OPW
FUEL MANAGEMENT SYSTEMS

System2®

Visanet-Ready Card Record System

Operator's Manual

FSC Software Version S041216.2C

 Manual **M41-21.62C**

OPW Fuel Management Systems -
System and Replacement Parts Warranty Statement

Effective September 1, 2002

System and Replacement Parts Warranty

OPW Fuel Management Systems warrants that all OPW Tank Gauge and Petro Vend Fuel Control systems supplied by OPW Fuel Management Systems to the Original Purchaser will be free from defects in material and/or workmanship under normal use and service for a period of 12 months from the date of installation or 15 months from the date of shipment. Additionally, OPW Fuel Management Systems warrants that all upgrades and replacement parts (new and remanufactured) supplied by OPW Fuel Management Systems will be free from defects in material and workmanship under normal use and service for a period of 90 days from the date of installation or for the remainder of the system's original warranty, whichever is greater, as set forth in the first sentence of this statement. The foregoing warranties will not extend to goods subjected to misuse, neglect, accident, or improper installation or maintenance or which have been altered or repaired by anyone other than OPW Fuel Management Systems or its authorized representative.

The buyer's acceptance of delivery of the goods constitutes acceptance of the foregoing warranties and remedies, and all conditions and limitations thereof.

If a claim is made within the warranted time period that any equipment and/or remanufactured part is defective in material or workmanship under normal use and service, such equipment and/or remanufactured part shall be returned to OPW Fuel Management Systems, freight prepaid. If such equipment or remanufactured part is found by OPW Fuel Management Systems in its sole judgment, to be defective in material or workmanship under normal use and service, OPW Fuel Management Systems, shall, at its sole option, repair or replace such equipment and/or remanufactured part (excluding, in all instances, fuses, ink cartridges, batteries, other consumable items, etc.)

The warranties, as set forth above, are made expressly in lieu of all other warranties, either expressed or implied, including, without limitation, warranties of merchantability and fitness for any particular purpose and of all other obligations or liabilities on OPW Fuel Management Systems part. Further, OPW Fuel Management Systems neither assumes, nor authorizes any other person to assume for it, any other liability in connection with the sale of the systems, or any new/replacement part that has been subject to any damage from any act of nature or any *force majeure*.

The term "Original Purchaser" as used in these warranties shall be deemed to mean the authorized OPW Fuel Management Systems distributor to which the system or any new/replacement part was originally sold. These warranties may be assigned by the original purchaser to any of its customers who purchase any OPW Fuel Management Systems systems or new/replacement parts.

The sole liability of OPW Fuel Management Systems, for any breach of warranty, shall be as set forth above. OPW Fuel Management Systems does not warrant against damage caused by accident, abuse, faulty or improper installation or operation. In no event shall manufacturer's liability on any claim for damages arising out of the manufacture, sale, delivery or use of the goods exceed the original purchase price of the goods. In no event shall OPW Fuel Management Systems be liable for any direct, indirect, incidental or consequential damage or loss of product.

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Meet System2!

Fleet operators and petroleum distributors now have a fueling system to match their business needs: the Petro Vend System2, a flexible, powerful tool for fuel management that is easy to program and even easier to use. The System2 gives you security, accountability and control.

Features of your new System2 include:

Superior Fuel Site Control

Your system can track an extensive list of card record parameters and transaction data.

Multiple Card Formats

The Fuel Island Terminal (FIT) and Outdoor Payment Terminal (OPT) are the customer interfaces containing the card readers, a keypad, and a display screen. The standard FIT can be equipped to handle magnetic stripe cards, optical cards, and Petro Vend ChipKeys™.

Maximum Configuration Flexibility

One Fuel Site Controller (FSC), the small desktop control box, can control up to four FITs (or 32 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.

- **Petro Vend OPT (Outdoor Payment Terminal) Compatible**
- **Commercial Fueling Network Flexibility**

  Accepts commercial fueling cards, truck fleet cards, oil company cards and major bankcards.
- **Large Memory Capacity**

  Four memory levels are available for your system, handling up to 140,000 proprietary cards or 10,000 transactions.
- **Menu-driven Programming**

  Step-by-step menus guide you through most system functions.
- **Runs existing K2500 software**
- **On-site or remote access**
- **Automatic daily pump totals**

- **On-demand Pump, Product and Shift Totals**
- **Tank Inventory Levels with Low Level alert**
- **16 Product or Quantity Restriction levels**
- **Cardless (keypad entry) operation allowed**
- **Single or Dual Card/Key Operation (Driver/Vehicle)**
- **Programmable customer messages and receipts**
- **Card, Key or Account Lockout**
- **Account discounts**
- **Programmable Open/Close system times**
- **Three password options**
- **Self-test and diagnostic functions.**

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

Equipment Overview

A System2 installation consists of:

- FITs (Fuel Island Terminals) and/or OPTs (Outdoor Payment Terminals)
- PCTs (Pump Control Terminals)
- An FSC (Fuel Site Controller).

Each is described next.

Fuel Island Terminal (FIT)

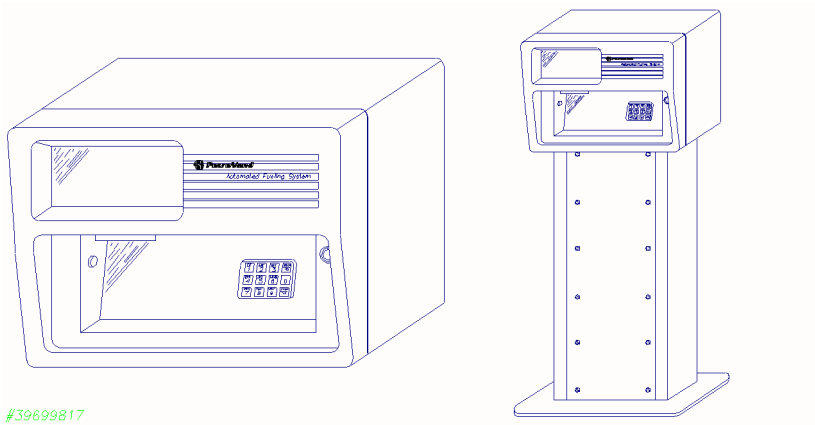


Figure 1: System2 Fuel Island Terminal

See *Figure 1*. The FIT contains the keypad (for user entries of data), one or two card readers, and the receipt printer. The FIT gathers information from the pumps, and sends it to the FSC.

Up to four FITs can be installed per site. The FIT has a display for prompting customers through the fueling process, a keypad for data entry, and one or two card or key readers.

FITs connect to the FSC with twisted-pair wiring (Petro-Net) inside rigid steel conduit. The FSC manages the FIT(s) and the peripheral devices.

Install FITs as shown in the *System 2 Installation Manual*. The installation manual also details the FIT board and descriptions of its status LEDs and programming switches.

You can use a card or key to access System2. The FIT can have one or two readers for magnetic stripe cards, optical cards, or ChipKeys.

Three types of display are available:

- Single-row of characters
- Double row of characters
- Graphics display

See *Customer Messages* on page 53of this book for more details.

An optional receipt printer can be installed in the FIT to provide transaction information to the customer. Like the display, the data and format of the receipt are programmable.

[1] - [0]

Use the ten number keys to enter PIN numbers, pump numbers, odometer entries and miscellaneous information. As a memory aid, the data keys are labeled as on a telephone. For example, a customer with the PIN "3733" could remember this as "FRED" by associating each number with a letter from the data key.

ENTER/ YES

This key has two functions: as an ENTER key, it sends your keyboard entry to the system. Its other function is to answer YES to a YES/NO? prompt.

CLEAR/ NO

This key, also dual-purpose, either clears a displayed entry or answers NO to a YES/NO? prompt.

EMERG STOP

Press the Emergency Stop* button to immediately stop the fuel pumps. You can program which PCTs are affected by the Emergency Stop button on each FIT. System2 returns to normal operation when the next card or key is inserted.

* Warning

The emergency stop switch on the FIT may not satisfy the National Electrical Code requirements! Article 514-5 of NFPA 70 states "Emergency controls shall be located more than 20 feet but less than 100 feet from the dispensers. The emergency controls must shut off all power to all dispensing equipment at the station". This is as always subject to approval by the authority having jurisdiction.

Table 1: FIT Specifications

Dimensions	***Cabinet*** 15" H x 18" W x 11" D (38 x 46 x 28 cm) ***Pedestal:*** 48" H x 14" W x 8" D (122 x 36 x 20 cm)
Power Requirements	110-120 VAC, 50/60 Hz, 200 W max 220-240 VAC, 50/60 Hz, 200 W max
Operating Temperature Range	-40EF to +122EF (-40EC to +50EC) Heater required for FIT operation below freezing point (32EF or 0EC)
Display Options	Standard: 2-row x 16-character fluorescent Option 1: 1-row x 40-character fluorescent Option 2: 64,000 pixel (200 x 320) graphics screen*
Reader Options	Magnetic Stripe Reader ("Swipe" or motorized) Optical Reader ChipKey™

OPT Option

The OPT is a dual-sided terminal. It emulates a standard System2 FIT, although it is designed to serve *both* sides of a fueling island. The OPT counts as two readers. The configuration procedure for an OPT is similar to that of a FIT as well.

Like the regular FIT, the OPT works with a System2 Fuel Site Controller (FSC); all System2 FSC software works with the OPT as well. With this configuration, a total of four card readers are supported (two regular FITs and one OPT).

Warning

Do NOT use high-pressure equipment to clean the FIT. *WIPE* it clean with a cloth soaked with mild detergent.

Pump Control Terminal (PCT)

The PCT gathers the data from the pumps and formats it for the FSC. The PCT can either be built in to the FIT - as a PC board located behind the FIT PC board, or in the OPT counts as two readers. a separate indoor cabinet. See *Figure 2*.

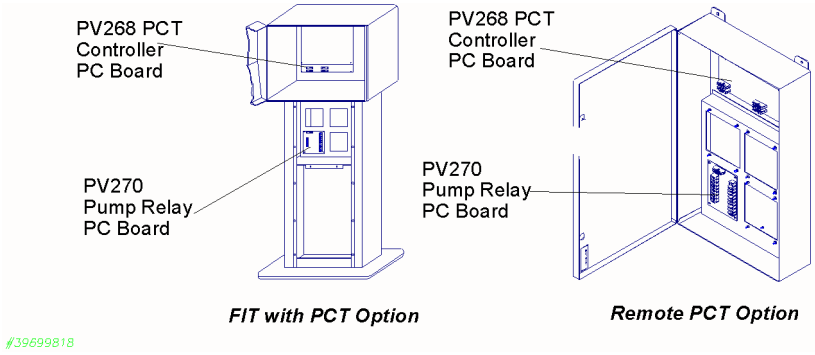


Figure 2: System2 Pump Control Terminal (PCT)

Up to four PCTs can be installed in two types of installation (see above).

- The PCT circuit board is located in the FIT cabinet and the pump control relays are mounted in the FIT pedestal. An *OPT enclosure cannot contain any PCT components.*
- The PCT board and pump control relays are placed in a separate, indoor cabinet.

Both types of installation provide the following:

- Easy access to pump control relays
- Active and passive pulser support
- Electronic and mechanical pulser support
- Pulser activation by current flow or handle activation.

With optional ***Universal Pump Control*** (UPC) software, the FSC can authorize fueling transactions via a pump control console (such as used in a self service station).

For pumps controlled by a UPC, see the *UPC Operator Guide*.

PCT Specifications

Table 2: PCT Specifications

Dimensions (indoor cabinet style)	25" H x 16" W x 5" D (64 x 41 x 13 cm)
Power Requirements (indoor cabinet style)	110-120 VAC, 50/60 Hz, 100 W max 220-240 VAC, 50/60 Hz, 100 W max
Operating Temperature Range (indoor cabinet style)	32EF to +122EF (0EC to +50EC)
Pump Rating	3/4 HP, 120/240 VAC
Pulser	**COMPATIBILITY Contact**/12VDC electronic, 40 Ma max per pulser **RATE RATIO** 1:1 to 1000:1 in 1-pulse increments **SPEED** 6,000 pulses per second (mechanical type), 100,000 pulses per second (electronic type) DUTY CYCLE 50%

Fuel Site Controller (FSC)

The FSC processes data supplied over Petro-Net from the PCTs and FITs/ OPTs. The FSC also contains all card information and system configuration data.

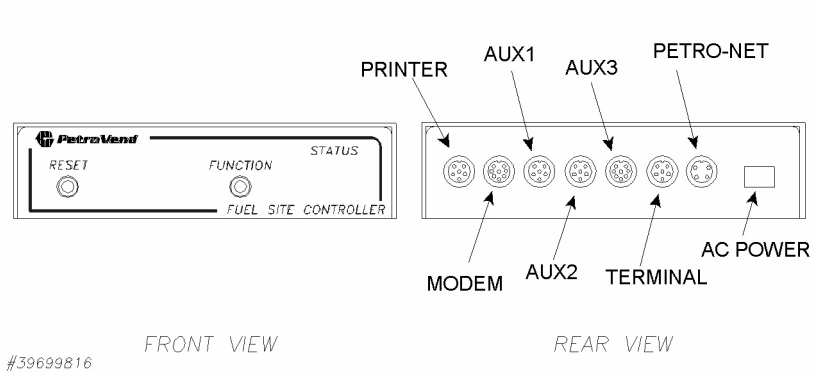


Figure 3: System2 Fuel Site Controller (FSC)

The FSC manages the operations of the FIT(s) or OPTs, the terminal or computer, the journal printer, and an optional modem.

The FSC must be installed indoors, and connected to one of the FITs or OPTs using twisted pair wiring and rigid steel conduit.

Install the FSC as described in the System2 Installation Manual. That manual also contains an illustration of the FSC board and descriptions of its status LEDs and switches.

To communicate with the system, the FSC must be connected to one of the following:

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

If not using an ASCII terminal, the PC or mainframe computer must be running an emulation program to simulate the operations of an ASCII terminal. For terminal baud rate, see *Table 3* on *page 9*, or the *System2 Installation Manual.*

Attach the journal printer to the PTR or, sometimes, AUX1 port to print reports and transactions.

For remote operation, the FSC connects to an optional modem to provide complete control from a remote terminal or computer over standard tele-

phone lines. Refer to Appendix C for details on modem operation. *Table 3* 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 40 devices (32 OPTs, 4 FITs and 4 PCTs) can be connected.

FSC Specifications

Table 3: 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	PN (Petro-Net): RS-485 CAP (Terminal): Proprietary protocol MODEM (Modem): RS-232 AUX 1-3 (Auxiliary Inputs): RS-232
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)

FSC DIP Switch Location

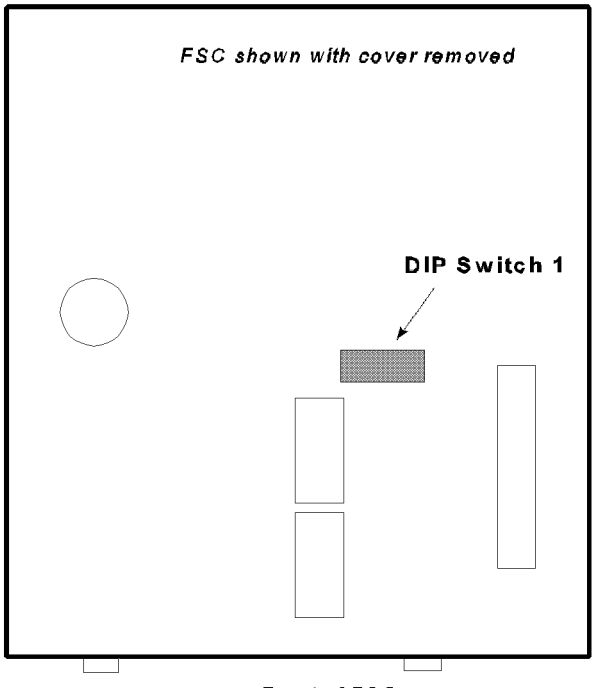


Figure 4: Location of Setup DIP Switch in FSC

Operational Overview

Start-Up

Upon initial power-up, the first menu to appear is the *non*-privileged Main menu. 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.

Beginner's Tutorial on page 21 is a practice session, giving you a chance to use most of the system features in a simulated site setup.

All commands can be reached via the menus; "regular" commands can be entered at the ">" prompt, if desired - 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 6* on *page 37*).

All system functions are accessed from the Main menu:

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

Each is briefly described below.

System Access

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.

Privileged - To configure System2, the system must be in the privileged mode. To prevent unauthorized tampering with the system, a password is required.

Privileged Mode

Select **SYSTEM ACCESS** from the MAIN MENU. From SYSTEM ACCESS menu, select **HELLO** and enter the main password (factory default "HELLO"). To exit privileged mode, enter .

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

Enter a **DOWNLOAD** command after all **CONFIGURE** and **FORMAT** commands. *You must enter the download command before the system will recognize any changes!* If several commands are entered, you do not have to do a download until after all commands are entered.

To access the system using a PC and/or a modem, refer to Appendix D.

System Times

See *Setting Time and Date* on page 41.

Use the 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 45.

This menu lets you program the following:

- The FITs
- The OPTs
- The PCTs
- The optional UPC (Universal Pump Controller)-equipped PCT.

The **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 FIT pedestal or in a separate cabinet. Each PCT board controls the following parameters for up to eight pumps:

- Pump Number
- Pump Status
- Product Name
- Tank Number
- Quantity Restriction
- Total Time for Fueling
- Maximum Time for Pump Handle
- Maximum Time for First Pulse
- Maximum Time for MPD
- Pulser Divide Rate
- Pump Handle monitor
- Pump Sentry feature

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 53 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 *Setting System Parameters* on page 95 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
- Test the back-up battery

Restrictions

See *Setting Restrictions* on page 103 to limit fuel dispensing with:

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

Cards & Accounts

See *Cards/Accounts Menu* on page 109.

System2 is activated via magnetic cards, optical cards, or programmable ChipKeys, depending on the reader supplied with your system. The System2 can use single or dual card (or key) operation.

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)

Transaction Data

See *Working with Transaction Data* on page 121 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

See *System Totals* on page 127.

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 *Journal Printer* on page 131.

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.

Menu Outline

A. System Access

a. Open

b. Close

c. Call

d. Hello

e. Bye

f. Passthru

B. System Times *(show/print/set)*

a. Time

b. Time Change

c. Date

d. System ON Time

e. Light ON Time

C. System Devices (show/print/install/remove/configure a-f below)

a. FIT

b. PCT

c. OPT

d. PCT & Position

e. Pump

f. Program

g. Set Pump ON

h. FIT Download

i. PCT Download

j. OPT Download

D. Customer Messages *(show/print/format)*

a. Receipt Body

b. Receipt Header

c. Receipt Trailer

d. Receipt Bonus Points

e. Display Number

f. Keyboard Number

g. Messages

h. Date

E. System Parameters *(show/print/set)*

a. System (show only)

- Current Time/Date
- Installed FITs and PCTs
- Low Tanks
- Power failure times

b. Site ID

c. Fuel Type Assignments

d. Fueling Units

e. Password

f. Language (dual ON/OFF)

g. Menu (ON or OFF)

h. Echo (ON or OFF)

i. Bonus Points

j. RAM (memory level 0-4)

k. Version (software version)

F. Restrictions *(show/print/set)*

a. Odometer Reasonability (code 0-15)

b. Pump Restriction (code 0-15)

c. Quantity Restriction (code 0-15)

d. Security (row 1/2)

G. Cards/Accounts *(show/print/insert/delete/edit/set/copy/sort)*

a. Card Number (show or print)

b. Card Summary (show or print)

c. Card Account Number (show or print)

d. Account Number (show or print)

e. Card Insert/Delete/Edit

f. Account Insert/Delete/Edit

g. Card Set

1. Specify Card/Account Buffer Size
2. Define Card/Account Record
3. Clear Card Record Totals
4. Reconcile Card Record Totals
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

h. Copy Card

i. Sort

H. Transaction Data *(show/print/set/clear)*

a. Transaction by date/time/card/ account/vehicle (show or print)

b. Summary of "a" above (show/ print)

c. Transaction by number (show/ print)

d. Transaction Set or Clear

e. Clear Transaction by date/sequence

f. Report

I. System Totals *(show/print/set/clear)*

a. Transaction by date/time/card/ account/vehicle (show or print)

b. Summary of "a" above (show/ print)

c. Midnight (show or print, eight days)

d. Day (show or print, current day)

e. Shift (show/print, change shift)

f. Pump Totals (show, print, or clear)

g. PCT Totals (show, print, or clear)

h. Fuel Type Totals (show or print)

i. Tank Totals (show, print, or set)

J. Journal Printer

a. Set, Show, Print Printer Configuration

b. Lock or Unlock Printer

Visanet Host (NOT a menu)

a. Merchant information

b. Host configuration

c. Valid host cards

d. Perform a credit

Beginner's Tutorial

This section leads you step-by-step through a typical site configuration. This session assumes your system is completely installed, and that the hardware has passed all self-diagnostics.

The references made in each step are to other sections of this manual where you can find complete details on the function used.

WARNING

This is ONLY an exercise! When you are finished with this session, be sure to clear all the sample configuration data from the system before putting YOUR data into the system.

Before Starting

This exercise explains the following:

- Set the current time and date
- Set the memory (RAM) level of your system
- Define a fuel type
- Define a tank
- Create a FIT customer message and receipt
- Configure the system for a printer
- Define a simple card base
- Configure and install a PCT/Position
- Configure and install a FIT
- Create an individual card record
- Create an account
- Generate transactions
- Define and run a report.

Issuing Commands

Issue commands in one of two ways:

- Via menus (takes longer, but the related functions of the system are easier to understand)
- Via direct typed commands.

This manual is organized around the menus, but this does not mean you MUST use the menus.

This practice session uses both methods; choose your preferred method, but it is suggested you at least *try* both methods.

Note

Visanet host commands (

Connections and Power-Up

Note

To issue any commands to the system, you must first have an RS232 terminal connected to the FSC TERM port. Set the terminal to the baud rate the FSC is set for (factory default is 1200), full-duplex communication, with 7 data bits, 1 stop bit, even parity.

1. Apply power to all system components. After self-tests, the following prompt (the "non-privileged" prompt) should be on the terminal:

   >

2. Press the (ENTER) key several times to confirm the system is receiving commands. The prompt repeats down the screen.
3. Type `HELLO` and press [ENTER].
4. Type the password and press [ENTER]. The factory password is HELLO. The prompt changes to the following:

   P>

The system is now in Privileged mode, allowing you to set or configure it.

Should You Use Menus?

This manual is organized around the menus that are built into the system software. All menus "branch out" from a Main menu; the Main menu is displayed after you power up the FSC and terminal, and press the [ENTER] key several times.

Turn the menus ON or OFF by typing **SET MENU** at the P> prompt. Then hit [ENTER]. Answer Y or N at the ENABLE MENUS? prompt.

You can use the menus to guide you through the setup procedure, or you can enter commands directly at the P> prompt. Both methods are provided in this practice session.

Setting Date and Time

Menu Method

1. From the Main menu, press [B] [ENTER].
2. From the System Times menu, press [C] [ENTER] [A] [ENTER]
3. At the SET TIME prompt, enter the time of day. For example, at 3:15 PM, type **3:15 PM** [ENTER] [ENTER].
4. You should be back in the System Times menu. Next, set the date. Type [C] [C] [ENTER]
5. At the SET DATE prompt enter the current date. For example, to set a date of March 21, 1999, type **MAR 21 1999** [ENTER] [ENTER].
6. Press [ENTER] once more to return to the Main menu.

Command Line Method

1. At the P> prompt, type **SET TIME** [ENTER].
2. At the **SET TIME** prompt, enter the time of day. For example, at 3:15 PM, type 3:15 PM [ENTER].
3. Set the date. Type **SET DATE** [ENTER]
4. Enter a date. For example, to set a date of March 21st, 1999, type **MAR 21 1999** [ENTER]. Your entry is echoed, and the P> prompt reappears.

Setting Memory Level

This procedure tells the system software how much RAM memory is in your system. The amount is determined by a code number.

Menu Method

1. From the Main menu, press [E] [ENTER].
2. From the System Parameters menu, press [C] [ENTER] [J] [ENTER].
3. At ENTER OPTION, enter a RAM level. For example, to define Level 2 type 1 [ENTER] [ENTER].

You should be back in the System Parameters menu. Press [ENTER] once again to return to the Main menu.

Command Line Method

1. At the `P>` prompt, type **`SET RAM`** [ENTER].
2. At the `ENTER OPTION` prompt, enter a RAM level. For example, to define Level 2 type **`1`** [ENTER] [ENTER].

This returns you to the P> prompt.

Set Fuel Types

See *Fuel Type* on page 96

This section defines fueltype code #1 as being unleaded premium gasoline, selling for $1.39 a gallon.

Menu Method

1. From the Main menu, press [E] [ENTER].
2. From the System Parameters menu press [C] [ENTER] [C] [ENTER].
3. At the `ENTER FUELTYPE:` prompt type **`1`** [ENTER]. The current name and price of fueltype #1 appears, along with a list of Fueling Unit Codes (1-3).
4. At the `ENTER FUELING UNIT CODE (1-3):` prompt type **`1`** [ENTER].
5. At the `CHANGE PRICE? (Y/N):` prompt type **`Y`** [ENTER] **`1.39`** [ENTER].
6. At the `CHANGE PRODUCT NAME (Y/N)?` prompt type **`PREMUNLEAD`** [ENTER].
7. Press Enter to return to the Main menu.

Command Line Method

1. At the `P>` prompt type **`SET FUELTYPE 1`** [ENTER].
2. Follow Steps 4-6 in the "Menu Method".
3. Press [ENTER] to return to the `P>` prompt.

Define a Site Tank

See *TANK Commands* on page 130.

This section shows how to define a sample Tank #1 as containing 9600 gallons of premium unleaded gasoline. The sample tank will alert the system when its level drops to 1200 gallons.

The "fuel type" was defined in Section 4.2.5.

Menu Method

1. From the Main menu press [I] [ENTER].
2. From the System Totals menu press [J] [ENTER].
3. At the `ENTER TANK:` prompt type [1] [ENTER].
4. At the `FUEL TYPE CODE (1-16):` prompt type [1] [ENTER].
5. At the `ENTER QUANTITY:` prompt type **`9600`** [ENTER]
6. At the `LOW LEVEL QUANTITY:` prompt type **`1200`** [ENTER]. You will now see a summary of Tank 1.
7. Press [ENTER] [ENTER] to return to the Main menu.

Command Line Method

1. At the `P>` prompt type **`SET TANK 1`** [ENTER].
2. Follow steps 4-6 in the "Menu Method" above.
3. Press [ENTER] to return to the `P>` prompt.

Programming a FIT Message

This section gives you practice with programming a 2 x 16 FIT display to give details on the "ABC OIL COMPANY", and creating a custom receipt header and trailer with details about the "ABC Oil Company", and its "special offer".

Menu Method

1. From the Main menu press [D] [ENTER].
2. Create an LCD Display. From the Customer Messages menu press [C] [ENTER] [E] [ENTER].
3. At the `ENTER DISPLAY:` prompt type 8 [ENTER].

The current Message #8 appears (factory default is PETRO VEND System2) along with an entry field for your new message.

The figure below shows the display; the cursor is shown by an "X".

```
MESSAGE 1 DISPLAY 58:
PETRO VEND      System2
:Lang. 1:        :
```

The space between each set of colons represents a line break on the display. Type **ABC OIL**. Press the space bar until the cursor is within the second set of brackets, then type **COMPANY**.

4. Press [ENTER] [ENTER] to complete the entry and return to Customer Messages menu.
5. **Create The Receipt Header**. From the Customer Messages menu, press [C] [ENTER] [B] [ENTER]. A prompt similar to the one for the display (Step 3) appears.
6. Type **ABC OIL CO.** [ENTER]. When prompted RED PRINT?, just press [ENTER] again. Then:
   - Type **1234 SMITH ST.** [ENTER] [ENTER].
   - Type ANY TOWN USA [ENTER] [ENTER].
   - Type **555-1234** [ENTER] [ENTER] [ENTER].
7. **Create A Receipt Trailer.** From the Customer Messages menu, press [C] [ENTER] [C] [ENTER]. A prompt similar to the one for the header appears.
8. Type **SPECIAL!** [ENTER]. When prompted for **"RED PRINT?"**, just press [ENTER] again. Then:
   - Type 1**0W30 OIL** [ENTER] [ENTER]
   - Type**.89 PER QT** [ENTER] [ENTER]
   - Type **STOCK UP NOW** [ENTER] [ENTER] [ENTER]
9. Download. From the Main menu press [C] [ENTER]
10. From the System Devices menu press [G] [ENTER]

This completes the display, header and trailer creation via the menus.

Command Line Method

1. At the P> prompt type **FORMAT DISPLAY 8** [ENTER]. The display shown above in "Menu Method" appears.
2. Follow Step 4 in the "Menu Method" above.
3. Press [ENTER] twice to complete your entry and return to the P> prompt.
4. **Create A Receipt Header:** At the P> prompt type **FORMAT REC HE** [ENTER].

5. Follow Step 7 in the Menu Method to create your header. Then, press [ENTER] until you see the `P>` prompt again.
6. **Create A Receipt Trailer:** Type **`FORMAT REC TRAILER`** at the `P>` prompt.
7. Follow Step 9 in the Menu Method. Press [ENTER] when done to complete your footer and return you to the `P>` prompt.
8. Download your changes. Type **`DOWNLOAD`** and press [ENTER].

This completes the display and receipt practice.

Saving Hard Copies of Transaction Data

You can specify what data is printed on the printer. Do the following.

Menu Method

1. From the Main menu press [J] [ENTER].
2. From the Journal Printer menu press [C] [ENTER].
3. Answer all the prompts by pressing **`Y`** followed by [ENTER].
4. After the last prompt, press [ENTER] once again to return to the Journal Printer menu.

Command Line Method

1. At the `P>` prompt type **`SET JOU`** [ENTER].
2. Answer all the prompts with **`Y`** [ENTER].

Cards, Cards and More Cards

You can tell the system how many card records it can handle, and what data each card can process.

Menu Method

1. From the Main menu press [G] [ENTER].
2. From the Cards/Accounts menu press [F] [ENTER].
3. From the Set Card menu press [1] [ENTER].

- Answer **`Y`** at `...CLEARED?`

Answer **`N`** at `ENABLE MESSAGING?` Enter 1 for `TRANSACTION SIZE CODE`

You will now see how many messages the system will hold, for cards that have NO options set and cards that have ALL options set.

4. Answer Y [ENTER] to the `SAVE THIS CONFIGURATION?` prompt. You are returned to the Set Card menu.
5. From the Set Card menu, press [2] [ENTER]. This step defines which options are enabled for each card you have in your system.
6. The first prompt is `SPECIFY CARD/ACCOUNT RECORD?` Press **Y** [ENTER]. Press **Y** [ENTER] again at the confirmation request.

Now begins the actual card definition. For this exercise you will create a card with all possible options enabled EXCEPT for the Expiration Date, Daily Allocation, and Odometer Reasonability options.

7. For each prompt, press **Y** [ENTER] except you should be excepting the three exceptions above, which you should answer with **N**.

At the end of this process you will see how many cards this particular configuration will let you use.

8. Press [ENTER] once again to return to the Cards/Accounts menu.

Command Line Method

At the `P>` prompt type **SET CARD** [ENTER].

Follow the Menu Method, beginning with Step 3 and ending with Step 8.

Press [ENTER] to return to the `P>` prompt.

Define a PCT and PCT Position

This part of the exercise tells you how to define a pump for the system: its number, pulses per unit of fuel, how much fuel it should dispense, and various time-out limits.

Menu Method

1. From the Main menu press [C] [ENTER].
2. From the System Devices menu press [E] [ENTER] [B] [ENTER]

For each of the following entries, remember you must press the [ENTER] *key after each entry.*

3. Give the PCT a number. Type **1** at the `ENTER PCT:` prompt.
4. Answer **N** to the `IS THIS A UPC` prompt.
5. Press [E] [ENTER] [C] [ENTER]
6. Define a position for the pump. Type **1** at the `ENTER POSITION:` prompt.
7. Give the pump a number. Type **1** at the `ENTER PUMP` prompt.
8. Provide the system with pump pulser information. Type **10** at the `ENTERPULSES PER GALLON:` prompt.

9. Specify how much fuel the pump is allowed to dispense per transaction. This entry is a safety feature: if the nozzle falls out of the filler neck while dispensing fuel, it will not continue to spew fuel indefinitely. Type **50** at the `MAX FUEL TO BE DISPENSED PER TRANSACTION` prompt.
10. Enable the "Pump Sentry". This feature automatically disables a pump if it registers zero product in three consecutive transactions. Type **Y** at the `PUMP SENTRY OPTIONS` prompt, and again at the `ENABLE PUMP SENTRY` prompt.
11. Another safety feature is the Maximum Fueling Time limit. Type **15** at the `MAX TIME ALLOWED FOR FUELING (MIN)` prompt.
12. Type **90** at the `MAX TIME ALLOWED TO RETRIEVE PUMP HANDLE (SEC)` prompt. Also, enter **60** at the `MAX TIME ALLOWED TO DETECT FIRST FUELING PULSE` prompt. These settings prevent a pump from being turned ON and then "forgotten".
13. Specify the maximum time between starting and stopping the fuel flow: type **30** at the `MAX TIME ALLOWED BETWEEN FUELING PULSES (SEC)` prompt.
14. Specify a fuel type; for this example, type **1** (premium unleaded) at the `ENTER FUELTYPE CODE` prompt. Type **1** at the `ENTER TANK` prompt. Clear the pump totals by typing Y at the `CLEAR PUMP TOTALS` prompt. Finally, enter a new totalizer value of 14,500.
15. Press [ENTER] once again. You should now be back in the System Devices menu. Confirm your PCT/position/pump setup by typing **A** [ENTER] **C** [ENTER], and then enter **1,** to display the following screen:

```
PCT 1  POSITION 1  PUMP 1
PULSES PER GALLON: 1
ABSOLUTE MAX QUANTITY: 50 GALLON
PUMP INACTIVE
PUMP SENTRY: ENABLED
  *** PUMP TIME-OUTS ***
TOTAL FUELING TIME-OUT (MIN): 15
PUMP HANDLE TIME-OUT (SEC)  : 90
FIRST PULSE TIME-OUT (SEC)  : 60
MISSING PULSE TIME-OUT (SEC): 30
FUELTYPE CODE TANK# TOTALS  TOTALIZER
1: UNLEAD     1     0.0     14500.0
```

16. Install the PCT position. From the System Devices menu, type [C] [ENTER] [C] [ENTER]. Then, enter **1** for the PCT and **1** for the POSITION (press [ENTER] after each). When you see `PCT 1 POSITION 1 OKAY`, press [ENTER] to return to the System Devices menu.

Download your changes (use the same procedure described earlier).

Command Line Method

1. At the `P>` prompt type **`CONFIG PCT 1 POS 1`** [ENTER].
2. Follow the Menu Method beginning with Step 5 and ending with Step 12. Press [ENTER] until you see the `P>` prompt again.
3. Install the position by typing **`INST PCT 1 POS 1`** [ENTER] at the `P>` prompt.
4. Download your changes. The procedure is described earlier.

The PCT position has been installed when you see **OKAY**.

Your sample Fuel Island Terminal will do the following: Issue receipts within a month of the transaction, clear the receipt counter, and shut off PCT position 1 when the E-stop button is pressed. The access to pumps will not change.

Menu Method

1. From the Main menu press [C] [ENTER].
2. From the System Devices menu press [E] [ENTER] [A] [ENTER]

For each of the following entries, remember you must press the [ENTER] *key after each entry.*

3. Install the PCT position. From the System Devices menu, type [C] [ENTER] [C] [ENTER]. Then, enter **`1`** for the PCT and **`1`** for the POSITION (press [ENTER] after each). When you see `PCT 1 POSITION 1 OKAY`, press [ENTER] to return to the System Devices menu.
4. Download your changes (use the same procedure described earlier).

Command Line Method

1. At the `P>` prompt type **`CONFIG PCT 1 POS 1`** [ENTER].
2. Follow the Menu Method beginning with Step 5 and ending with Step 12. Press [ENTER] until you see the `P>` prompt again.
3. Install the position by typing **`INST PCT 1 POS 1`** [ENTER] at the `P>` prompt.
4. Download your changes. The procedure is described earlier.

The PCT position has been installed when you see `OKAY`.

Define a FIT

Your sample Fuel Island Terminal will do the following: Issue receipts within a month of the transaction, clear the receipt counter, and shut off PCT position 1 when the E-stop button is pressed. The access to pumps will not change.

Menu Method

1. From the Main menu press [C] [ENTER].
2. From the System Devices menu press [E] [ENTER] [A] [ENTER]

For each of the following entries, remember you must press the [ENTER] *key after each entry.*

3. Define FIT #1 by typing **1** [ENTER] at the `ENTER FIT:` prompt.
4. Since you want the FIT to issue receipts, answer **Y** [ENTER] to the `ISSUE RECEIPTS?` prompt. Then, enter **30** (one month) for the `LIMIT TO RECEIVE RECEIPT.` prompt. Answer **NO** to the `CLEAR RECEIPT COUNTER?` prompt.
5. Answer **N** [ENTER] to the `KEYBOARD OPTIONS?` prompt.
6. You want a customer to be able to shut off PCT 1 with the Emergency Stop button, so press **Y** [ENTER] to the `SPECIFY PCTs TO SHUT OFF...` prompt. Then, press **1** [ENTER] to specify PCT 1 will be the only PCT to shut off. Answer **NO** to `CHANGE FIT ACCESS TO PUMPS?`
7. After pressing [ENTER] following the PCT entry, a summary of the FIT should appear on your monitor (shown below).

```
FIT NOT INSTALLED
RECEIPT: 0   30 DAY LIMIT
KEYBOARD ACCESS: DISABLED
PCTS TO SHUT OFF ON E-STOP: 1
CARD READER ERROR COUNTER: 0
-- ACCESS TO ALL PUMPS
```

8. Press [ENTER] to return to the System Devices menu.
9. Install the FIT. From the System Devices menu press [C] [ENTER] [A] [ENTER].
10. Enter the FIT number. Press [ENTER] to use FIT #1. Now, do a download (described earlier).
11. You will see **OKAY**. Press [ENTER] [ENTER] to return to the Main Menu.

Command Line Method

1. At the P> prompt:

   Type **CONFIG FIT 1** [ENTER]. You will see `ISSUE RECEIPTS?`
2. Follow the Menu Method beginning with Step 4 and ending with Step 6.

3. Press [ENTER] until you see the `P>` prompt again.

4. Install the FIT. Type INSTALL FIT 1 [ENTER] at the P> prompt. You will see OKAY, and the P> prompt re-appears.
5. Do a download (described earlier).

Accounts & Card Files

This section lets you create a card file and an account, and then assign the card to the account.

Menu Method

1. From the Main menu press [G] [ENTER].
2. Create (Insert) a new card: From the Cards/Accounts menu press [C] [ENTER] [E] [ENTER]
3. Define your card settings by answering the following prompts:
   `AUTO-GENERATE PIN`. Type **N** [ENTER]
   `CARD #?` Type **1** [ENTER]
   `CARD TYPE (S)ingle (D)river (V)ehicle)` Type **S** [ENTER]
   `VALID?` Type Y [ENTER]
   `ACCOUNT # (0-9999)` Type **100** [ENTER]
   `MONTHLY ALLOCATION: $`Type **500** [ENTER]
   `ENABLE MISC ENTRY?` Type **Y** [ENTER]
   `PIN#:` Type **1234** [ENTER]
   `ENTER CURRENT ODOM?:` Type **Y** [ENTER]
   `PUMP RESTRICTION CODE:` Type **1** [ENTER]
   `QUANTITY RESTRICTION CODE:` Type **1** [ENTER]
   `DRIVER NAME:` Enter your first name here, press [ENTER].

OPTIONAL: Program another card if you want by pressing Y [ENTER] at the ANY MORE CARDS? prompt. Otherwise, go on to the next section to make an account.

4. Verify your card record: From the Cards/Accounts menu press A [ENTER] A [ENTER] 99 [ENTER]. You should see the following:

```
CARD#:  99
SINGLE CARD
ACCOUNT#:  0100
MONTHLY ALLOCATION: $500.00
--TOTALS TO DATE:  0.00
MISC ENTRY: ENABLED
PIN #: 1234
ODOMETER: ENABLED
PUMP RESTRICTION CODE: 1
QUANTITY RESTRICTION CODE: 1
DRIVER NAME: YOUR NAME
```

5. Press [ENTER] again until you see the Cards/Accounts menu.
6. Create your account. This account will be Account #100. Card 99 will be part of it. All purchases billed to Account 100 will have a 15% discount when billed through the Report Package. All cards within Account 100 will be able to draw a total of $5000.00 worth of products per month - no more.

- To create your account from the Cards/Accounts menu: Press **C** [ENTER] **F** [ENTER] **100** [ENTER].

7. To define your account, answer the following prompts as shown:

   `VALID?` Press **Y** [ENTER]
   `ACCOUNT DISCOUNT` Press **15** [ENTER]
   `MONTHLY ALLOCATION` Type **5000** [ENTER]
   `PUMP RESTRICTION CODE:` Type **0** [ENTER]
   `QUANTITY RESTRICTION CODE:` Type **1** [ENTER]
   `ACCOUNT NAME:` Type your name and press [ENTER]
   `ANY MORE ACCOUNTS?` Type **N** [ENTER].

   You will see `SORTING CARD/ACCOUNT... DONE.`

8. Press [ENTER] to return to the Cards/Accounts menu.
9. To view or edit the account from the Cards/Accounts menu press **E** [ENTER] **F** [ENTER] **100** [ENTER]. The summary of Account 100 appears:

```
ACCOUNT#:  0100
ACCOUNT RECORD
DISCOUNT (%): 15.0
MONTHLY ALLOCATION: $5000.00
--TOTALS TO DATE:  0.00
PUMP RESTRICTION CODE: 1
QUANTITY RESTRICTION CODE: 1
DRIVER NAME: YOUR NAME
```

10. Press [ENTER] after each line to say you do not want to change it (unless you see an error).

Command Line Method

1. At the P> prompt, type **INSERT CARD** [ENTER]. First you are asked AUTOMATICALLY GENERATE PIN NO? Type **N**. You will see ENTER CARD #. Type **99** [ENTER].
2. Follow Step 3 in the Menu Method, to define your card information.
3. Review your card setup, type **SHOW CARD 99** at the P> prompt. You will see POSITIVE CARD FILE... and a message telling you how many cards are used and how many cards this configuration will allow.
4. Create your account. Type **INSERT ACCOUNT** [ENTER] at the P> prompt. Type 100 [ENTER] at the **ACCOUNT #** prompt.
5. Follow the Menu Method Step 7.
6. Verify the account setup by typing **EDIT ACCOUNT** [ENTER]. Then, enter **100** [ENTER].
7. Press [ENTER] for each correct line.

You need to generate a download to make your changes effective. Although downloads have been done throughout this practice session, it cannot hurt to do one more at the end of everything.

- *You will not be able to see the FIT display changes until you issue a download.*

Menu Method

1. From the Main menu press [C] [ENTER].
2. From the System Devices menu press [G] [ENTER]

Command Line Method

1. At the P> prompt type **DOWNLOAD** [ENTER].
2. Obtain a system card to perform a transaction. Or just try any card you have in your wallet or purse. The drawback is the card's numbering system may not match the System format.

- *If you do NOT have a card, enable "keyboard access" to "punch in" a card number.*

Programming a Card Number into a Database

Magnetic Card

The sixteen-digit card number for mag cards consists of a four-digit network number and a 12-digit card number, as shown below.

Optical Card or ChipKey

The ten-digit card number for optical cards or ChipKeys consists of a four-digit network number and a six-digit card number, as shown below.

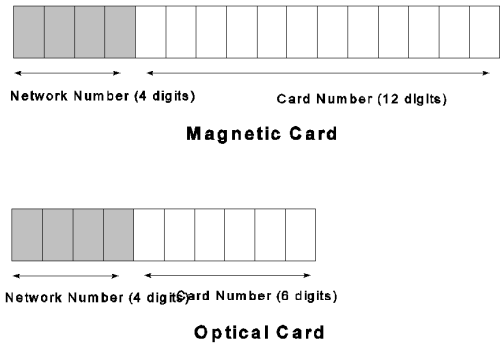


Figure 5: Magnetic vs. Optical Card Layouts

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 6: System2 Main Menu

System2 "powers up" in command line mode, meaning you must issue commands at the ">" prompt (such as > **SET TIME**). Menus are available, however, to simplify operations.

Note

Visanet commands cannot be entered in menus. You can only enter them as line commands.

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**).

See *Menu Outline* on page 17 for a "menu tree" with relevant commands. The three most used commands are **SHOW**, **PRINT** and **SET**:

- **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 and account 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.

Communicating with System2

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

Figure 7: System Access Menu

For SYSTEM ACCESS from the MAIN menu, press [A]

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.

Warning

Closing the system with the CLOSE command is not the same as pressing the Emergency Stop button! Emergency Stop removes power from the pumps and interrupts the pumping process.

HELLO and BYE

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

The **BYE** command exits the privileged mode.

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 99 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 Petro Vend SiteSentinel and a System2) "talk" to each other via only one terminal. The terminal can be connected to either of the devices.

- *BEFORE issuing a* **PASSTHRU** *command, connect the second device to the* AUX3 *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 intelligent device. Any characters coming from the other device would likewise pass through to the terminal or modem.

Press [CTRL] [Z] to break the passthru 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 8: 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 am/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

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 keypad 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.

Device Setup

From the MAIN menu, press [C]

```
SYSTEM DEVICE    ** PRIVILEGED **
---------------------------------

A: SHOW                 A: FIT #...
B: PRINT                B: OPT #...
C: INSTALL              C: PCT #...
D: REMOVE               D: PCT
                        #..POSITION#..
E: CONFIGURE            E: PUMP #...
                        F: PROGRAM
----------------------------------------
F: SET                  G: PUMP ON
----------------------------------------
G: DOWNLOAD
----------------------------------------
H: DOWNLOAD             H: FIT (#...)
                        I: OPT (#...)
                        J: PCT (#...)
----------------------------------------
^ENTER COMMAND:   ^ENTER OPTION:
```

Figure 9: 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 #, OPT#, PCT #, PCT #/Position #, Pump # and Program.** Not all commands work with all devices.

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.

- *Set the FIT number with a DIP switch on the PV-269 board - see your System2 Installation Manual.*

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

```
FIT INSTALLED
   NO RECEIPTS
   KEYBOARD ACCESS - DISABLED
   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 OPT (Y/N)?` If your fueling terminal is a Petro Vend Outdoor Payment Terminal answer Y. Otherwise press N.
- `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 RECEIVE RECEIPT IN DAYS (0.99)` - this is the number of days after a transaction that a customer can receive a receipt. Default is NO LIMIT (press [ENTER]).
  - `CLEAR RECEIPT COUNTER (Y/N)?` - The receipt counter keeps a running total of all receipts issued to date. It can be used to keep track of the receipt paper and to indicate when the paper is running low.
  - `PRINT PRICE INFORMATION FOR PROPRIETARY CARDS (Y/N)?` Lets you enable or disable the printing of price and total price on the receipt for proprietary cards. DOES NOT APPLY to bank cards.

- `KEYBOARD OPTIONS (Y/N)?` - Default is N. Enter [Y] to display:
- `ENABLE KEYBOARD ACCESS (Y/N)?` - Default is N. With this feature enabled, a customer can enter their card number on the FIT keyboard. For more details about "cardless" card records, see *Inserting Cards or Accounts* on page 111.

Note

The card reader is not disabled when you enable keyboard access.

- `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].

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.*

INSTALL FIT Command

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

Note

FIT #1 is automatically installed on power-up.

REMOVE FIT Command

This privileged command stops the FSC from communicating with the specified FIT.

OPT Commands

SHOW OPT Command

```
OPT INSTALLED
RECEIPTS: 0 NO LIMIT TO RECEIVE RECEIPT
KEYBOARD ACCESS - ENABLED
CARD READER ERROR COUNTER: 0
LIST OF VALID PUMPS - NONE
```

Entries vary depending on actual OPT settings.

CONFIGURE OPT Command

The following prompts appear one by one after you send a **CONFIGURE OPT #** command:

- `ISSUE RECEIPTS (Y/N)?` - Default is **N**. If **Y** - the OPT receipt printer issues a receipt. Y produces two additional prompts:
  - `ENTER LIMIT TO RECEIVE RECEIPT IN DAYS (0.99)` - Number of days after a transaction that a customer can receive a receipt. Default is no limit (press [ENTER]).
  - `CLEAR RECEIPT COUNTER (Y/N)?` - The receipt counter keeps a running total of all receipts issued to date. It can be used to keep track of the receipt paper and to indicate when the paper is running low.
- `KEYBOARD OPTIONS (Y/N)?` – Default is **N**. Enter [Y] to display:
  - `ENABLE KEYBOARD ACCESS (Y/N)?` - Default is N. With this feature enabled, a customer can enter their card number on the OPT keyboard.

Note

The card reader is not disabled by enabling keyboard access.

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 OPT ACCESS TO PUMPS (Y/N)?` - Default is **N**. Enter [Y] to change pumps activated by the specified OPT:
  - `ENTER VALID PUMPS (p1, p2,.).` **N** makes all pumps accessible.
- *Enter the* **DOWNLOAD** *command after OPT configuration.*

INSTALL OPT Command

This command activates the specified OPT, establishing a communication link between the installed OPT and the FSC.

Note

OPT #1 is automatically installed at power-up.

REMOVE OPT Command

The privileged **REMOVE OPT** command stops the FSC from communicating with the specified OPT.

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.

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. PCT positions can be viewed, printed, installed, removed or configured. Each PCT can control up to eight pumps, located at positions #1 - #8.

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 the *Cards/Accounts Menu* on page 109.

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.

Gallon to Liter Conversion

For system s with pulsers that record in GALLONS, but for which LITERS are required for data processing purposes, answer Y to the GALLON PULSER OPTIONS? prompt, then answer Y to the ARE THE GALLON PULSES TO BE CONVERTED TO LITERS? prompt.

Answering Y to the above causes the FSC to automatically perform a gallon-to-liter conversion.

Note

The Pulses Per Unit value for the pump must be in number of pulses per gallon.

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 16, that represents the type of fuel this position will dispense. See ? for 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 running pump totals; default is *no*.

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.

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 10: 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 or 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 receipts are a little different, and are shown in the OPT User's Guide. Both types are programmed in the same way, however.

Receipts

Receipt Components

See *Figure 11*. A receipt printed by a System2 FIT contains three parts:

- Header
- Body
- Trailer

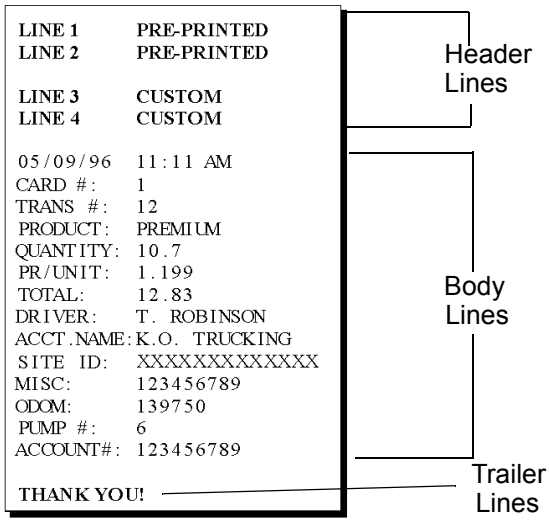


Figure 11: Typical Receipt Layout

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.

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 100) is enabled, receipts can be issued in either language.

Creating the Receipt Body

Show, print, or format the body.

1. At the `P>` prompt type **`FORMAT RECEIPT BODY`** [ENTER]
2. Fill in the first 10 characters of a line.
3. Enter a Receipt Code (*Table 4* on *page 56*) to print data from the transaction or card file on the same line.
   `ENTER (Show, Delete, Insert, eXit, Line #):`

Select a function by entering the capitalized letter; for example, to exit, press the [X] key and then the [ENTER] key. Each function is described below:

- **`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. The label and code items can be modified.

Table 4: Receipt Variable Codes

Code #	Variable Transaction Data
1	Number Of Card 1
2	Number Of 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	Current Odometer Reading
14	Miles Per Gallon (MPG)
15	Liters Per 100 Kilometers
16	Pump Number
17	Account Number

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 100) 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.

About FIT Messages

The FIT or 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 three displays:

- Standard 2x16 display shows two lines of text with up to 16 characters per line.
- Optional 1x40 display shows one line of text with up to 40 characters.
- 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 100) 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 5* for default FIT and 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.
- 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 then 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 *Table 5* are explained in the Troubleshooting Appendix.

Table 5: Default Display Messages

Code number	Default FIT or OPT Message
1	SYSTEM OUT OF SERVICE
2	READING CARD
3	REMOVE CARD
4	INCORRECT READING
5	CHECK CARD ORIENTATION
6	INSERT CARD FOR RECEIPT
7	INSERT CARD FOR RECEIPT
8	PETRO VEND System2
9	INSERT CARD
10	SYSTEM CLOSED
11	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#:

Table 5: Default Display Messages (Continued)

28	ENTER ODOM:
29	ENTER MISC:
30	ENTER VEH #:
31	RE-ENTER PIN:
32	RE-ENTER ODOM:
33	
34	Blank
35	NOT IN CARD FILE
36	CARD EXPIRED
37	CARD RECORD EXPIRED
38	CARD INVALIDATED
39	3 BAD PIN ENTRIES
40	ALLOCATION EXCEEDED
41	Blank
42	Blank
43	ACCOUNT EXPIRED
44	ACCOUNT INVALIDATED
45	ACCOUNT #S DO NOT MATCH
46	ACCOUNT RECORD NOT FOUND
47	Blank
48	JOURNAL ERR GET MANAGER
49	SYSTEM BUSY -BUFFER FULL
50	Blank
51	Blank
52	Blank

Standard 2 x 16 Display

After issuing the FORMAT DISPLAY command, enter the number of the display prompt (*Table 5* on *page 58*) 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 or OPT prompt you want to edit.

After entering a prompt number, the current prompt and two vertical lines appear. These lines represent the maximum length of the message; the new prompt must fit under the space between the lines. Upper and lower case letters can be used.

Display Programming Sequence

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

```
IS THIS AN OPT (Y/N)?
 ISSUE RECEIPTS (Y/N)?
--ENTER LIMIT RECEIVE RECEIPT IN DAYS (0.99) -
--CLEAR RECEIPT COUNTER (Y/N)?
SPECIFY PCTS TO SHUT OFF ON E STOP (Y/N) N
CHANGE FIT ACCESS TO PUMPS
ISLAND TERMINAL
RECEIPTS
KEYBOARD ACCESS
PCTS ST OSHUT OFF ON E STOP:
CARD READER ERROR COUNTER
--ACCESS TO ALL PUMPS
```

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 71*.

The graphics codes described in this section can also be added to the keyboard responses and to the individual messages generated by the messaging feature. See *Messaging* on page 90.

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 (*Table 5* on *page 58*).

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 64*.

Sample fonts and several examples of prompts with pictures and a list of control characters begin on *page 71*.

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 62*.

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 6* on *page 70*).

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 typestyles (shown on *page 69*) 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 typestyle, 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.

Display Cleaning Products

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!

The following products are safe for use on the System2 graphics display panel:

1. AR Kleener - Anti-Reflective. Shield Lens Care Products, Golden Valley, MN. (612) 542-8276. AR Kleener is available nationwide at Sunglass Hut stores.

2. Diamond Glaze Anti-Reflective Cleaner. Diamond Glaze, Inc. St. Paul, MN (800) 322-6644. (612) 227-5560

Call the manufacturers above for distributors in your area. Both are widely available in eyeglass stores or optometry clinics.

Sample Graphic Display Prompts

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

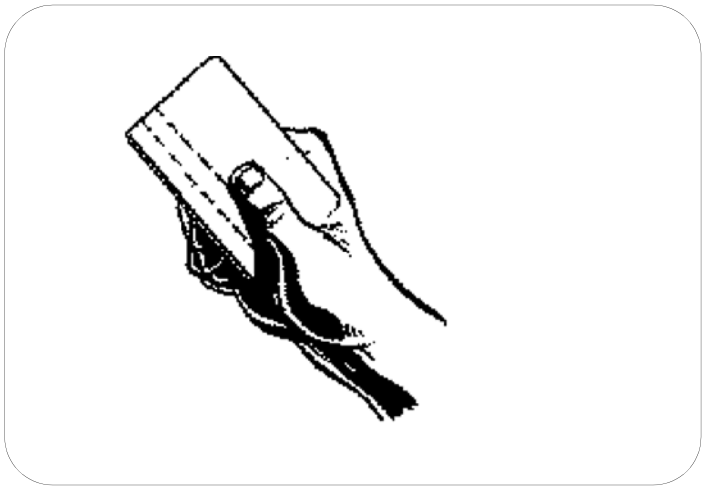


*Figure 12: FIT Graphic -- Insert Magcard With Stripe to Left (**^1**)*

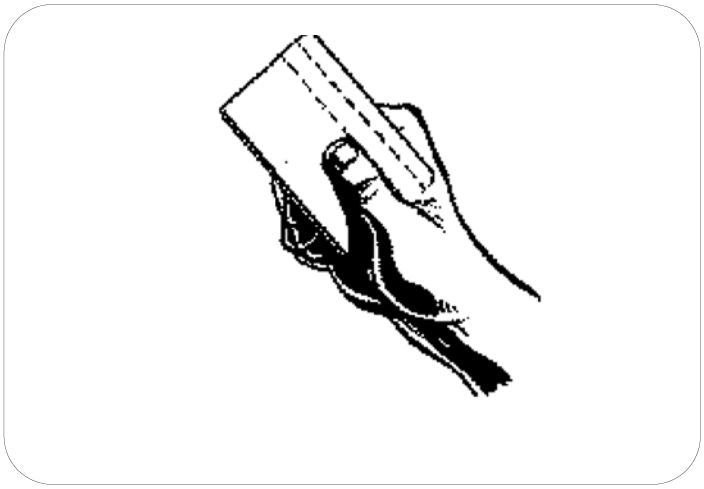


*Figure 13: FIT Graphic -- Insert Magcard with Stripe to Right" (**^2**)*

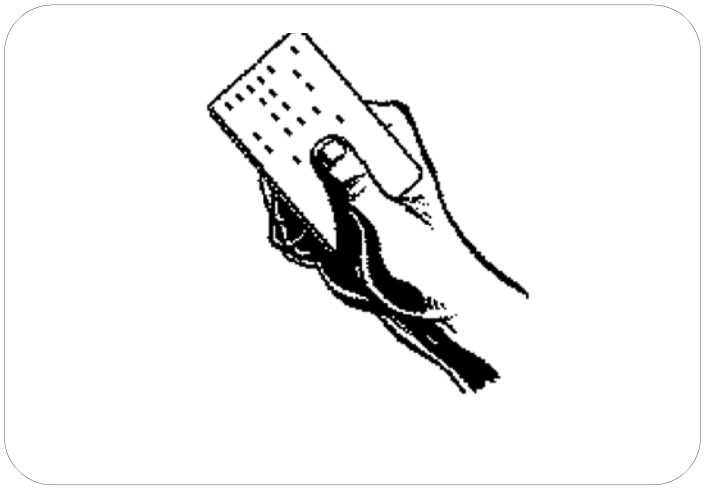


*Figure 14: FIT Graphic -- "Insert Optical Card" (**^3**)*

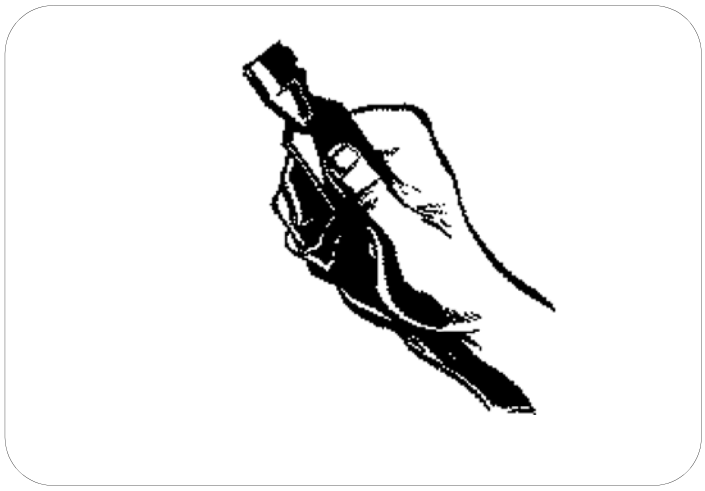


*Figure 15: FIT Graphic -- "Insert ChipKey" (**^4**)*

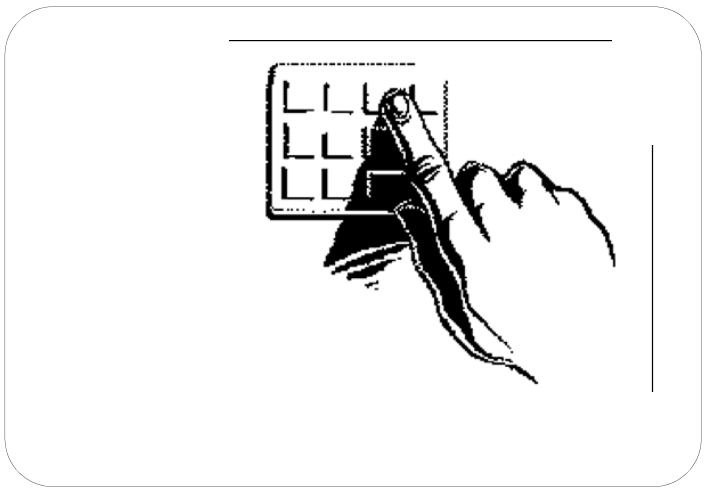


*Figure 16: FIT Graphic -- "Enter Card Number on Keypad" (**^5**)*

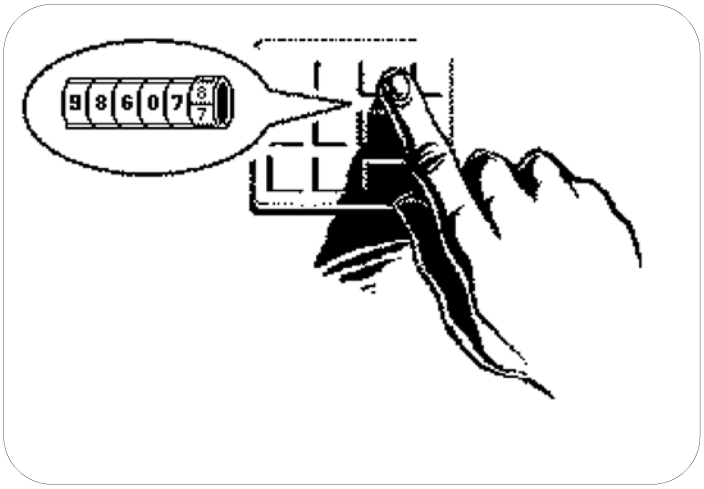


*Figure 17: FIT Graphic -- "Enter Odometer Reading" (**^6**)*

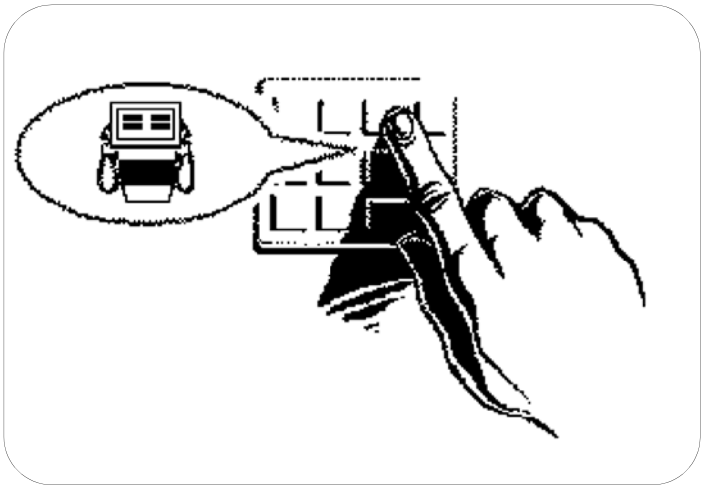


*Figure 18: FIT Graphic -- "Select a Pump" (**^7**)*

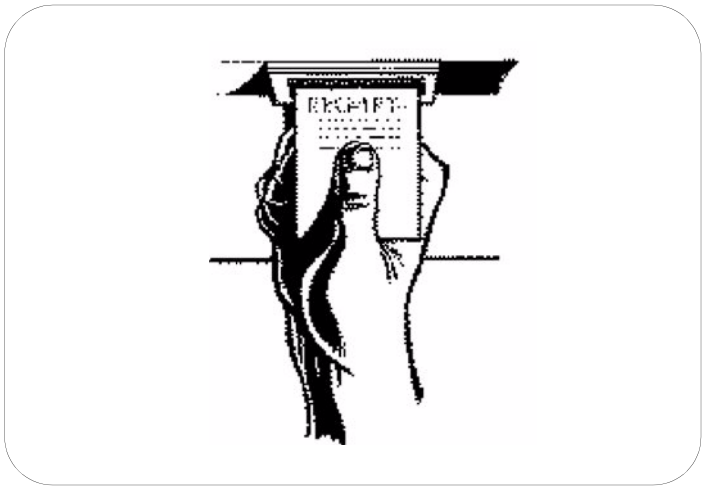


*Figure 19: FIT Graphic -- "Take Receipt" (**^8**)*

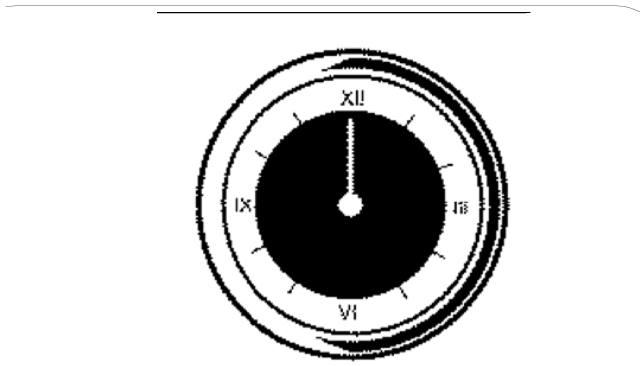


Figure 20: FIT Graphic -- "Please Wait" (^9)

Graphics Display Typestyles & 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 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.

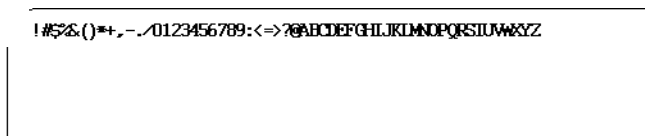


Figure 21: FIT Font Style CTRL V -- Small Sans-Serif

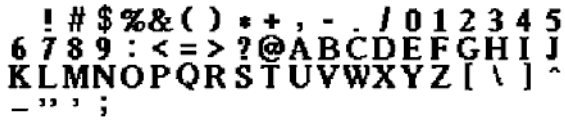


Figure 22: FIT Font Style CTRL Y -- Large Serif

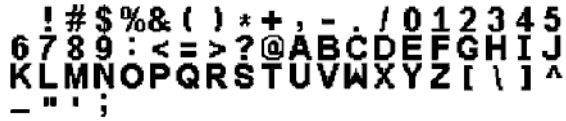


Figure 23: FIT Font CTRL Z -- Large Sans Serif

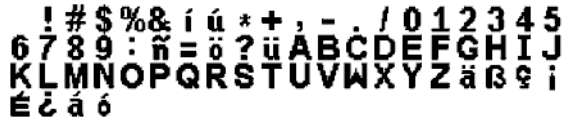


Figure 24: FIT Font CTRL X - Large International

Graphic Display Control Codes

Table 6: 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.

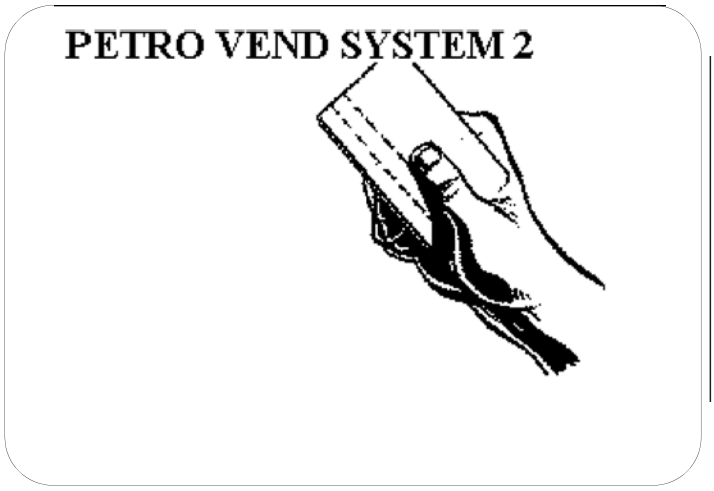


*Figure 25: FIT Graphic Sample -- "Petro Vend System2" (**^1^Y^A**)*

*Figure 26: FIT Graphic Sample -- "Insert ChipKey" (**^4^Y^A**)*

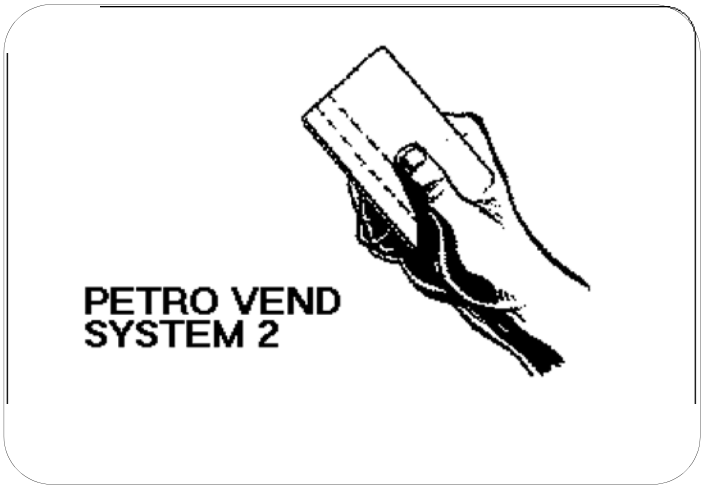


*Figure 27: FIT Graphic Sample -- "Petro Vend System2" (**^1^Z^I**)*

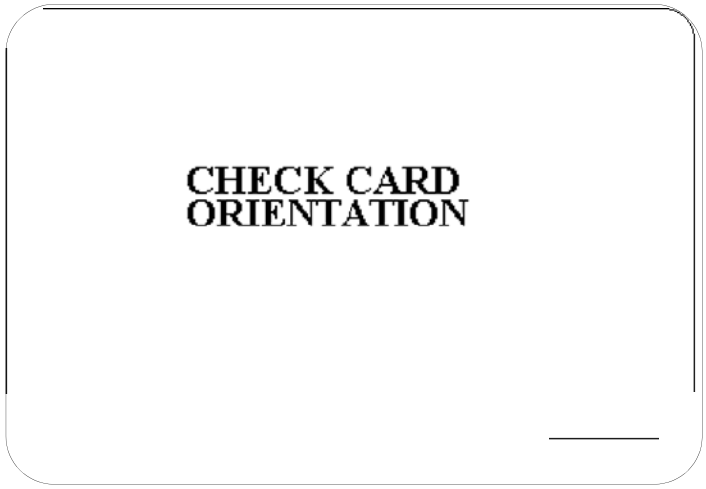


*Figure 28: FIT Graphic Sample -- "Check Card Orientation" (**^0^Y^E**)*

Keyboard 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.

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 113*) 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 five 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')

Also:

- **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. 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. 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.

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
```

- **sEparatorS**elect the two field separator characters
- **eXit**Returns you to the previous menu
- **month** #Changes the label(s) for the selected month (*Table 7*). The default date month labels are in *Table 7*.

Table 7: Default Month Labels

Enter This Month #	To Display
1	JAN
2	FEB
3	MAR
4	APR
5	MAY
6	JUN
7	JUL
8	AUG
9	SEP
10	OCT
11	NOV
12	DEC

Date separators divide parts of the date - months from days from years. Any printable ASCII character can be used. The default separator is a space and a comma between the day (or month) and the year (example, AUG 30, 2000).

Graphics 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 the number of the 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 prompt, re-enter the command.

If Dual Language is enabled, you are shown the display prompts for both languages (the second language prompt is initially blank).

Graphics 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 each message. You can tie the same picture to as many display prompts as desired.

Graphics 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.

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 Font Selection

Your text messages can be displayed in one of the type styles 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, Std set (^Y)
- •Sans-serif, 20 characters per line, Intl set (^X)
- •Serif, 40 characters per line (^V).

Serifs are the small "tails" on type. The first character below is a serif typestyle, 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 font style, the last style you specified is used. If you don't specify *any* styles for any prompts, Style 1 (Serif 20-char-per-line) 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 Display

- 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 the code `^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.

An image remains on the screen until one of the following occurs:

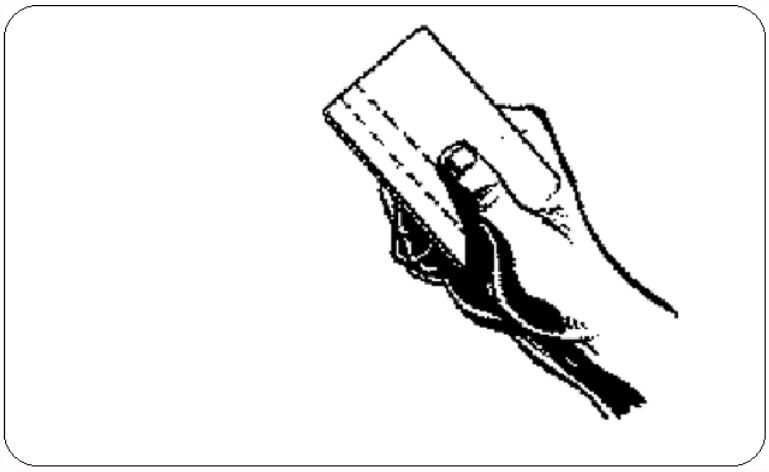
- Another FIT or OPT prompt with a picture is displayed
- A prompt with the "clear screen" control code is displayed.

Cleaning the Graphics Display

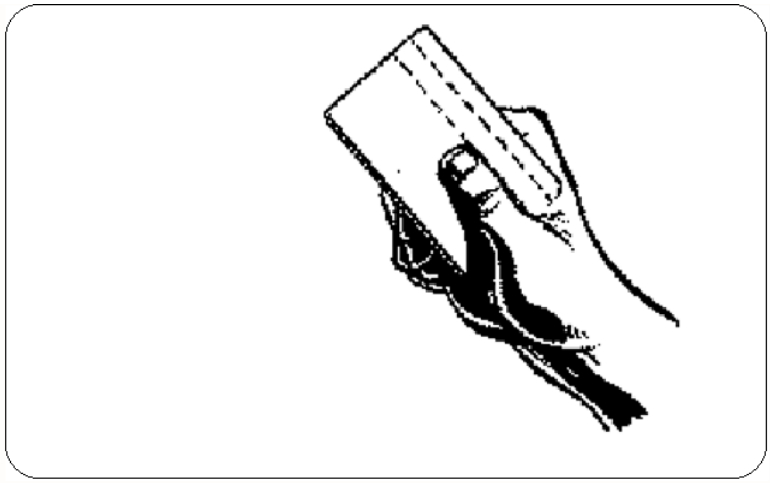
The Graphics Display has a thin anti-glare coating. DO NOT use harsh detergents or any petroleum-based solvents to clean the display! The following products are safe for use on the System2 graphics display panel:

1. **AR Kleener - Anti-Reflective** (available nationwide at Sunglass Hut stores)
2. **Shield Lens Care Products**. Golden Valley, MN. (612) 542-8276
3. **Diamond Glaze Anti-Reflective Cleaner**. Diamond Glaze, Inc. St. Paul, MN (800) 322-6644

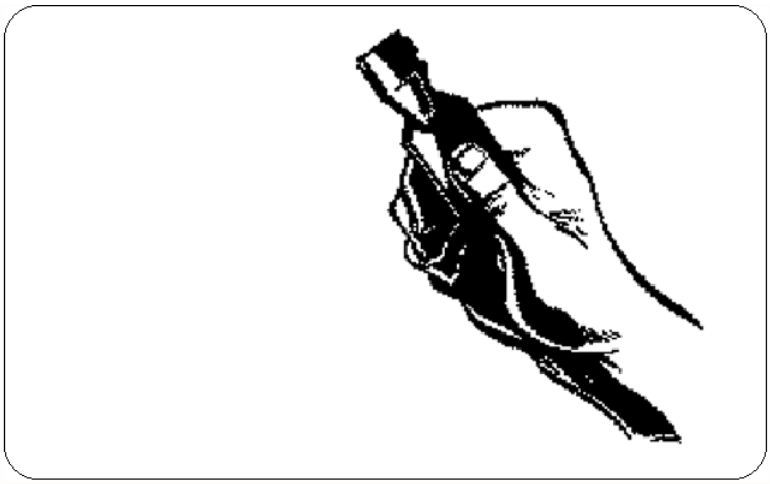
Graphics Display Picture Control Codes & Typical Prompts



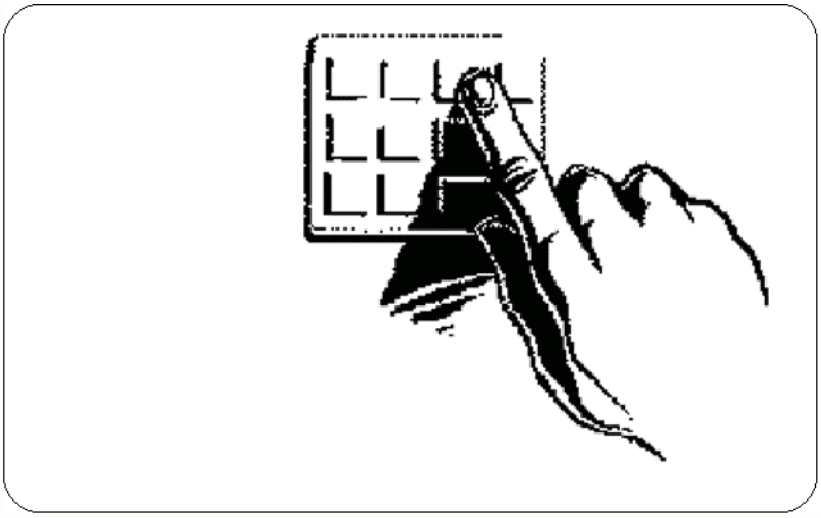
`^1' - Mag Card: Stripe Left (FIT prompts: #6, #7, #9, & #24)



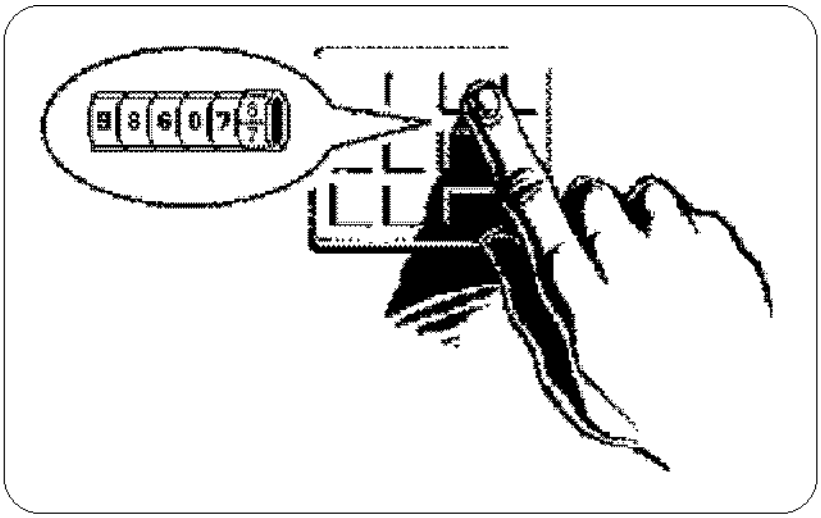
`2' - Mag Card: Stripe Right (FIT prompts: #6, #7, #9, & #24)



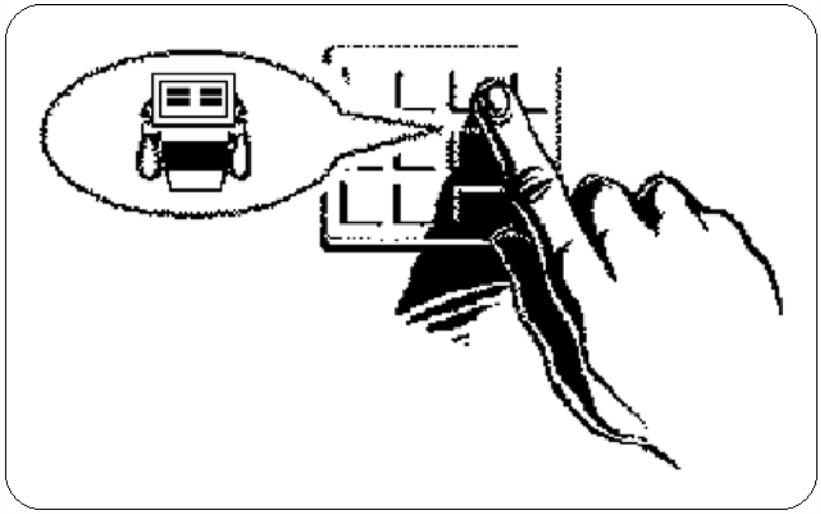
`^4' - ChipKey (FIT prompts: #6, #7, #9, #24)



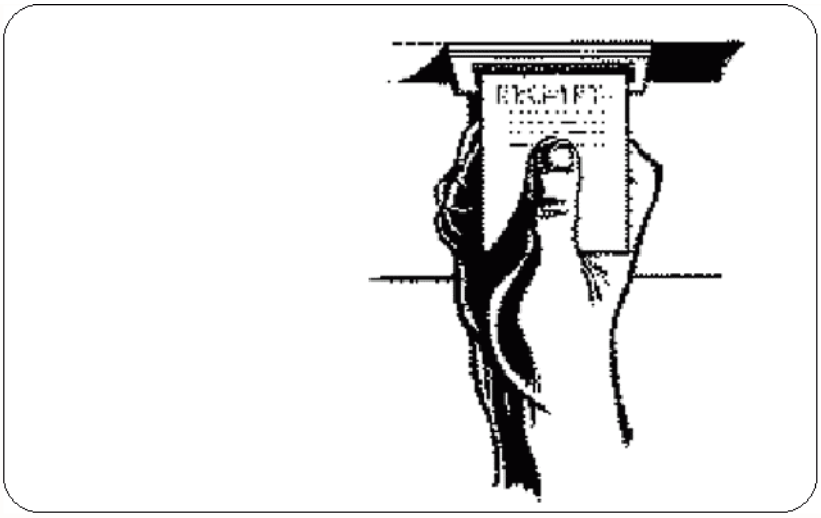
`^5' - Keypad Entry (FIT prompts: #26,#27,#29,#30,#31,& #52)



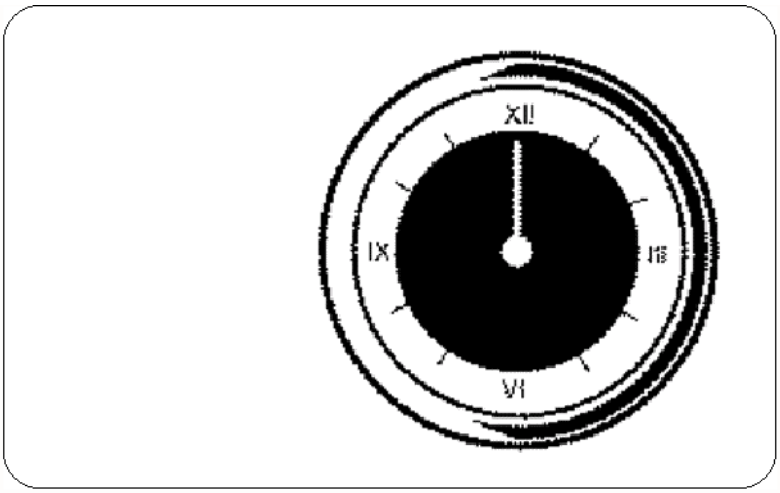
`^6' - Odometer Entry (FIT prompts: #28 & #32)



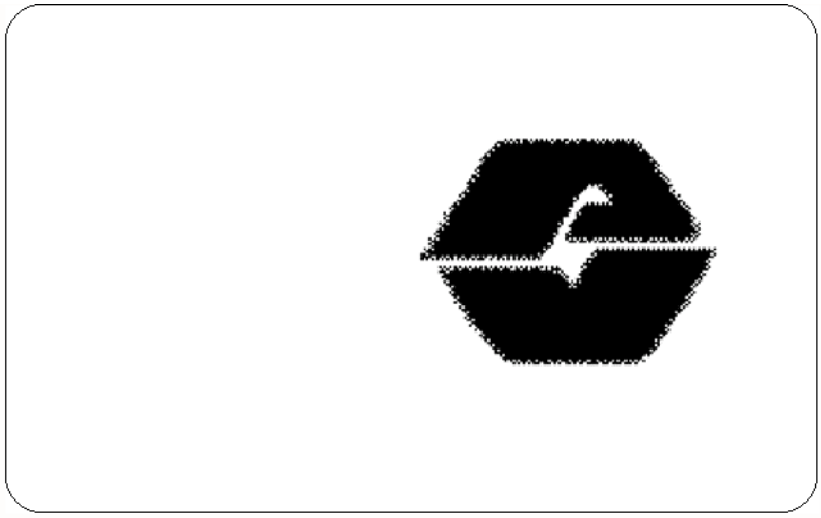
`^7' - Pump Selection (FIT prompts: #16, #20, #21, #22)



`^8' - Transaction Receipt *(FIT prompt: #13)*



`^9' - Wait (FIT prompt: #11)



`^:' - Petro Vend Logo (FIT prompt: #8)

Graphics Typestyles and Position Codes

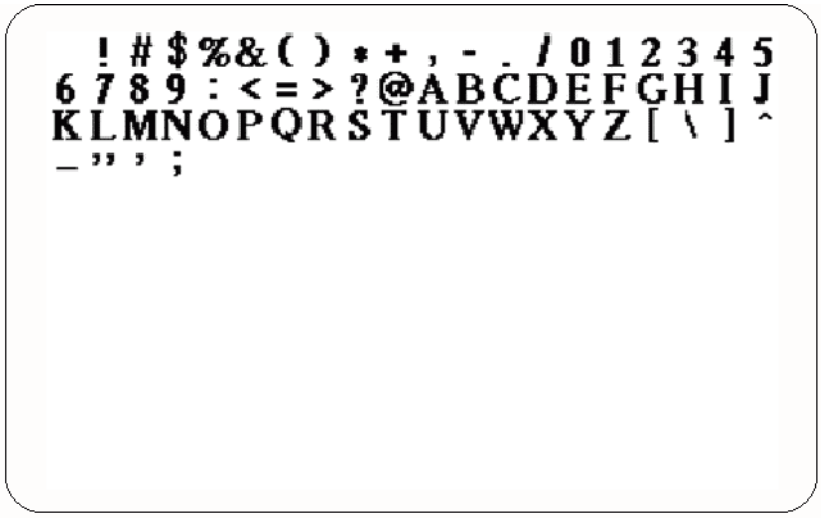
The following screens show the available typestyles, with their matching control code.

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 FIT 1.02A and over) specify where on the display the line of text appears; codes apply to all typestyles.

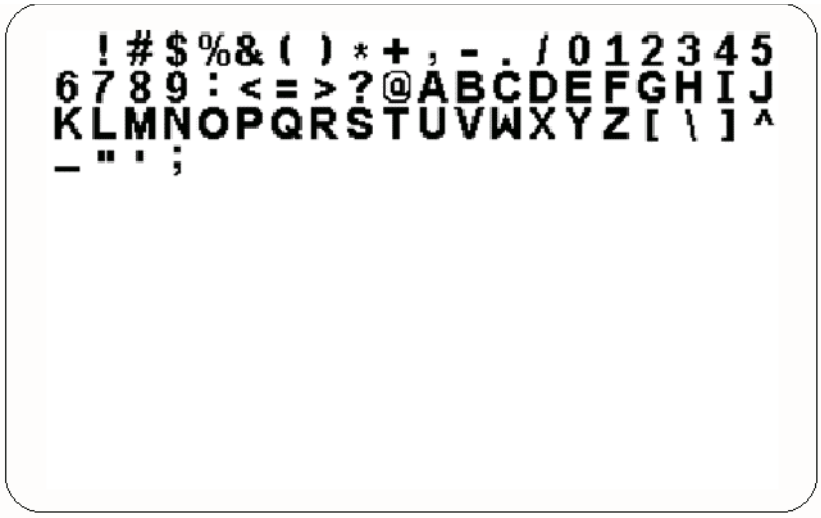
For example, to have the prompt INSERT CARD appear at the bottom of the display (perhaps under a picture), enter: **`^LINSERT CARD`**.

Sample Graphic Display Fonts

^V - Small Sans-Serif, 40 characters per line



^Y - Large Serif, 20 characters per line



^Z - Large Sans-Serif, 20 characters per line

Graphic Code Summary

The action of control codes in both FIT software 1.01 and 1.02A (or above) are listed below.

Table 8:

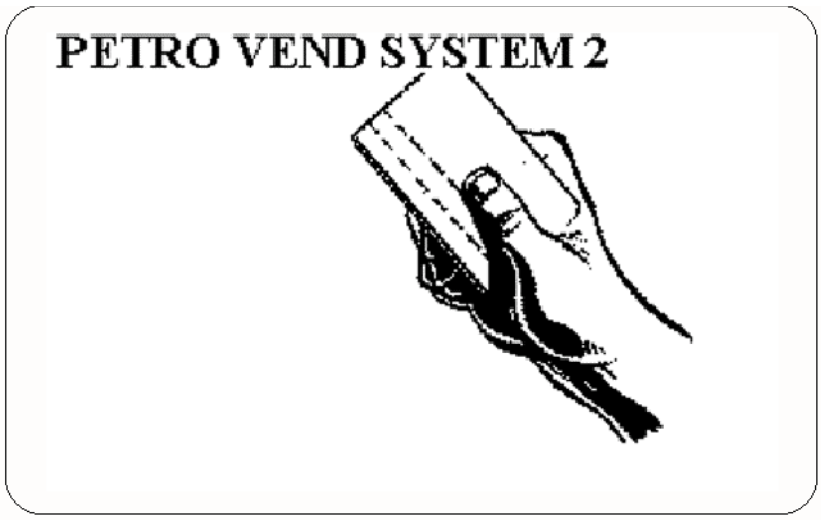
CODE	FIT 1.01	FIT 1.02A or over
^A	Position on Line 1	Position on Line 1
^B	Position on Line 2	Position on Line 2
^C	Position on Line 3	Position on Line 3
^D	Position on Line 4	Position on Line 4
^E	Position on Line 5	Position on Line 5
^F	Position on Line 6	Position on Line 6
^G	Position on Line 7	Position 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

Table 8:

^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

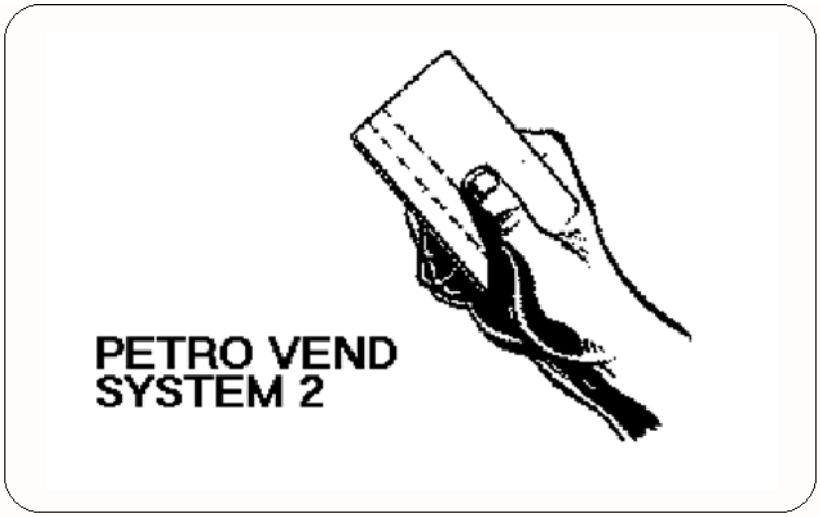
Graphics Display Examples

The following displays result from the text/control code strings located under each.



^1^Y^A PETRO VEND SYSTEM 2

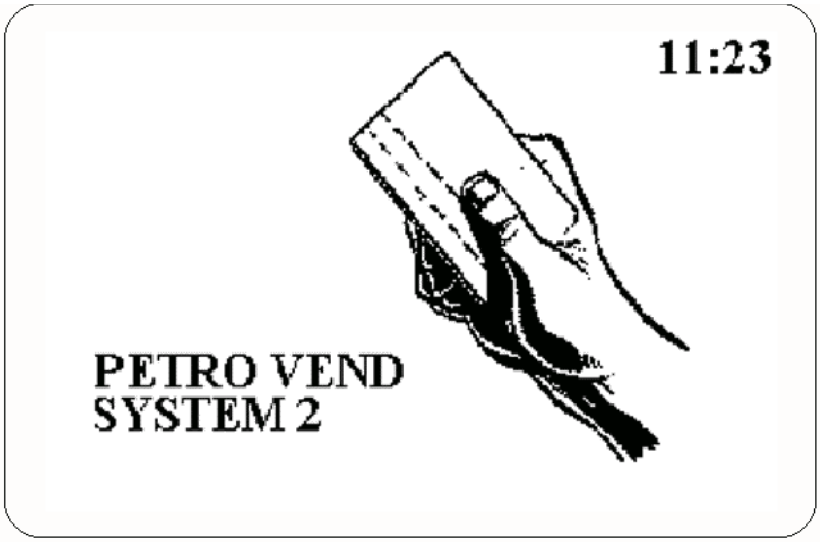
^4^Y^A INSERT CHIPKEY



^1^Z^I PETRO VEND ^J SYSTEM 2

^0^Y^E CHECK CARD ^F ORIENTATION

^4^Y^I INSERT ^J CHIPKEY



^1^Y^T^I PETRO VEND ^J SYSTEM 2

Keyboard YES/NO Response)

The **FORMAT KEYBOARD** command changes the eight-character response a customer sees when pressing the [YES] and [NO] keys. 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.

If Dual Language (see *Language* on page 100) is ON, you'll be prompted for two responses (for Language 1 and Language 2).

Enter a **DOWNLOAD** command to enable your changes.

Messaging

The **FORMAT MESSAGE** command ties messages to a particular account, single, driver and/or vehicle card.

For example, "Welcome" could appear for new account members, or a "Just a Reminder" message could be displayed to check the oil.

Note

Before using Messaging, use the SET CARD command (see to format memory space for messaging.

When a Messaging message appears (before fueling), the customer 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 five programmable parts:

- **Identifier**: A Card Number (up to 19 digits) or Account Number (up to 4 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: **By 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 or by **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.

Create a card/account record before you program a message for it.

1. Type **FORMAT MESSAGE** [ENTER].

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

- **Edit.** Display and modify all the messages of a selected type - Single, Driver, Vehicle, or Account
- **Show** - Displays all messages for a selected type
- **Delete** - Removes messages either one by one or all at once with ALL.
- **eXit** - Return to the previous menu.

2. Press ENTER to go between the Card #' and `Acct #' prompts.
3. Enter a number.

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

4. Enter the first letter of the type (S, D or V or A) and hit [ENTER].

- [S] Display all the Single messages.
- [D] Display all the Driver messages.
- [V] Display all the Vehicle messages.
- [A] or [ENTER] Displays all the Account 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  13,1999 Days: |
| Dis: 1 Auto-Del: OFF Rec: ON
Call office immediately!


Single  #2000          Exp. Date:  FEB 15,1999 Days: 1
|                  | Dis: 0 Auto-Del: ON Rec: ON
Happy Birthday to You!


Single  #3000          Exp. Date:  FEB 24,1999 Days: 7
|                      | Dis: 0 Auto-Del: OFF Rec: ON
Please check trans oil
```

The display shows two vertical lines, and the existing message. Your new message must fit in the space under the two vertical lines.

Your entry is "case-sensitive."

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

5. Change expiration options if needed: If you press [Y], you are prompted `ENTER (Our or Expo. Date): NONE Days:** (Y/N)?:`
6. Enter a duration (0 - 99) or expiration date (`**mmm dd, yyyy**') for the message. If duration is specified, an expiration date is calculated and displayed.
7. Press [Y] to complete the entry. The next prompt is `AUTO DELETE OPTION (Y/N)`
8. Press [Y] for automatic message deletion when the duration is up. You will have a confirmation prompt if you answer Y. The next prompt is `RECEIPT OPTION (Y/N)?`
9. Press [Y] to change the status. You are prompted `PRINT MSG ON RCPT (Y/N)?`
10. Press [Y] if you want the message on the optional receipt. This concludes the message entry.

Date Format

Enter **FORMAT DATE** to display the following prompt:

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

1. Press the first letter of one of the options (below) to select that option.

- **Show** - Displays current data.

2. **Set the date order format** - Two "orders" are available, each associated with a code number: (1) "month day year" and (2) "day month year"). You are prompted: `DATE ORDER CODE FOR LANGUAGE 1:` enter `1' for month first or `2' for day first. If dual language is enabled, you are prompted a second time for the date code. You can specify a different code for each language.

- **sEparator** - Select the two field separator characters.
- **eXit** - Returns you to the previous menu.

3. **Set month code (month #)** - See *Table 9*. If needed change the label(s) for the selected month.

Default Months

Table 9: Default Month Labels

MONTH #	Language 1	Language 2
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

Choose between day first (24 JAN, 1996) or month first (JAN 24, 1996) for the date order. Language 1 default is month first, while Language 2 default is day first.

Date separators distinguish the parts of the date; any printable ASCII character can be used.

Note

Language 1 default is a space and a comma between the day (or month) and the year (example, DEC 30, 1999). Language 2's default is two dashes (for example, 30-12-1999).

Setting System Parameters

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

Figure 29: System Parameters Menu

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

- **FSC Software Version** - for example, 21.02A.
- **Checksums** - Results of an FSC program check. Typically, a number such as 8A49.
- **Display Type** (See *Customer Messages* on page 53)
  - 2 X 16: 2 lines with 16 characters each
  - 1 X 40: 1 line with 40 characters
- **Date and Time** - As set through the System Time screen (See *System Times* on page 12)
- **System State** - ON, OFF or RECEIPTS ONLY (See *Setting System2 ON and OFF Times* on page 43)
- **Installed FITs** - See *FIT Commands* **on page 45**
- **Installed OPTs** - See *OPT Commands* on page 47
- **FIT State** - RUNNING or DOWN (See *FIT Commands* on page 45)
- **Number of receipts issued** to date per FIT.

- **Receipt Printer Errors** - paper jams, paper outs, etc.
- **Installed PCTs** - See *PCT Commands* **on page 49**
- **Installed Positions** - See *PCT POSITION Commands* **on page 50**
- **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. To set this low level, see *TANK Commands* on page 130.
- **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 xxxxxxxxxxxx. 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 16 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 during PCT configuration (See *CONFIG PCT Command* on page 49).

The following are the System2 default names for the 16 products. All products have a default price-per-unit of $1.00 and a default unit of measure of GALLONS.

Table 10:

Code #	Default Product
1	Unleaded
2	Premium
3	Regular
4	Marked Fuel
5	#1 Diesel
6	#2 Diesel
7	Gasohol
8	Alcohol
9	Propane
10	LPG
11	Lubeoil 1
12	Lubeoil 2
13	Trans Oil
14	Coolant
15	Water
16	Air

To change a fuel type:

4. Type **SET FUELTYPE #** (# is the code number, 1-16).

   ```
   ENTER FUELING UNIT CODE (1-3):
   ```

5. Specify a fueling unit (Gallon = Code 1, Liter = Code 2, Quart = Code 3). Type **SET FUELING UNITS** (explained later in this section). Default fueling code is "1". Default unit for Code 1 is GALLON.

   ```
   CHANGE PRICE (Y/N)?
   ```

6. To keep the price the same, just press [ENTER]. If you want to change price per unit, enter [Y] to display the next prompt:

   ```
   ENTER PRICE PER GALLON
   ```

- *Default price is $1.00 per unit. Price can be specified to a tenth of a cent; for example, `$1.059'. A price of `$0.000' can be specified for non-retail sites.*

Note:

The current fuel price is recorded for every transaction. Changing the fuel price does not affect completed transactions.

7. The next prompt is:

```
CHANGE PRODUCT NAME (Y/N)?
```

8. To keep the name the same. press [ENTER]. To change it, press [Y] to display the next prompt:

```
ENTER FUELTYPE 1:
```

9. Type a name (up to ten characters), and press [ENTER].
10. Change other fueltype codes as desired.

The "unit" default is gallons; this can be changed using the SET FUELING UNITS command -- see the *Fueling Units* section in this chapter.

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.

2. To change a value in the table, enter the number of the product to change. You'll be prompted for the name, units, price; also, values for Comdata network types. To retain a value, press [RETURN] or [ENTER].

Caution

DO NOT change network product codes unless instructed to do so by your network representative or Petro Vend.

Note

Current fuel price is recorded with each transaction. Changing the fuel price does not affect completed transactions.

3. 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 16 fuel type prices.

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 96)

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].

Note:

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

Password

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

Your 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)?
```

6. 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.
2. Answer [Y] or [N] to the `ENABLE DUAL LANGUAGE (Y/N)` prompt.
3. 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 113*).

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 ON by default.*

Echo

While you program the FSC, the FSC sends back (echos) 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 ten points for each gallon of fuel dispensed. Then, when a customer pumps 12 gallons of gas, a message like "You have earned 120 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 11*.
3. Enter the code appropriate for your system.

Table 11: Memory Level Codes

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

Table 11: Memory Level Codes

2	3 (Optional)	1 Mb
3	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 **3** and continue on down until System2 accepts the entry.

Version

The SHOW or PRINT VERSION command displays the current software version (for example, 21.02A). 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 Options Settings

Setting Restrictions

From the MAIN menu, press [F]

```
 -----------
RESTRICTIONS     ** PRIVILEGED **
-----------------------------------------
A: SHOW          A: ODOMETER REASONABILITY
B: PRINT         B: PUMP RESTRICTIONS
C: SET           C: QUANTITY RESTRICTIONS
                 D: SECURITY
-----------------------------------------
^ENTER COMMAND:  ^ENTER OPTION:
```

Figure 30: Restrictions Menu

The Restrictions menu (See *Figure 30*) lets 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

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 58.

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 *Define Card/Account Record* on page 115.

Odometer entries are also used by the optional Report Package (See *Appendix F - Report Option* on page 195) 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 111*). 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

Table 12: Odometer Reasonability Codes (Continued)

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 16 codes. To skip past remaining co) des, 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 (see *Odometer Reasonability* on page 103. If you enter [Y], you are prompted with the following (Y is default):

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

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.*

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.

Fifteen Quantity Restriction codes can be defined with the SET QUANTITY command. Restrictions can be by sale amount 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:

Code	Restriction Amount in Dollars
0	No restriction
1	$20
2	$40
3	$60
4	$80
5	$100
6	$120
7	$140
8	$160
9	$180
10	$200
11	$220
12	$240
13	$260
14	$280
15	$300

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.

Each system has a "security table" built into the software. The security table is 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 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.

PIN numbers are stored in the card records created by the INSERT CARD *and* COPY CARD # commands.

Note

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.

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!

PIN numbers are stored in the card records created by the INSERT CARD and COPY CARD # commands. Once created, these records are not affected by changes in the security table. Only PIN numbers generated after modifying the table or code number are affected.

Cards/Accounts Menu

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 #...
-------------------------------------
```

Figure 31: Cards/Accounts Menu

About the Cards/Accounts Menu

The Cards/Accounts menu (See *Figure 31*) 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. 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.

Note

Both must be done before any cards can be programmed.

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.

Petro Vend 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:

- CA cardless record can be up to eight digits long -the network number does NOT have to be a prefix

C The FIT must be set up for cardless operation.

C 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 use 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 (See *Figure 32*) appears.

```
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:
```

Figure 32: SET CARD menu

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 ÷ 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 101*).

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) ?
```

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.

Define Card/Account Record

Type **SET CARD** and then press [1].

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 transaction data!

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 or [ENTER] to leave it unchanged. Default for all is NO. Pressing [ENTER] leaves each at NO.

Note

You MUST set account number and expiration date during system start-up. Other fields can be changed at any time.

- **Account #:** a department or company identification number of up to four digits; cards can be grouped together for allocation or reporting by assigning them to the same account.
- **Expiration Date:** Card or account validity termination day.
- **Monthly Allocation**: Pumping restriction based on dollar amount.
- **Daily Allocation:** Pumping restriction based on dollar amount.
- **PIN #**: Personal Identification Number (card records only, not applicable to accounts). Also see *page 103* for more PIN information.
- **Card invalidation:** after three bad PIN entries (cards only, not applicable to accounts).
- **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.

After entering all your Card/Account Record definitions, you are returned to the SET CARD submenu.

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.

Reconcile Card Record Allocation

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

```
SURE?
```

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

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.

Reconcile Account Record Allocation

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

```
SURE?
```

Press [Y] [ENTER] to confirm.

Similar to **Reconcile Card Record Allocation (***page 117***)**.

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.

Set Keyboard Card Control Data

This SET CARD function works with the system ability to 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.

Press [8], then [ENTER]. You are prompted:

```
ENTER THE CARD CONTROL DATA STRING:
```

Enter up to 30 characters, then press [ENTER].
This SET CARD feature accesses two more:

- Card invalidation Via Bad PIN Entry
- Report Package Discount.

Card Invalidation Via Bad PIN Entry. All cards are affected by this command. When enabled, System2 invalidates a card record when a customer enters three bad PIN numbers during a single transaction.

The customer can *not* gain access to System2 until their card is validated again by a system manager. This helps to prevent unauthorized access to System2.

To validate an invalid card, use the EDIT CARD command, explained earlier.

Report Package Discount. This works with the optional Report Package. See *Appendix F - Report Option* on page 195.

The COPY CARD command lets you copy a card record under a different card number. This lets you make numerous card records with the same account number, expiration date, monthly allocation, daily allocation, odometer reasonability range, pump restriction and/or quantity restriction.

The new card number must be at least five digits for the automatic PIN # generator to work.

After duplication, use the EDIT CARD command to modify items within the copies. The original record is not affected.

The PIN number, current odometer and driver name are NOT duplicated with this command.

After entering COPY CARD, specify the number of the card record to be duplicated. For example:

```
Display                          Keyboard Entry
-----------------------------------------------------
P>                          COPY CARD 12345 [ENTER]
P> COPY CARD                          22222
AUTO GENERATE PIN #'S (Y/N)?          Y [ENTER]
AUTO GENERATE PIN #'S (Y/N)?          Y
ENTER CARD #:                         55555 [ENTER]
ENTER CARD #:                         55555
PIN #:                                4766
CURRENT ODOM:                         10,000 [ENTER]
CURRENT ODOM                          10,000
DRIVER NAME:                          WILLIAM [ENTER]
DRIVER NAME:                          WILLIAM
ENTER CARD #:
```

System2 automatically prompts for the next card number, allowing multiple copies of an individual card record.

Enter a new card number or press the [ENTER] key to exit this command. This command automatically checks for duplicate card numbers in the file. The card file is resorted when this command is exited.

This function sorts all records in the card/account file.

The records are usually sorted automatically after power up, and whenever an INSERT or DELETE command is executed. There are several occasions when a "manual" sort is required:

- If the carrier is lost during modem use
- The privileged mode times out while inserting or deleting a record

If you try to display a record or records when the file is unsorted, an error message is displayed.

Working with Transaction Data

From the MAIN menu, press [H]

```
----------------
TRANSACTION DATA
------------------------------------------------------------
A: SHOW        A: TRANS DATE TIME CARD ACCT VEHICLE
B: PRINT       B: TRANS DATE TIME CARD ACCT VEHICLE SUMMARY
               C: TRANS (#...)
------------------------------------------------------------
C: SET         D: TRANS
D: CLEAR
------------------------------------------------------------
E: CLEAR       E: TRANS DATE #... SEQUENCE #...
------------------------------------------------------------
F: REPORT
------------------------------------------------------------
^ENTER COMMAND ^ENTER OPTION
```

Figure 33: Transaction Data Menu

About the Transaction Data Menu

The Transaction menu (See *Figure 33*) displays or prints completed transactions stored in the System2 data base. A*ll* transactions are stored; the ones you see or print can be controlled through this menu. This menu also lets you erase (**CLEAR**) transactions.

TRANS Commands

Type **SHOW TRANS** or **PRINT TRANS**.

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

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

To narrow the range of transactions to print or show, enter a specific time, date, or number at a prompt. For example, to display only the transactions from January 22, 1996, enter JAN 22 1996 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, 1996, enter <JAN 22 1996 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. An example of a typical transaction is shown below.

```
>PRINT TRANSACTION 161
   -ALLOW WRAP AROUND
   -SAVE UNAUTHZ'D USERS ALSO
   -TRANSACTION BUFFER SIZE: 25

 SEQUENCE #: 123
 REASON FOR TERMINATION: NORMAL
 ACCOUNT: TRUXCO
 DRIVER: SMITH
 VEHICLE: VAN1
 FEB 22, 1989   07:11 PM
 TRANSACTION #: 123
 CARD #: 20001
 FUELTYPE: UNLEADED
 PUMP #: 3
 QUANTITY: 25.000 GALLON
 PRICE: $1.000
 TOTAL: $25.00
 ODOMETER: 66555
 DISTANCE PER UNIT: 10.5
 MISCELLANEOUS: 123456789
 --RECEIPT ISSUED
 ACCOUNT #: 1234
```

Figure 34: Typical Transaction Record

This command displays only the product totals without listing all the transactions. For example,

SHOW or PRINT TRANS (#...)

This command is quick method of displaying transaction data. You are prompted only for the transaction number. Transaction buffer size is set when you define card buffer size (See *Specify Card/Account Buffer Size* on page 113)

A typical printed record is shown in Figure 34, *Typical Transaction Record* on *page 122*.

SET TRANS

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

```
SET WRAPAROUND OPTIONS?
```

With wraparound ON, when the transaction buffer fills to capacity, the System2 erases oldest transactions as new transactions arrive.

With wraparound OFF, the buffer simply stays full. Fueling is not allowed when the buffer is full and wraparound is OFF.

If you enter [Y]:

```
ENABLE WRAP AROUND?
```

Press [Y].

Note

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

```
RE-DEFINE TRANSACTION?
```

Enter [Y] to redefine transactions and display:

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

If you enter [Y], the system logs an unauthorized attempt to use the system in the transaction buffer. Entering [N] tells the system to ignore unauthorized users and events.

```
SPECIFY DISPLAY FIELDS?
```

Display Fields are the ones shown when you use **SHOW TRANS** or **PRINT TRANS**. Choose from the following fields:

- ACCOUNT, DRIVER, VEHICLE
- DATE & TIME
- CARD #1
- CARD #2

- FUELTYPE
- PUMP #
- HOSE #
- QUANTITY
- PRICE
- TOTAL
- ODOMETER
- DISTANCE PER UNIT
- MISCELLANEOUS
- RECEIPT STATUS
- ACCOUNT #

Fields you choose are also used in the External Computer Transactions (See *Appendix D - Using System2 With a PC* on page 169)

If a customer was denied access, only the first four fields and the transaction number are recorded.

Note

There must be at least one transaction in your system for all the selected data fields to show.

COMPUTER FORMAT CHECK DATA IN HEADER?

When transferring data to an external system in the computer format, 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. See *Appendix D - Using System2 With a PC* on page 169.

Press [Y] to *enable* or [N] to *disable* the data check.

CLEAR TRANS

The **CLEAR TRANS** command clears all transactions. To ensure that you do *not* clear transactions accidentally, the system prompts you a second time before clearing the transactions.

You *cannot* clear transactions in the middle of the buffer.

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

REPORT

The REPORT command activates the optional report package. If the package is not installed in your system, you will see:

```
** NOT AVAILABLE **
```

If you have the Report package, turn to *Appendix F - Report Option* on page 195 for more information.

Visanet Transaction Commands

The following are transaction-related commands for Visanet functions:

```
P>SHOW TRANSShows only local card transactions
P>SHOW TRANS CF
P>SHOW TRANS CARD=LOCAL
P>SHOW TRANS CARD=LOCAL CF
P>SHOW TRANS CARD=HOSTShows only host transactions
P>SHOW TRANS CARD=HOST CF
P>SHOW TRANS CARD=ALL - Shows local and host card trans-
actions
P>SHOW TRANS CARD=ALL CF
P>SHOW TRANS BATCH=55 Shows host cards by batch #
P>SHOW TRANS TRACE=12345Shows host cards by trace #
P>SHOW TRANS RETRIEVAL=123456789012Shows host cards by
retrieval #
P>CLEAR TRANSClears local transactions
P>CLEAR TRANS LOCALClears local transactions
P>CLEAR TRANS HOSTClears host transactions
P>CLEAR TRANS ALLClears all local and host transactions
```

System Totals

From the MAIN menu, press [I]

```
----------------
SYSTEM TOTALS
-------------------------------------------------------
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 (#...) TOTALS
G: PRINT
-------------------------------------------------------
H: SHOW             I: TANK (#...)
I: PRINT
J: SET
-------------------------------------------------
^ENTER COMMAND    ^ENTER OPTION
```

Figure 35: System Totals Menu

The System Totals menu (See *Figure 35*) 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 data base. 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 in the T

```
-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
```

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'.

You can use SHOW MIDNIGHT TOTALS 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, 1999
2: JAN 28, 1999
3: JAN 29, 1999
4: JAN 30, 1999
5: JAN 31, 1999
6: FEB 1, 1999
7: FEB 2, 1999
8: FEB 3, 1999 -- 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 "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.

The following prompts appear after issuing a **SHOW FUELTYPE 2 TOTAL** command:

```
PREMIUM   QTY: 0.0 GALLON
```

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]

```
---------------
JOURNAL PRINTER
-------------------------------------------
A: SHOW            A: JOURNAL PRINTER
B: PRINT
C: SET
-------------------------------------------
C: LOCK            B: PRINTER
D: UNLOCK
-------------------------------------------
^ENTER COMMAND     ^ENTER OPTION
```

Figure 36: 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) Y
```

```
SET JOURNAL PRINTER OPTIONS (Y/N) Y
PRINT:
ACCOUNT, DRIVER, VEHICLE, ODOM, and MISC (Y/N)
ACCOUNT #, CARD 2 (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.

Network Printing Formats

The following is a sample transaction:

```
Transaction #:                1234
Reason for Termination:        I
Date:                         01JAN90
Time:                          12:53A
Card #:                        00004401300000301
Pump # - Hose #:               2-1
Product #:                     2
Quantity:                      20.000
Total:                         $20.00
Fleet Name                    ACME DELI
Authorization #               2345678
Reference #                     BUSY
Odometer                      none
Miscellaneous                 none
Account #                      1234
Code                          none
```

The journal printer displays the above information in the format below:

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.

Visanet Host Settings

Host VisaNet settings are not accessible from the Main, or any other, system menu. They must be entered in "command line" form.

SET HOST

Issue the SET HOST command at the privileged prompt to display the Host submenu:

- 1 - MERCHANT INFO
- 2 - HOST CONFIGURATION
- 3 - VALID HOST CARDS
- 4 - PERFORM A CREDIT
- 5 - TEST HOST CONNECTION
- X - EXIT

Merchant Info

Select 1 from the Host submenu (above). Follow the prompts, entering data as you go. The entries shown represent maximum lengths and required formats. For example, the MERCHANT NAME can be up to 25 characters long.

Note

The Merchant Name, Merchant Location and Merchant State must be UPPERCASE entries.

```
ENTER MERCHANT NAME XXXXXXXXXXXXXXXXXXXXXXXXX
ENTER MERCHANT LOCATION     : XXXXXXXXXXXXX
ENTER MERCHANT LOCATION #   : 00001
ENTER MERCHANT STATE        : IL
ENTER MERCHANT CITY ZIP CODE: 00001
ENTER MERCHANT COUNTRY CODE ('840' for U.S.): 840
ENTER MERCHANT CURRENCY CODE ('840' for U.S.): 840
ENTER MERCHANT CATEGORY     : 5999
ENTER MERCHANT NUMBER       : 999999999911
ENTER AGENT NUMBER          : 111111
ENTER ACQUIRER BIN #        : 401205
ENTER CHAIN NUMBER          : 000000
ENTER STORE #               : 0011
ENTER TERMINAL #            : 9911
ENTER TERMINAL ID           : 00000001
ENTER TIME ZONE*            : 706
* 705 -Eastern
  706 - Central
```

```
707 - Mountain
708 - Pacific
```

All information must be supplied by the merchant bank.

Host Information

Host information includes phone numbers, timeouts, authorizations, and pump validation. Select 2 from the Host submenu (page 141). Then, follow the prompts. The following replies show length and proper format for your replies. Dialing "9" is for outside line; the rest of the phone numbers are simulated.

The BANK CARD ON/OFF prompt sets a window for when bank cards are accepted.

```
ENTER HOST AUTHORIZATION PHONE #: 9,1-999-999-9999
ENTER HOST SETTLEMENT PHONE #: 9,1-999-999-9999
ENTER HOST AUTH TIME-OUT (secs):  60
ENTER AUTHORIZATION AMOUNT:  $ 50
CHANGE OFF-LINE AUTHORIZATION OPTION (Y/N)? Y
  ALLOW OFF-LINE AUTHORIZATION (Y/N)? N
ENTER LIST OF VALID PUMPS (Y/N)? Y
  ENTER VALID PUMPS (p1,p2, ...)
    ->1,2,3,5,9,12
  --ANY MORE PUMPS (Y/N)? N
  BANK CARD ON/OFF TIMES (ON=OFF - ALWAYS ON)
    ON time: 02:00 AM
    OFF time: 10:00 PM
ENABLE HOST PROCESSING (Y/N)? Y
```

The final "Y" entry is what actually allows System2 to process your Visa-Net transactions.

Host Cards

This selection lets you specify which bank cards will be recognized by the system. Enter 3 from the Host submenu (page 141). Then, specify VALID or INVALID for each of the card types. Factory default is VALID for all. The first part of the display tells you current settings:

```
VISA            -VALID
MASTERCARD      -VALID
DISCOVER        -VALID
AMEX            -VALID
DINERS          -VALID
CARTE BLANCHE   -VALID
```

To invalidate, enter "N." To validate, enter "Y."

```
VISA            -VALID (Y/N)? y
MASTERCARD      -VALID (Y/N)? y
DISCOVER        -VALID (Y/N)? y
```

```
AMEX            -VALID (Y/N)? y
DINERS          -VALID (Y/N)? y
CARTE BLANCHE   -VALID (Y/N)? y
```

Perform a Credit

To review and credit individual transactions, select 4 from the Host sub-menu (page 141).

First, enter a transaction number:

```
ENTER TRANS #: 19
```

Review the following information:

```
SEQUENCE #............. 19
TRANSACTION TYPE....... HOST
DATE................... JAN 31, 1999
TIME................... 02:10 AM
TRANSACTION #......... 19
CARD#................... 3904567890123456=99011234  CARTE
BLANCHE
FUELTYPE............... UNLEADED
PUMP #................. 1
QUANTITY............... 55.555 GALLON
PRICE.................$1.116
TOTAL.................$62.00
RECEIPT................ NOT ISSUED
HOST TRANSACTION....... OFFLINE - NOT CAPTURED BY HOST
BATCH RETRIEVAL ACI AUTH RESP APPROV ADRS MKT VALID  TRACE  NTWK
001             N    6                 0              000000

   CREDIT THIS TRANSACTION (Y/N)? Y
--DONE
```

Note that a transaction which has already been credited will not allow this command. Also, a new transaction is generated when this command is performed.

Test Host Connection

Select "5" from Set Host menu to dial out to host modem. If connection is good you'll see:

```
*** TEST PASSED ***
```

If connection was not made, you'll see:

```
*** TEST FAILED ***
```

If connection cannot be made check phone line connections on both ends.

Receipt Layout

Enter the non-privileged SHOW RECEIPT command for a breakdown of a receipt. More information on receipts is in the section beginning on page 65.

One important difference between a "regular" and a VisaNet network receipt is that three fields - RETRIEVAL, BATCH# and TRACE# (codes 18, 19 and 20) - must be programmed for host transactions.

```
| CARD #:          |  <--rcp code: 1
| CARD #2:         |  <--rcp code: 2
| TRANS #:         |  <--rcp code: 3
| PRODUCT:         |  <--rcp code: 4
| QUANTITY:        |  <--rcp code: 5
| PR/UNIT: $       |  <--rcp code: 6
| TOTAL:   $       |  <--rcp code: 7
| DRIVER:          |  <--rcp code: 8
| VEHICLE:         |  <--rcp code: 9
| ACCOUNT:         |  <--rcp code: 10
| SITE I.D.:       |  <--rcp code: 11
| MISC:            |  <--rcp code: 12
| ODOM:            |  <--rcp code: 13
| M.P.G.:          |  <--rcp code: 14
| LPHKM:           |  <--rcp code: 15
| PUMP #:          |  <--rcp code: 16
| ACCOUNT #:       |  <--rcp code: 17
| RETRIEVAL:       |  <--rcp code: 18
| BATCH #:         |  <--rcp code: 19
| TRACE #:         |  <--rcp code: 20
```

Batches

A 'batch' is a transaction grouping. A batch can be closed in one of the following ways:

- A certain number of transactions has completed
- A new batch is opened
- The site manager decides to manually close out a batch.

When a batch closes, the System2 FSC calls the host and downloads the transactions belonging to that batch.

SET BATCH Commands

Set batch conditions as follows. You must be in Privileged mode.

```
P>SET BATCH
  ENTER MAX # of TRANSACTIONS PER BATCH: 50
  ENTER TIME TO OPEN NEW BATCH: 12:00 AM
  FORCE BATCH STATUS TO 'CLOSED' (Y/N)? N
```

SHOW BATCH Commands

Use SHOW BATCH to view batch summaries. Here's a sample batch:

```
P>SHOW BATCH
  -MAX # of TRANSACTIONS PER BATCH: 100
  -TIME TO OPEN NEW BATCH: 12:00 AM
BATCH NUMBER: 1  ** CLOSED -SENT TO HOST **
BATCH DATE: JUL 8, 1997   NUMBER OF TRANSACTIONS: 5
BATCH TOTAL: $55.23
   NO CREDITS

BATCH NUMBER: 2  ** CLOSED -SENT TO HOST **
BATCH DATE: JUL 9, 1997   NUMBER OF TRANSACTIONS: 23
BATCH TOTAL: $255.17
   NO CREDITS
      |
      |
      |

BATCH NUMBER: 3  ** CLOSED (not sent to host) **
BATCH DATE: JUL 14, 1997   NUMBER OF TRANSACTIONS: 17
BATCH TOTAL: $207.33
   NO CREDITS

BATCH NUMBER: 1  ** NOT CLOSED **
BATCH DATE: JUL 15, 1997   NUMBER OF TRANSACTIONS: 12
BATCH TOTAL: $132.47
   NO CREDITS
```

Forcing a Batch to Close

If a batch is rejected by the host, you can use SET BATCH to force the Batch Status to Closed. This action also opens a new batch.

Caution

Forcing a batch to close should only be done in conjunction with the Petro Vend Technical Service department. The forced closed batch is NOT automatically sent to the host! Also, the system will no longer attempt to send the "forced closed" batch to the host -- YOU must manually settle the transactions in the closed batch.

Visanet Journal Printout

The following format (approximately) is sent to your journal printer when System2 prints VisaNet transactions.

Note the "two-tiered" structure of the record. The second row header (AMOUNT BATCH RETRIEVAL ACT AUTH RESP APPROV VALID TRACE NTWK) contains all your VisaNet host settings.

```
DATE   TIME  TRN# T   IDENTITY   VEH#    CARD#    MISC   ODOM    PMP# PR QUANTITY
------ ---- ---- - --------- ----- ------- --------- ------- ---- -- ---------
062797 0123 1234 I    DRIVER 35363 3334353  39393939   12345  1-2 10    12.347
072797 0123 1234 I 123456789                39393939   12345  1-2 10    12.347
 AMOUNT   BATCH   RETRIEVAL    ACI  AUTH  RESP  APPROV  VALID  TRACE  NTWK
 $16.04    002    1234567890    Y    A     RR   APPROV  VVVV   000333  N
```

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

FIT Setup

FIT 1	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
E-Stop shuts off these PCTs:	1 2 3 4
Valid pump numbers:	

FIT 2	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
E-Stop shuts off these PCTs:	1 2 3 4
Valid pump numbers:	

FIT 3	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
E-Stop shuts off these PCTs:	1 2 3 4
Valid pump numbers:	

FIT 4	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
E-Stop shuts off these PCTs:	1 2 3 4
Valid pump numbers:	

OPT Setup

Table 15:

OPT 1	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 2	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 3	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 4	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 5	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 6	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 7	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 8	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 9	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 10	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 11	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 12	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 13	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 14	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 15	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 16	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 17	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 18	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 19	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 20	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 21	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 22	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 23	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 24	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 25	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 26	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 27	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 28	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 29	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 30	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 31	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

OPT 32	
Issue receipts?	YES NO
Receipt available for this many days (0-99):	
Keyboard access?	YES NO
Valid pump numbers:	

PCT Setup

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?								
Maximum time per transaction								
Maximum time pump handle can be UP								
Maximum time before first pulse is detected								
Maximum time between pulses								

PCT 2

Table 16:

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

Table 17:

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

Table 18:

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

Table 19:

PCT #	1	2	3	4	5	6	7	8
1								
2								
3								
4								

Customer Messages

Prompts

Table 20: Enter Your Prompts Here!

LANGUAGE 1 PROMPTS	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	

Table 20: Enter Your Prompts Here! (Continued)

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	

Table 20: Enter Your Prompts Here! (Continued)

LANGUAGE 1 PROMPTS (Continued)	
50	
51	
52	

LANGUAGE 2 PROMPTS	
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 (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**	**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**	**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**	**Language 2 Message**	**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	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

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
• Miscellaneous	YES	NO

TRANSACTION DATA (Circle YES or NO) (Continued)		
• Receipt Status	YES	NO
• Account Number	YES	NO

System Totals Settings

Table 21:

SYSTEM TOTALS SETTINGS			
Tank Number	**Fuel Type**	**Current Quantity**	**Low-Level Alert At**
1			
2			
3			
4			
5			
6			
7			
8			

Journal Printer Settings

Table 22:

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

The table shows the maximum number of transactions, cards or keys available with the standard and optional levels of RAM in System2. "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 14.

The Messaging feature is disabled for all memory numbers specified. The “Approx. Number Of Cards” is rounded to the nearest hundred.

MEMORY SIZE/LEVEL	TRANSACTION SIZE CODE	NUMBER OF TRANSACTIONS	APPROX. NUMBER OF CARDS/KEYS AVAILABLE	
			With Minimum Options Enabled	With Maximum Options Enabled
Level 1 - Standard (256 KB)	4	100	10,600	3,700
	40	1000	5,800	2,000
	60	1500	3,100	1,100
Level 2 - Optional (512 KB)	40	1000	20,300	7,100
	80	2000	15,000	5,200
	120	3000	9,700	3,400
Level 3 - Optional (1 MB)	40	1000	49,500	17,100
	100	2500	15,000	14,400
	200	5000	28,200	9,700
	300	7500	14,800	5,100
Level 4 - Optional (2 MB)	40	1000	107,700	37,300
	200	5000	86,400	29,900
	400	10,000	59,700	20,700
	600	15,000	33,100	11,500

Figure 37: Standard Card Record RAM Capacity

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.

Modem Configuration

You must use a PC to set up the PC Logic modem. This modem is available from Petro Vend. The modem attached to System2 must have an "answer only" configuration.

Enter the following parameters for ANY local modem. The PC Logic commands to enter these parameters are shown (these commands are only for the PC Logic modem).

Table 23: PC Logic Modem Parameters

Parameter	PC Logic 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 the PC Logic commands listed above, enter `AT&W' to store the configuration permanently. The default baud rate for the PC Logic modem 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. **Petro Vend** strongly suggests you use PROCOMM® emulation software, made by DATASTORM TECHNOLOGIES, INC. Contact your Petro Vend distributor for details.Read the manual for your Terminal Emulation software carefully. You will need to set the following values (refer to the *System2 Installation Manua*l for instructions on changing these settings):

Table 24: 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, you will need to set the software to "go local". If you are using a modem, you will need to set its program switches. You will also need to enter the telephone number of the **System2** site.

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.

Computer formatted data eliminates these labels, substituting data checks, field codes and field separators. This format is meant to transfer transaction data to a computer data base.

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 176 and See *Reason for Termination Codes (Auth. DENIED)* on page 177.

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|          abcdefghijklmno/07|CR|LF|
                    123/1/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|
```

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

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 16 only	zeros	f
Pump Number	2 digits, from 01 to 99	zeros	g
Quantity	7 digits: ####.###	zeros	h
Price	5 digits: ##.###	zeros	i
Total	9 digits: #######.##	zeros	j
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

TRANSACTION FIELD FORMATTING			
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

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
Quantity Restriction	2 digits	zeros	m
Driver/Vehicle/Account Name	9 characters	spaces	n

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 0010: Driver/Language 1 1010: Driver/Language 2 0011: Vehicle 0100: Account

Example

00110010 *is a Valid Language 1 Driver card with miscellaneous AND odometer entry enabled.*

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 Petro Vend 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 *page 52*.
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	

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 -- *page 103*).
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.
I	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/abcdef/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		

The prefix **COMPUTER** can be placed before any command (*except* **PRINT** or **SHOW**) to suppress the usual **System2** prompts and allow only a carriage return (**`|CR|'**) or line feed (**`|LF|'**) to be returned.

The **`P>'** prompt is returned after each command sequence has been *successfully* completed. The following command suppresses prompts, and enables checksum (the "." enables checksum):

```
COMPUTER HELLO/HELLO/.
```

If the prompt is *not* returned when expected, a 'R' (for RETRY) is returned instead. To abort a command sequence, send a **`^C'** (ASCII 03). Then, re-issue the command.

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** or **Phoenix Plus** software package from **Petro Vend, Inc.** 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 local **Petro Vend** distributor.

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 <u>no</u> 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/abcdefghijklmn/
44|CR|LF|                                        |CR|LF|
1000400000000000000/00100001/1234/
02021996199619961996199619961996199619961996/00000809/001000/000100/--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.

SYSBACKUP 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 in is 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 101.

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 **SYSRE-STORE** command.

No pumps can be active at the time of a **SYSBACKUP** *or* **SYSRESTORE** command.

Field Separator Recognition

New in version 21.05 System2 software is the ability to recognize certain mag-cards with field separator characters in positions 1 and 2 on Track 2. Data on these cards is converted into a format compatible with the card record.

Here are five sample card formats and the resulting card numbers that must be loaded into the card record:

Format #	Raw card data	Resulting card number
Format 1	=NNNN=DDDDVVVVAAAAAA=yymmQPLT	NNNNDDDDVVVVAAAAAA
Format 2	=NNNN=CCCCCCRRRAAAAAAVVVV=yymmQPP5M	NNNNCCCCCCRRRAAAAAA
Format 3	=NNNN=CCCCAAAAVVVV=yymmQP	NNNNCCCCAAAAVVVV
Format 4	==NNNN=CCCCAAAA=====yymm==	NNNNCCCCAAAA
Format 5	==NNNN=========VVVV=====QP	NNNNVVVV

Field codes:

= is a field separator

N is the system ID field

D is the driver number field

V is the vehicle number field

A is the account number field

C is the card number

R is the participant number

yymm is the expiration date

Q is the quantity restriction code

P is the product restriction code

L is the price level code

T is the card type

M is the manual entry code

Note

The FIT or C/OPT test mode can be used to read the raw data from the card.

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. Re-install 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 *one* FIT	FIT not installed. Petro-Net wiring problem. FIT board malfunction. Run COMM test to check board, replace if needed.
SYSTEM DOWN message at *all* 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 .	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.

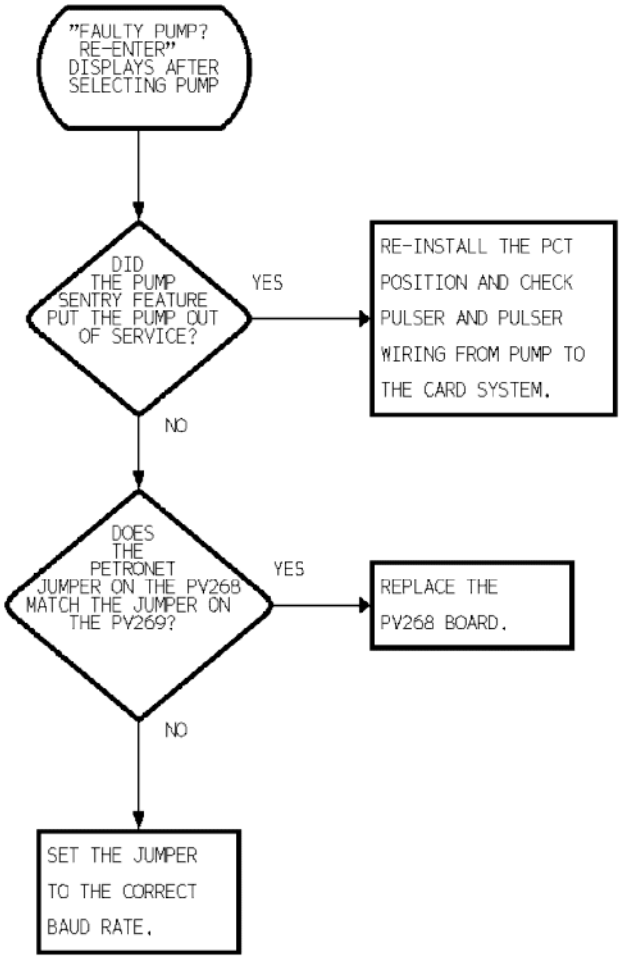


Figure 38: Diagnosing "Faulty Pump Reenter" Message

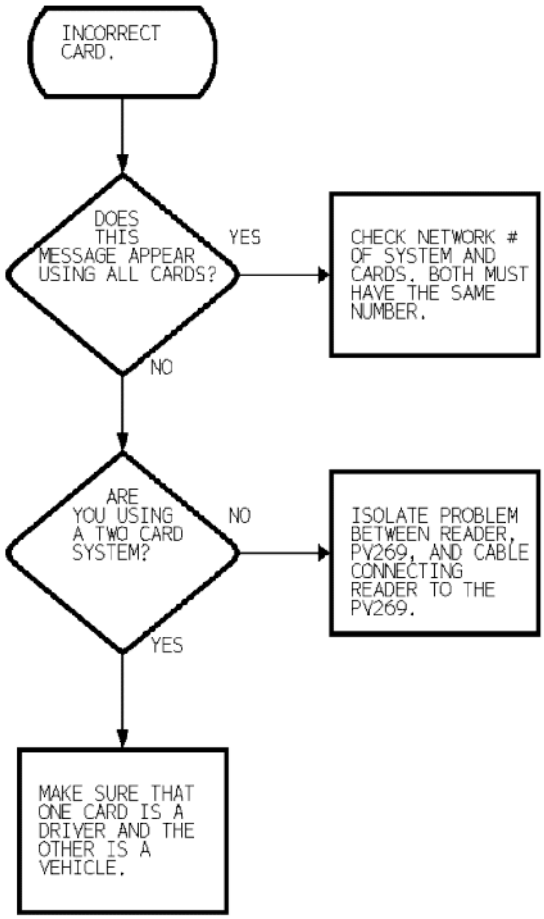


Figure 39: Diagnosing "Incorrect Card" Message

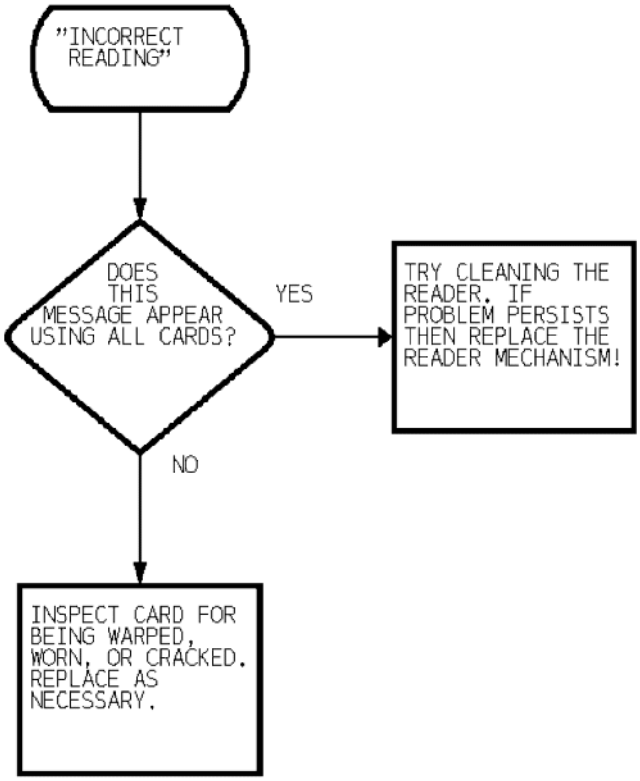


Figure 40: Diagnosing "Incorrect Reading" Message

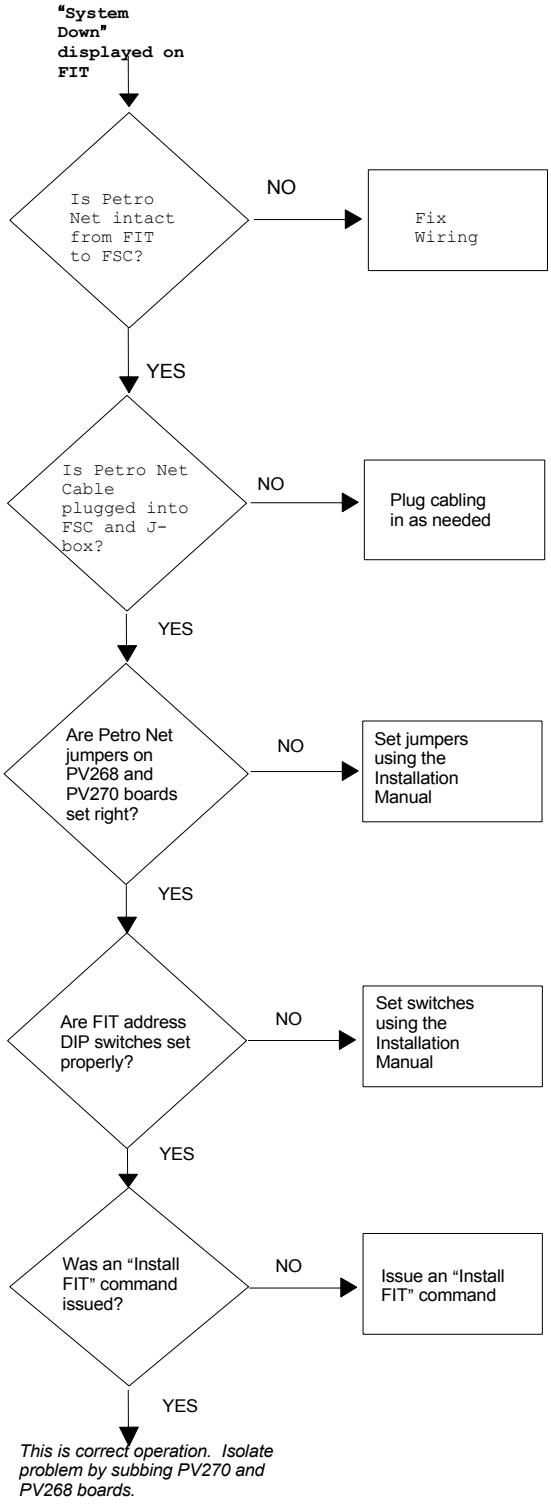
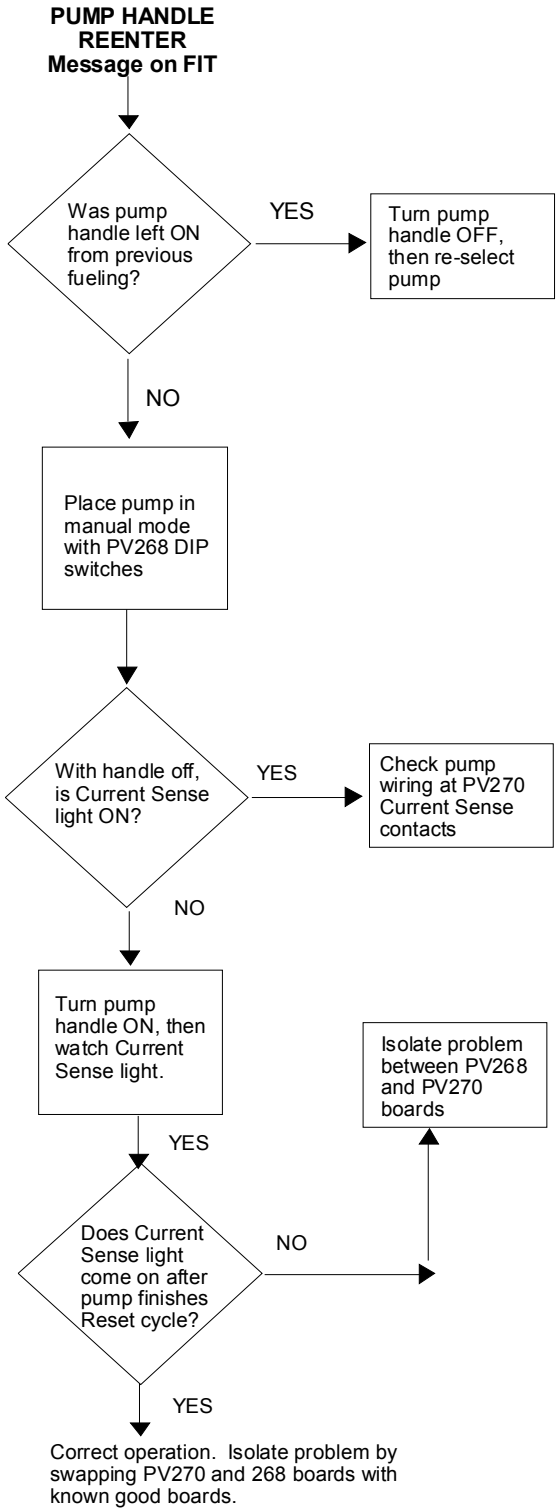
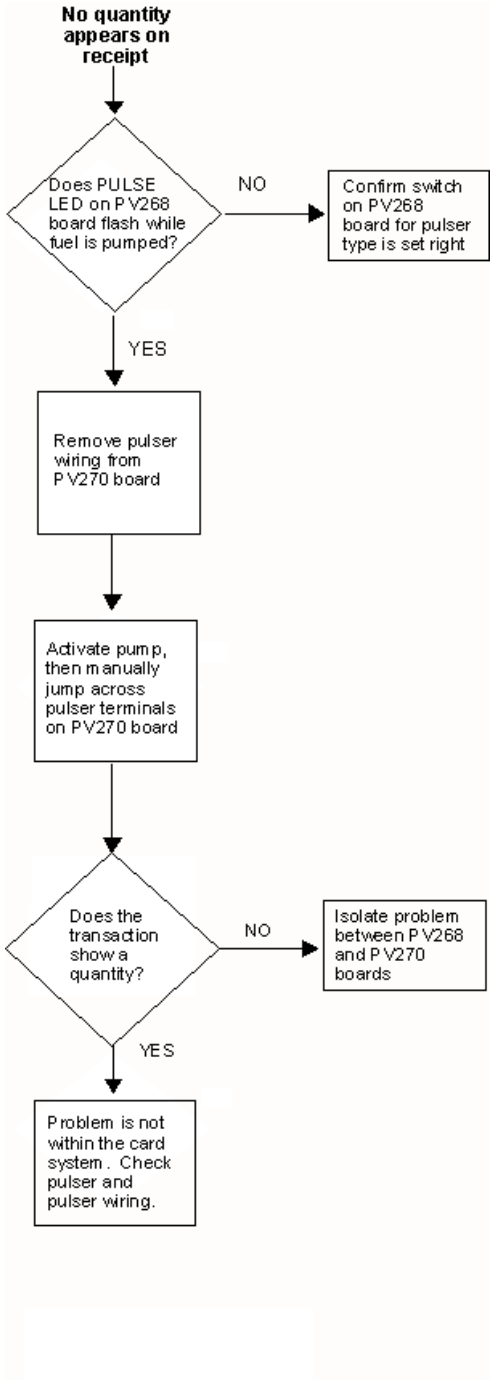
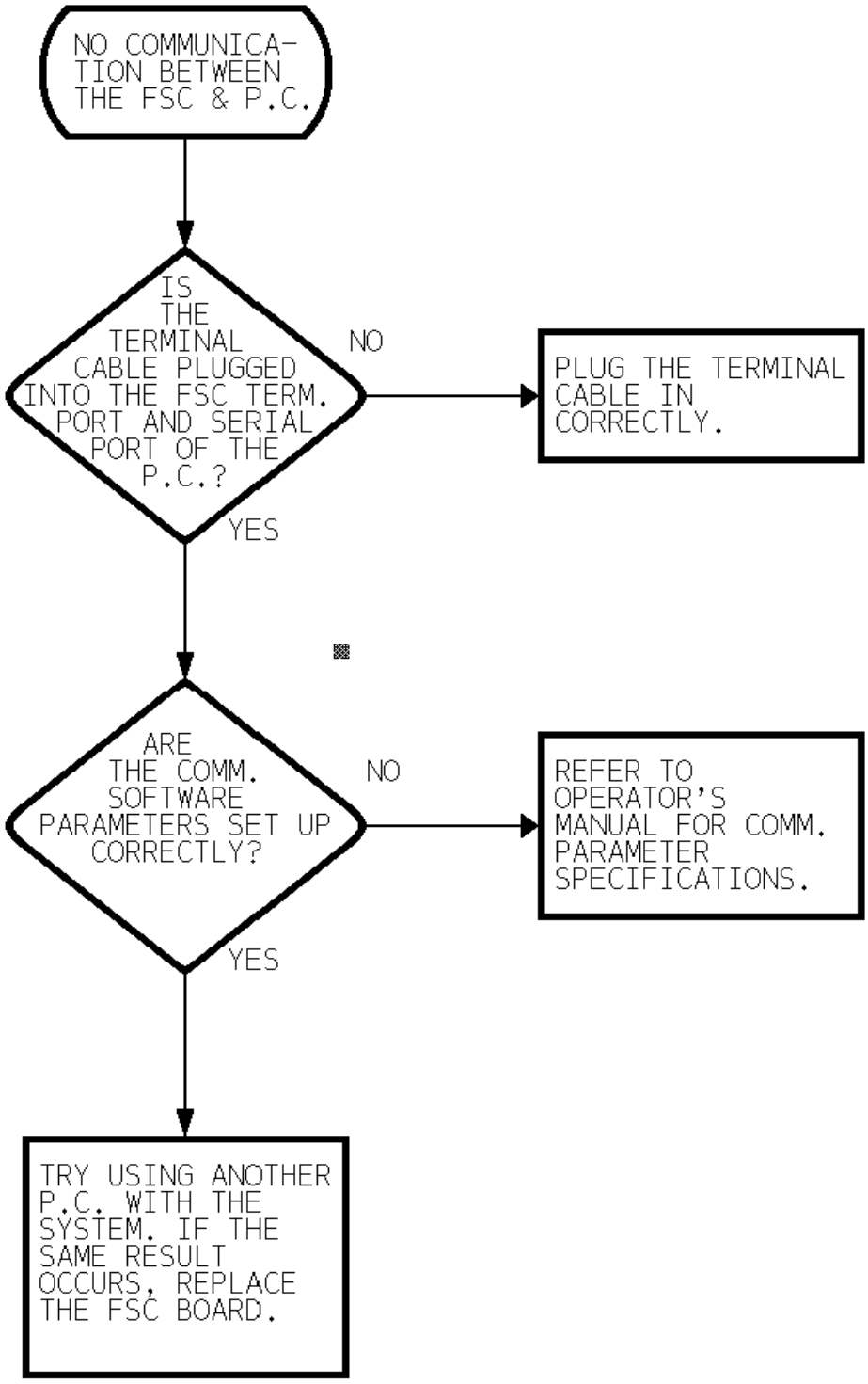
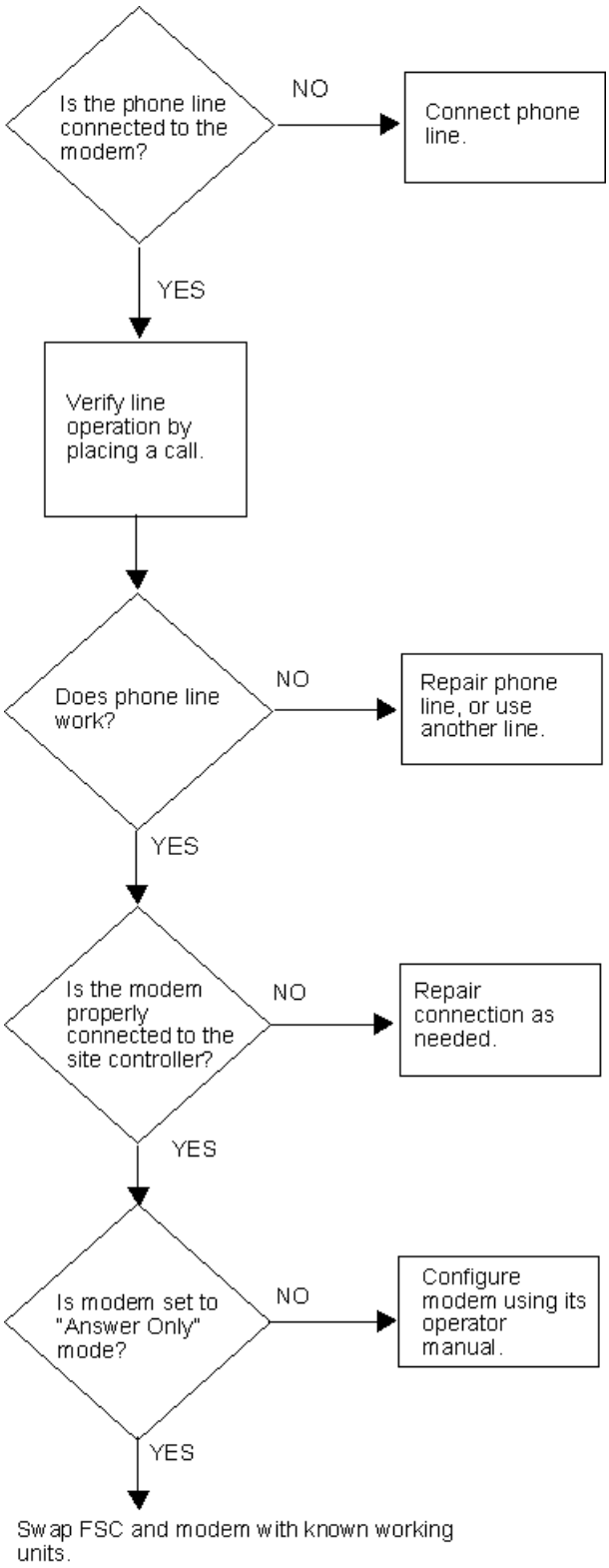


Figure 41: Diagnosing "System Down" Message


PUMP HANDLE REENTER Message on FIT
Was pump handle left ON from previous fueling?
YES
Turn pump handle OFF, then re-select pump
NO
Place pump in manual mode with PV268 DIP switches
With handle off, is Current Sense light ON?
YES
Check pump wiring at PV270 Current Sense contacts
NO
Turn pump handle ON, then watch Current Sense light.
Isolate problem between PV268 and PV270 boards
YES
Does Current Sense light come on after pump finishes Reset cycle?
NO
YES
Correct operation. Isolate problem by swapping PV270 and 268 boards with known good boards.


No quantity appears on receipt
Does PULSE LED on PV268 board flash while fuel is pumped?
NO
Confirm switch on PV268 board for pulser type is set right
YES
Remove pulser wiring from PV270 board
Activate pump, then manually jump across pulser terminals on PV270 board
Does the transaction show a quantity?
NO
Isolate problem between PV268 and PV270 boards
YES
Problem is not within the card system. Check pulser and pulser wiring.


NO COMMUNICA-
TION BETWEEN
THE FSC & P.C.
IS
THE
TERMINAL
CABLE PLUGGED
INTO THE FSC TERM.
PORT AND SERIAL
PORT OF THE
P.C.?
NO
PLUG THE TERMINAL
CABLE IN
CORRECTLY.
YES
ARE
THE COMM.
SOFTWARE
PARAMETERS SET UP
CORRECTLY?
NO
REFER TO
OPERATOR'S
MANUAL FOR COMM.
PARAMETER
SPECIFICATIONS.
YES
TRY USING ANOTHER
P.C. WITH THE
SYSTEM. IF THE
SAME RESULT
OCCURS, REPLACE
THE FSC BOARD.


Is the phone line connected to the modem?
NO
Connect phone line.
YES
Verify line operation by placing a call.
Does phone line work?
NO
Repair phone line, or use another line.
YES
Is the modem properly connected to the site controller?
NO
Repair connection as needed.
YES
Is modem set to "Answer Only" mode?
NO
Configure modem using its operator manual.
YES
Swap FSC and modem with known working units.

Appendix F - Report Option

The optional Report Package allows generation of transaction reports quickly and easily in a variety of formats. Transactions may be grouped either by Card or Account number. Reports may be output to the display or printer.

Itemized Report Data

All reports contain the following information for each transaction unless subtotals only are requested:

- Date and Time of Transaction
- Transaction Number
- Miscellaneous Entry
- Odometer Reading
- Miles/Gallon (liters/100km)
- Pump Number
- Product Name
- Quantity Dispensed
- Product Price
- Total Sale

Summarized Report Data

Each report also contains the following data summaries (or subtotals):

- Total Miles
- Average MPG (liter/100km)
- Cost Per Mile (or Kilometer)
- Average Price/Gallon (or Liter)
- Total Quantity of Fuel Dispensed
- Total Price of Fuel Dispensed
- Total Price after Account Discount

Sample Report

```
Account name: Company ABC Oil
Account # 0001
Single: Bob
```

```
Single card # 0300000000000001

ƒþ_þ   ò   _! _   _©m_7 _8_8m7 ¨DATE     TIME TRAN     N   ODOM   MPG   P# PRODUCT
QUANTITY PRICE TOTAL
--------      -----      ----         --     ------      -----     --     --------
--            --------       -----     -------
                                50000
12/09/97 0853A   24                 50145     35.0    1   UNLEADED    4.140
1.678    6.95
12/09/97 0853A   26                 50503     35.2    2   PREMIUM     10.180
1.870   19.04
12/09/97 0859A   29                 50743     28.8    1   UNLEADED     8.330
1.678   13.98
12/09/97 0900A   31                 51003     29.1    1   UNLEADED     8.920
1.678   14.97
12/09/97 0901A   33                 51250     31.3    1   UNLEADED     7.900
1.678   13.26
12/09/97 0904A   36                 51555     31.8    2   PREMIUM       9.620
1.870   17.99
12/09/97 0905A   37                  52042     26.8    1   UNLEADED   18.160
1.678   30.47
                                                            --------       -------
Subto-
tals:
67.250                    116.66
miles     2042 avg mpg 30.36 cpm 17.50 avg ppg 1.735
```

PRODUCTS	TOTAL QTY.	TOTAL COST
UNLEADED	47.450	79.63
PREMIUM	19.800	17.25
	67.250	116.66

Cost after 5.0% discount: 110.83

Report Mode

Three modes of operation are available:

- The **Quick** mode generates a report according to a format that you have previously selected in the ‘Permanent’ mode. This option enables the fast generation of a standard report.
- The **Run Time Only** mode allows selection of a temporary format and generation of a report in this format.
- The **Permanent** mode is used to select the format for the ‘Quick’ mode report and will be saved until '‘Permanent’ mode is again chosen.

Report Format

Reports may be generated in the following formats:

- Single cards
- Driver cards
- Vehicle cards
- Driver and Single cards

- Vehicle and Single cards

Since generation of a report does not clear transactions reports may be run in each available format individually.

Card Range

You can enter upper and lower card numbers to narrow the transactions displayed to a limited range of cards. Press the **[ENTER]** key when prompted for the lower and upper card numbers to generate a report on all cards.

Account Grouping

An upper and lower account number may be entered to narrow the transactions displayed to a limited range of accounts. Press the **[ENTER]** key when prompted for the account numbers to generate a report on all accounts. When the account grouping option is selected, the transactions are arranged first by account number and then by card number.

Billing Window

A starting and ending date may be entered to narrow the transaction search to a limited range of dates. This range is also called a “billing window”.

Subtotals Only

This option prevents transaction data from being included in a report. Final totals and card subtotals are always included.

Custom Heading

The heading is printed at the top of the first page of a report. Up to three lines of up to 80 characters each may be specified.

Keyboard Field Label

The customer may be prompted to enter a number at the FIT as part of his transaction. These entries appear under the ‘KEYBOARD FIELD’ label in the reports. Give the label any name, up to eight characters.

Fueling Unit Type

Liters or gallons may be selected. Efficiency is calculated as liters per 100 kilometers or miles per gallon. When prompted enter L for Liters or G for Gallon. To generate a report privileged mode must be enabled. At the privi-

leged prompt enter the command ‘REPORT’. Select the option desired.

Run-Time Only Mode

Enter the number for one of the **‘Run-Time Only’** options listed below. The system then prompts for the associated parameters. These parameters will specify how the final output of the report will be displayed.

Option 1

Specify card type, card range, account grouping, and account range.

Option 2

To Option 1 adds billing window entry and subtotal for final report.

Option 3

Same as Option 2 except you can also define custom heading, keyboard field label, and fueling unit type.

Quick/Permanent Mode

To generate a report in the ‘Quick’ mode, you must first enter the ‘Permanent’ mode and select the following parameters:

- ▪Card Type (single, driver, vehicle, single and driver or single and vehicle)
- Card Range
- Account Grouping
- Subtotals Only
- Custom Heading
- Keyboard Field Label
- Fueling Unit Type

Press [ENTER] at each prompt without entering any data to bypass (and deselect) a parameter.

Note

You cannot bypass Card Type or Fueling Unit Type.

After specifying the ‘Permanent’ parameters the ‘Quick’ mode may be selected at anytime to generate a quick report. The system prompts for a billing window and for an output device (terminal or printer) before generating the report. The terminal is the default output device and may be selected by pressing the **[ENTER]** key when prompted.

Appendix G - Receipt Printer and Card Reader Maintenance

Your Fuel Island Terminal may have a receipt printer installed to provide customers with receipts. The FIT can also have one or two magnetic or optical card readers. This Appendix describes how to replace the printer paper roll and the ribbon cartridge, and how to clean the card reader.

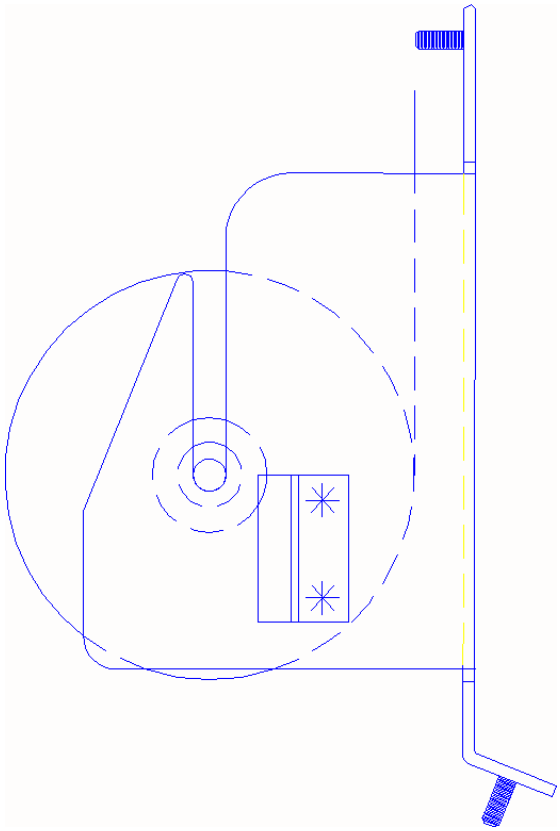


Figure 42: Receipt Printer Schematic View

For additional information on the printer, its control board, status LEDs, and switches, refer to the *System2 Installation Manual.*

The paper feed/cut switch has two functions. When you press and hold the switch, paper is advanced through the printing mechanism as long as the switch is pressed. When you press and immediately release the switch, the paper cutter is activated.

Warning

Do not use your fingers to remove paper near the cutter.

Replacing Paper

Power to the FIT must be ON to remove and reload paper.

To remove the low paper roll, lift the paper roll up from the paper holder and cut the paper away from the printing mechanism. Note where the paper enters the mechanism. This is where you will feed the new paper.

Press and hold the paper feed/cut switch for several seconds to advance the remaining paper through the printing mechanism.

see *Figure 42* on *page 199*. Remove the spindle from the old roll and place it into the new roll. Slide the new paper roll back onto the paper holder.Orient the new roll so that the paper feeds to the printer from the BOTTOM and BACK of the roll.

Cleaning the Reader

You will need a Cleaning card (several supplied with the system), and isopropyl alcohol

1. Turn system ON.
2. Apply some isopropyl alcohol to a cleaning card.
3. Immediately insert the card into the reader.
4. Withdraw the card, and throw it away. Cards are single-use ONLY.

Appendix H - Appendix HH - System2 Commands Summary

Table 25 is a complete list of all System2 commands.

- *Not all versions of System2 software perform all listed commands.*
- [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 25: 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 25: 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 25: 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 “#”

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 25: 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 “#”

JOUNARL 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 25: System2 Commands Summary (Continued)

ODOMETER REEASONABILITY
SET REASONABILTY [P]
PRINT SHOW REASONABILITY

SITE ID
SET SITE ID [P]
PRINT/SHOW SITE ID

PASSWORD
SET PASSWORD [P]
PRINT/SHOW PASSWORD

DUAL LANGUAGE
SET LANGUAGE [P]
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 25: 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,yyyy>
CLEAR TRANSACTION <mmm dd,yyyy> SEQUENCE <#> [P]
CLEAR TRANSACTION [P]
SHOW TRANSACTION CF

TRANSACTION SEARCHES
PRINT/SHOW TRANSACTION WHERE DATE = <mmm dd,yyyy>
PRINT/SHOW TRANSACTION WHERE DATE < <mmm dd,yyyy>
PRINT/SHOW TRANSACTION WHERE DATE > <mmm dd,yyyy>
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 25: 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 25: 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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Notes:

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