#” POS “#” [P, D]
INSERT VIU [P]

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