unitech

USER'S GUIDE

**PORTABLE DATA COLLECTION
TERMINAL**

PT-500

DOCUMENT NUMBER: 350500-0010

0

NOTICE

The unit is equipped with a NiMH battery pack. It is possible that the customer might receive the battery pack in a discharged (dead) state due to product storage. This is normal.

In the above situation, plug the 9V/500mA AC-DC adapter into the PT500 and an available 110V electrical outlet, switch on the PT500, and fully charge the NiMH battery pack for 14-16 hours. Or place the PT500 into the optional charging cradle for 3 hours before using the unit.

During the initial charging, switching on the PT500 is highly recommended. In addition to charging the main NiMH battery pack, this will also simultaneously charge up the backup lithium battery.

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Table of Content

Chapter 1 Overview

The PT-500 Portable Data Terminal with built-in barcode scanner is a rugged, compact and lightweight hand-held terminal designed for data collection. It offers many features for efficient barcode reading, keyboard data entry, and data processing. It is ideal for a wide range of Automatic Data Collection situations such as transportation, warehouse distribution, retail management, asset tracking, and many other applications.
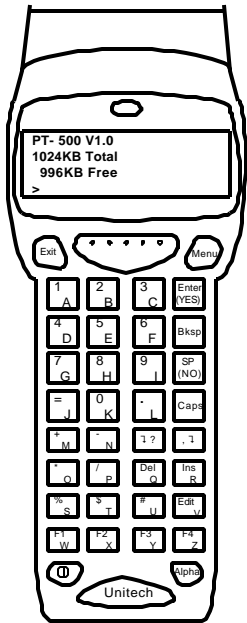
Front

Side

Back

Bottom

3
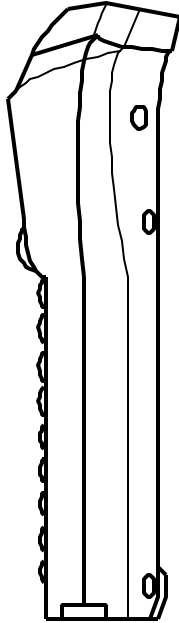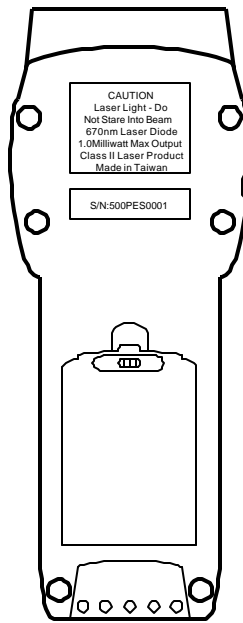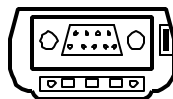
1.1 Technical Specification

- ?? 8-bit microprocessor CPU.
- ?? 64KB ROM.
- ?? 256KB, 512KB, or 1024KB RAM memory.
- ?? 32x122 dots graphic LCD, 4 lines x 20 characters.
- ?? Low power consumption.
  Standby   25mA
  Active   160mA
- ?? Rechargeable NiMH or 3 disposable AA size alkaline batteries.
- ?? Rechargeable Lithium backup battery.
- ?? Real time clock.
- ?? 36 keys alphanumeric rubber keypad.
- ?? Optional integrated laser/CCD scanner.
- ?? One good read LED indicator to scanner input.
- ?? One standard RS-232 port.
- ?? One infrared port communicates to optional cradle.
- ?? Optional Cradle for Battery charging and Data Communication via Local Connection or Modem.

Software System

- ?? Menu driven user interface
- ?? Built-in Data Collection Application. (EzJob)
- ?? Built-in System Management and Data Exchange Program.
- ?? Build in diagnostic program
- ?? Barcode Symbologies:
       UPC, EAN, CODE39, I 2 OF 5, CODBAR, MSI, CODE128 and CODE93.

1.3 Application Development

- ?? Replaceable EPROM.
- ?? Application Development Tools Kit for C programming.

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Chapter 2 Installation

2.1 Power On and Off the PT-500

Press the Power Key ☞ located near the bottom left corner to turn the terminal on and off. As a safeguard, the unit can only be turned off by pressing the power key ☞ for at least **3** seconds.

2.2 Batteries

Main Battery

The PT-500 operates with either a rechargeable nickel metal-hydride (NiMH) battery pack or three standard AA size alkaline batteries. When the main battery is running low, the LCD display will start blinking. If the unit is switched off and on again, a warning message stating "MAIN BATTERY LOW" will appear on the LCD display.
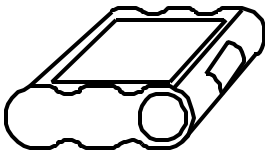
NiMH Battery Pack

Battery Installation Procedure:
1.   Turn off the terminal and place it face down.
2.   Move the battery compartment latch to the left to open. Remove the battery cover.
3.   Insert the main batteries:
       ?   NiMH battery:
              Place the battery with label facing up; firmly push the whole pack inside the compartment.
       ?   Alkaline batteries:

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Insert the batteries in the positions as shown by the polarity symbols inside compartment

4.   Replace the battery cover and move the latch back to the locked (centered) position.

5.   If you are using NiMH battery pack, please charge the NiMH batteries continuously for 14 to 16 hours with AC-DC power adapter, or 3 hours with the optional charging and communication cradle.

Note: The AC-DC power adapter is only for NiMH battery pack recharging. It won't recharge alkaline batteries.
Do not incinerate, crush, or puncture batteries.
Do not dispose of alkaline batteries in fire.
Do not attempt to recharge alkaline batteries.

Backup Battery

The PT-500 also has a built-in rechargeable Lithium backup battery that temporarily protects data stored in RAM. The power of the Lithium battery is only consumed when the main power source is not available, such as when the main battery is removed or discharged. When a functional NiMH battery pack or 3 AA-size batteries are in the main battery compartment, power is provided to backup the RAM memory and system clock, which effectively puts the Lithium battery in a standby state.

The power circuitry of the PT-500 monitors the voltage level from the main power source and automatically connects the Lithium battery for backup once it has detected that inadequate power is being provided by the main power source. Under these conditions, the life of the Lithium battery would be up to **10** hours. Therefore it is highly recommended that the main battery always be kept adequately charged inside the unit.

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When the PT-500 is switched on and the Lithium battery is discharged, the following low backup battery warning message will be displayed on the PT-500 LCD:

BACKUP BATTERY LOW!

In this situation you should upload your data from the PT-500 to a PC and have the Lithium battery replaced. Contact your local sales or service representative for replacement of the Lithium battery.

Note: Data may not be backed up and data loss may occur if both the main battery and the Lithium battery are discharged.

2.3 Using the Keypad

The Keypad of the PT-500 consists of 36 rubber keys and one large scanner trigger button. The keypad layout is shown in the following picture.

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Exit key to previous menu

Go to system menu and select setting

Integrated scanner trigger button

Switch to upper & lower case letter input

Power key to turn On & Off.

Switch between Alpha & Numerical keys
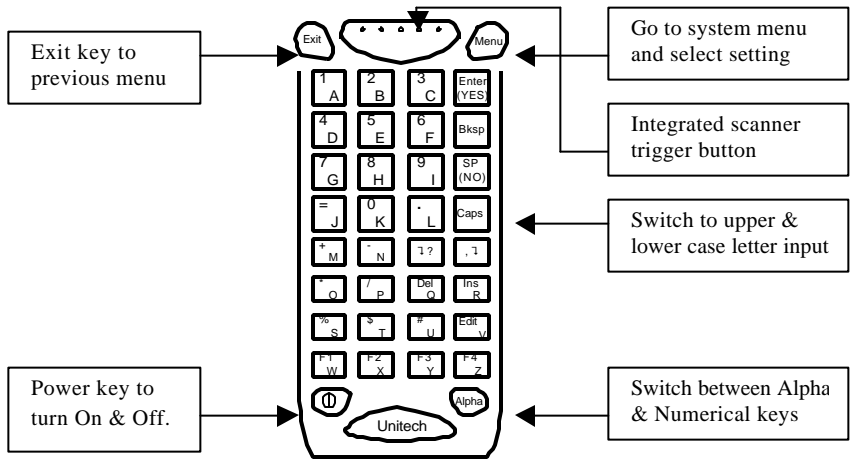
☞	Turn on and off of the terminal. Press ☞ for 3 seconds to turn off terminal.
Alpha	Toggle the keypad input between Alpha mode and Numerical mode. When changed to Alpha mode, the cursor will change from a "☞" to a "_" prompt on the display.
Menu	Go to the System Main Menu and System Setting.
Exit	Exit the current program to the previous program or menu.
Trigger	Activate the integrated scanner module to scan barcode.
F1~F4	Function keys F1 to F4 can be used under the normal numerical mode.

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2.4 Triggering the Scanner Module

The PT-500 can be used with a built-in integrated laser or CCD scanner module. To use the scanner, just point the scanner window at a barcode and press the trigger that activates the scanner. A short beep from the buzzer and flashing red LED indicator on top of the LCD display indicates when the scanning is successful.

2.5 Interface Port

The PT-500 includes a DSUB-9 pin male connector, located at the base of the terminal, for serial communication with a PC. Infra red LEDs and charging contacts for the optional cradle are located on the bottom right below the DB 9 connector. The pin out assignment is shown as follows:
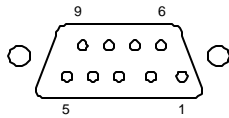
Pin	Signal	Direction	Description
1			
2	RXD	Input	Receive
3	TXD	Output	Transmitted
4			
5	GND	Reference	Ground
6			
7	RTS	Output	Ready to send
8	CTS	Input	Clear to send
9			

The following diagram shows the way to connect input/output devices to the PT-500.

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RS232 cable

MODEM

TELEPHONE LINE

MODEM

COMPUTER SYSTEM

RS-232 PORT
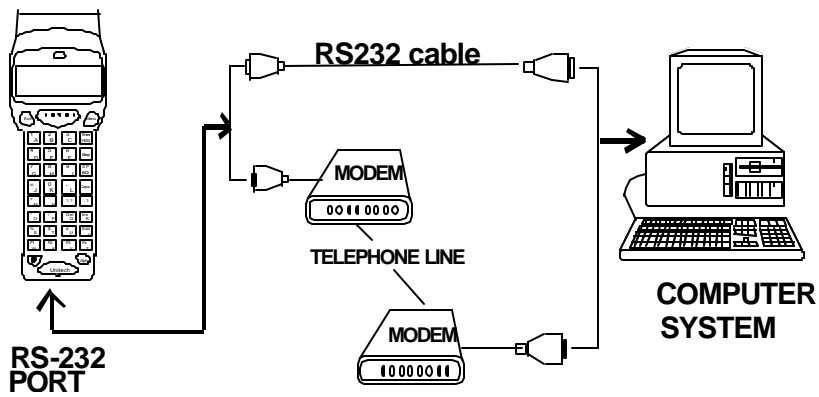
2.6 Optional Charging and Communication Cradle

The PT015 is an optional charging and communication cradle (docking station) designed to work with the PT-500. It provides a connection between the PT-500 and a computer without sacrificing the convenience of portability for daily usage. The cradle has been incorporated with a quick-charge circuit for charging the NiMH battery pack inside the terminal and the spare battery pack on the cradle simultaneously. Battery charging with the cradle takes only three hours - in contrast to the 14 hours required by the DC power adapter.

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FRONT

BACK

SPARE COMM MAIN POWER

RS232

ON OFF
DC9V

SIDE

RS485

BOTTOM

PT015

RS485 RS232
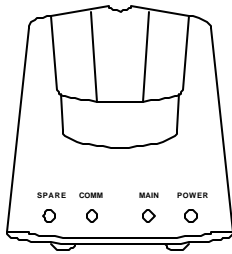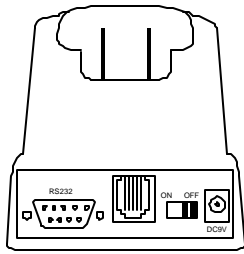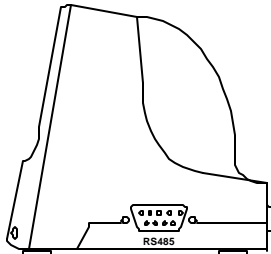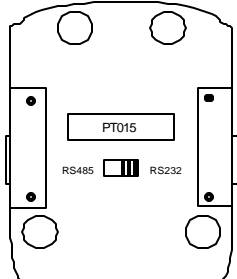
The cradle also provides selectable data communication to the host computer - either point-to-point RS-232 or multi-point RS485 connection. The following diagram shows how the cradle works with the PT-500.

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POINT-TO-POINT
RS232 Connection

Spare
Battery pack

DC 9V

Charging and
Communication
Cradle

PT015

RS232 cable

COMPUTER
SYSTEM

MULTI-POINT
RS485 Connection

DC 9V

DC 9V

DC 9V

RS485
interface

COMPUTER
SYSTEM
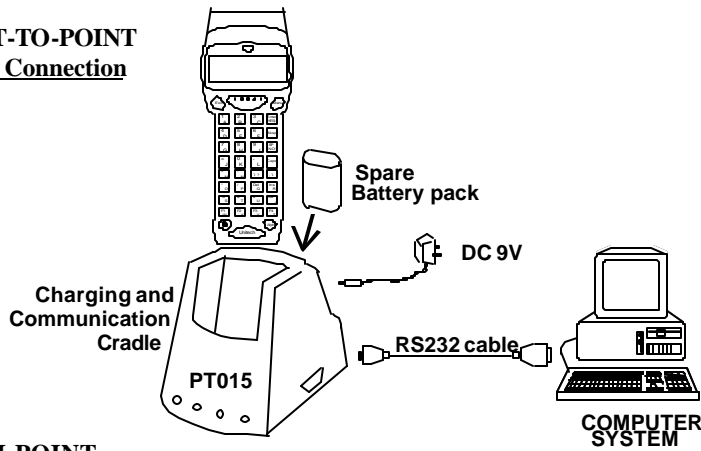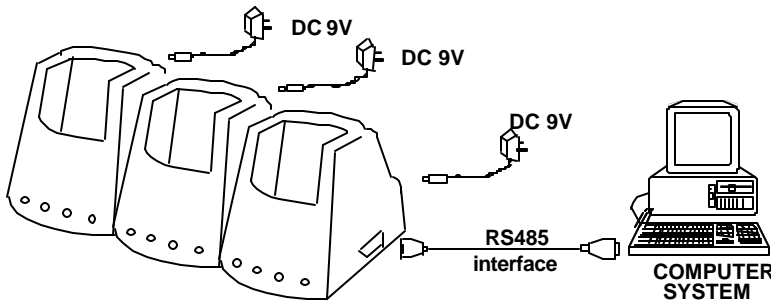
Four Status Indication LEDs are located at the front of the
cradle:

SPARE   Indicates the charging status of the spare
NiMH battery pack. The glowing Red LED
indicates charging is in progress. The glowing
Green LED means the charging is complete.

COMM   Indicates the status of the communication with
the host computer. A flashing Red LED
indicates the data communication is
established between the terminal and the host
computer.

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MAIN   Indicates the charging status of the main
              battery installed in the PT-500. The glowing
              Red LED indicates charging is in progress.
              The glowing Green LED indicates charging is
              complete.

POWER   When the power is turned on, the glowing
              Green LED indicates the cradle is ready to
              use.

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Chapter 3 Operation

The operating system of the PT-500 has 4 different operating modes for different purposes and functions. They are as follows:

1. Ready Mode.
    - ?? Keypad Input will be displayed on the LCD and sent out though RS232 port.
    - ?? Laser or CCD Scanner Input will be displayed on the LCD and sent out through RS232 port.
    - ?? RS232 Input will be displayed on the LCD.

2. System Mode.
    - ?? Menu will guide you to configure and diagnose the system.
    - ?? Multi-point protocol is enabled. User may use PT Comm Manager software to communicate and exchange files between the PT-500 and PC through RS232 port or modem.
    - ?? When the terminal is diagnosing itself, Multi-point protocol will be disabled temporally.
    - ?? Auto Power off is always disabled in System Mode.

3. EzJob Mode.
    - ?? PT-500 includes a built-in application called EasyJob, which enables users to define the data format, collect data, edit data, and upload collected data to the host computer.
    - ?? Multi-point protocol is disabled under the EzJob mode.

4. Application Mode.

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?? The PT-500 can execute user-developed applications under Application Mode. Applications will share the configuration settings and files of the system. After the execution of an application, the PT-500 returns to the Ready Mode.

The following sections will guide you through the operation functions and features of the PT-500. They include descriptions and charts to help you operate your terminal.

3.1 Ready Mode

On starting up the PT-500 for the first time, the LCD will display:

```
Sys Error: xxxx

to Reset
Press EXIT & ENTER
```

This indicates that the memory (RAM) of the PT-500 needs to be formatted. Press both [EXIT] and [ENTER] simultaneously to format RAM. The LCD will then display:

```
All data will be
LOST after reset!
Are you sure? (Y/N)
```

Note: Once RAM is formatted, all existing data will be lost. Press [ENTER] for YES or [SP] for NO to confirm your selection. After RAM is formatted, the system will restart and display:

```
PT-500 v1.0
1024KB Total
1012KB Free
>
```

(This example is for units with 1024KB RAM memory. Units with 128, 256, or 512 KB memory will display messages appropriate for their respective memory size.)

Hold the power on/off key down for at least 3 seconds. The PT-500 will shut down. Release the power on/off key and press it again to power on. You should see the display return to the Ready Mode.

Under the Ready Mode, your keypad input will be displayed and sent out through the RS232 port. You can use [BkSp], [Del], and 2 arrow keys to do simple data editing. You can also scan barcode labels, and the decoded label will be displayed and sent out through the RS232 port.

If there is no input activity for more than 3 minutes, the default setting of the auto power off function will shut the PT-500 off automatically to conserve power. To turn this feature off, or to increase/decrease the time delay for auto power off, please refer to the System Mode section to change the system settings.

Default Settings for the Function Keys under Ready Mode are as follows:

       [F1] to enter INPUT Prompt
       [F2] to enter CODE MENU
       [F3] to enter COMM MENU
       [F4] to enter MISC MENU

The purpose of the Function Keys is to provide shortcuts to access system functions and settings. Please refer to the System Mode section for the definition of Function Keys settings.

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3.2 System Mode
MAIN MENU
System Mode is the main window to access other system functions and settings. Simply press the [MENU] button on the right-hand top corner under Ready Mode to change to the System Mode display.

```
<    MAIN   MENU    >
 1-RUN      2-SET
 3-DIR      4-DEL
 5-DIAG     6-INIT
```

The Main Menu has six selections from which to choose. Under the System Mode, Auto Power Off feature is always disabled, and the Multi-Point Communication Protocol is enabled unless specified. You can use the PT Comm Manager software to configure the system and exchange data files between PT-500 and PC through RS232 port or modem. Advanced users can also develop Windows-based programs to exchange data with PT-500 using DLL files to work with their programs. For more information about DLL software, please visit Unitech's web site at www.unitech-adc.com.

1. RUN MENU
Select [1] to Run EzJob or User's Applications under the Main Menu window.

```
<    RUN    MENU    >
 1-ezJob
 2-MAIN.EXE
  (Song Demo v1.00 )
```

There are two selections to choose from in the above example. Select 1 to run EzJob program or 2 to run the user's application (MAIN.EXE in this case) saved in the

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terminal. MAIN.EXE is a user application program downloaded to the PT-500. MAIN.EXE and its internal name (Song Demo v1.00, which is defined in the RESOURCE area of user's C program) will appear only if you have downloaded the program into the PT-500. EzJob features will be described in more detail in the EzJob Mode section.

In this example:

>
> Select [1] to run EzJob.
> Select [2] to run MAIN.EXE.
> Select [EXIT] to return to the previous menu.

2. SET MENU
Select [2] to configure the PT-500 System Setting under the MAIN MENU.

```
┌─────────────────────────────┐
│  <    SET    MENU    >       │
│   1-TIME     2-CODE          │
│   3-COMM     4-BEEP          │
│   5-FNKY     6-MISC          │
│                             │
└─────────────────────────────┘
```

  1. TIME MENU
     Select [1-TIME] to enter the TIME MENU to adjust
     the date and time of the PT-500.

```
┌─────────────────────────────┐
│  <    SET    MENU    >       │
│                             │
│   1-Time     2-Date          │
│                             │
└─────────────────────────────┘
```

     Select [1] to change the time.
     Select [2] to change the date.
     Select [EXIT] to return to the previous menu.

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Select [1] to change the time

```
<    TIME   MENU    >

TIME 00:00:00
     XX:XX:XX
```

Enter the correct time (HH:MM:SS).
Press [Enter] to save and exit to previous menu.
Press [EXIT] to abort and exit to previous menu.

Select [2] to change the date

```
<    DATE   MENU    >

DATE 00/00/2001
     XX/XX/XXXX
```

Enter the correct date (MM/DD/YYYY).
Press [Enter] to save and exit to previous menu.
Press [EXIT] to abort and exit to previous menu.

2. CODE MENU
Select [2-CODE] to enable/disable the barcode
symbologies decoding.

```
<    CODE   MENU    >
UPC/EAN     ON
```

Press [SP] to change the selection.
For each symbology item, press [Enter] to confirm the
setting and continue to the next setting.
Press [EXIT] to abort the last change and exit to the
previous menu.

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3. COMM MENU
Select [3-COMM] to change the settings of the
RS232 port.

```
┌─────────────────────────────┐
│  <    COMM   MENU    >       │
│                             │
│  Baud Rate 9600             │
│                             │
│                             │
└─────────────────────────────┘
```

Press [SP] to change the setting.
Press [Enter] to confirm the setting and continue to
the next selection.
Press [EXIT] to abort the last change and exit to the
previous menu.

4. BEEP MENU
Select [4-BEEP] to adjust the volume of the beep.

```
┌─────────────────────────────┐
│  <    BEEP   MENU    >       │
│                             │
│   1-None      2-Low         │
│   3-Med      4-Hi           │
│                             │
└─────────────────────────────┘
```

Press digit 1 to 4 to select your beep volume.
Press [Enter] to test the selected volume.
Press [EXIT] to return to previous menu.

5. FNKY MENU
Select [5-FNKY] to change the shortcut function key
settings and create user-defined function keys.

```
┌─────────────────────────────┐
│  <    FNKY   MENU    >       │
│                             │
│   1 - F1     2 - F2         │
│   3 - F3     4 - F4         │
│                             │
└─────────────────────────────┘
```

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There are four user-definable function keys, F1 to F4.
Under Ready Mode, pressing one of them will
automatically perform a series of keypad inputs. The
default settings for the function keys are:

F1	[MENU]111
F2	[MENU]22
F3	[MENU]23
F4	[MENU]26

For example, pressing F1 under the Ready Mode, will
perform the same as if you were to press the four
keys [MENU] 1 1 1 sequentially. In this case, EzJob
will start and will accept data input.

Select 1 to 4 to select the corresponding function key
and enter the keystroke sequence. For example,
typing 1 will select function key F1. Then enter the
desired keystrokes.

```
<     FNKY   MENU    >

Define F1
?111              .
```

Note: Any pressed key will become part of the
shortcut input except F1 through F4 because those
shortcut keys cannot be nested. During the shortcut
input, keys F1 through F4 are only used to confirm or
abort the shortcut settings and/or exit.

F1 Reset settings to Factory Default
F2 Clear the fields for new input
F3 Abort any changes and Exit
F4 Save settings and Exit

Use F3 or F4 to either abort or confirm the settings
and then return to the previous menu.

6. MISC MENU
Select [6-MISC] to modify Power Auto Features.

```
<    MISC  MENU    >

 1 - Auto  PowerOff
 2 - Auto  Run
```

Select [1] to change Auto PowerOff feature.
Select [2] to change Auto Run program.
Select [Exit] to return to the previous menu.

1. Auto Power Off

```
<    MISC  MENU    >

Auto  PowerOff   ON
```

Press [SP] to change the setting.
Press [Enter] to confirm the setting. If Auto
PowerOff is ON, input a delay period from 00
to 30 (minutes) and press [Enter] to confirm
the setting.
The default setting is 03 (three) minutes.
Press [EXIT] to return to the previous menu.

2. Auto Run

```
<    MISC  MENU    >
Auto  Run  None
```

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Press [SP] to select the auto run program from start up.
Press [Enter] to save the setting and return to the previous menu.
Press [EXIT] to abort and return to the previous menu.

3. DIR MENU

Select [3-DIR] to list files. Files can be data, fonts, or an executable program saved in the PT-500.

```
<    DIR    MENU    >
EZJOB    TAB
1056     Byte(s)
              2-Next
```

Press [1] to scroll backward.
Press [2] to move forward.
Press [EXIT] to exit to the previous menu.

4. DEL MENU

Select [4-DEL] to delete files from the PT-500.

```
<    DEL    MENU    >
EZJOB    TAB
1056     Byte(s)
Delete (Y/N)
```

Press [1] to scroll backward.
Press [2] to move forward.
Press [Del] to delete the file.
Press [YES] to confirm.
Press [NO] to abort the deletion.

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Press [EXIT] to exit to the previous menu.

5. DIAG MENU

Select [5-DIAG] to diagnose the PT-500 to determine if there
are any hardware problems.

```
┌─────────────────────────────┐
│  <    DIAG   MENU    >       │
│                             │
│   1-LCD      2-KBD          │
│   3-COM      4-MEM          │
│                             │
└─────────────────────────────┘
```

Select [1] to diagnose LCD
Select [2] to diagnose Keypad
Select [3] to diagnose RS232 port
Select [4] to diagnose Memory
Select [Exit] to return to the previous menu

Note: Multi-Point Protocol will be disabled temporally
while the system is diagnosing itself.

1. DIAG LCD

The LCD will become clear, then black, and then will
return to the Diag Menu display.

2. DIAG KBD

```
┌─────────────────────────────┐
│  <    DIAG   MENU    >       │
│                             │
│  Key Pressed:               │
│  _                          │
│                             │
└─────────────────────────────┘
```

Keypad input will be displayed on the bottom left
corner. Press [Exit] key to return to the previous
menu.

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3. DIAG COM

```
<    DIAG  MENU   >

Connect Pin 2-3, 7-8
Ready? (Y/N)
```

Before diagnosing, loop back the RS232 port Pin 2-3, Pin 7-8, and press [ENTER]. The test result will be displayed on the bottom line.

4. DIAG MEM

```
<    DIAG  MENU   >
Bank:     00
Offset: F800
```

During diagnosis, Memory Bank and Offset values will be displayed. If no problem is encountered, a "PASS" message will be displayed and you can exit to the previous menu. If a problem is found, a warning message will ask whether the test should be aborted. Press [YES] to exit. Press [NO] to continue.

6. INIT MENU
Select [6] to Initialize the PT-500 and return the terminal back to the Factory Default Setting.

```
<    INIT  MENU   >
     Warning!!!
Data will be LOST
Continue? (Y/N)
```

Note: Initialization will remove any data and user
programs from memory. Please upload any
important data and then press [YES] to confirm or
[NO] to abort.

Select [EXIT] to return to Ready Mode.

3.3 EasyJob Mode

Easy Job is an application generator to help the user to
define simple data collection tasks for the PT-500. The
EzJob Menu consists of 4 selections for different functions
and settings.

```
< ezJob   Menu   >

 1-INPUT 2-DUMP
 3-PURGE 4-FORMAT
```

Note: the Multi-Point protocol is disabled under the EzJob
      Mode.

Select [1] INPUT for data collection
Select [2] DUMP to upload data to PC
Select [3] PURGE to erase data
Select [4] FORMAT to define the EzJob data format
Select [Exit] to return to the Ready Mode

1. INPUT
When the INPUT function is selected, EzJob starts and
displays a pre-defined record format for data collection.
Users may use the PT-500 keypad to enter data, or the
integrated scanner module to scan barcode labels. If the
input data and fields do not match up, the incorrect data
input will not be accepted and a warning beep will sound.

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Left-arrow, right-arrow, and backspace keys can be used for editing.

```
Prompt  1
????????????????????
????????????????????
```

During data input, the user can browse the input data, insert one new record, or delete one existing record. In order to edit data, press [EDIT] under the INPUT prompt, use the arrow keys to move forward or backward, press [INS] to insert one new record, or press [DEL] to delete one existing record.

Note: One record may consist of more than one field of data. Insert and Delete functions treat each record as a whole unbreakable entity. Press [EDIT] in order to modify only the selected field in the current displayed record. Press [EXIT] to return to the previous menu.

2. DUMP
Output the collected data through the RS232 port according to the data format. While sending data, the LCD display will be refreshed. A beeping sound indicates the download has completed.

```
Dump    Done!
0
```

3. PURGE

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Purge Data can be used to delete all the data records after uploading data to the PC. The PURGE feature will delete all the data records but still retain the data format.

```
Purge    Sure? (Y/N)
30
```

Press [YES] to confirm or [NO] to abort. The second line number is the number of data records currently in memory. A beep will sound after the purge is completed.

4. FORMAT
The FORMAT feature defines the data collection input format. Some settings can be changed at any time - while others can only be changed if there are no data records.

Settings that can be changed at any time:

Echo	**OFF**/ON
	If ON, each field will be output through the RS232 port immediately after data input.
Head of File	**OFF**/ON
	If ON, Header information will be sent first. The Header includes the file name and current time stamp. EasyJob's file name is EZJOB followed by three spaces. Time Stamp's format depends on the setting selected by the user.
End of File	**OFF**/ON

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	If ON, the EOF (1A Hex) will be sent at the end of the data record.
Field Delimiter	**,** / ; /SPACE/NONE The Field Delimiter will be used to separate the fields in each record.
Record Delimiter	**CRLF**/NONE/CR/LF The Record Delimiter will be used to separate the records in one file.
Delay	**0** to 9999 ms Time delay between the output of each record.

Settings that can be changed only if there is no record:

Time Style	**MMDDYYYYhhmmss** MMDDYYhhmmss MMDDhhmm DDMMYYYYhhmmss DDMMYYhhmmss DDMMhhmm YYYYMMDDhhmmss YYMMDDhhmmss

MM = Month, DD = Day, YY or YYYY = Year. hh = hour, mm = minute, ss = second.
12/31/2000 14:20:40 will be presented as
　　　　　　12312000142040　　or
　　　　　　123100142040　　　or
　　　　　　12311420

Time Stamp	**OFF**/ON

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	If ON, each record will include a time stamp automatically following the data record. The time stamp format will follow the setting defined by Time Style.
Field	**1** to 16
	Data input fields are numbered 1 through 16 (maximum). Each field will have its own Prompt, Picture, Min, and Max.
	Prompt will display the message prompting data input.
	Picture is a sequence of characters that verifies the data format.
	Min is the minimum length of the field.
	Max is the maximum length of the field.
Prompt	**1** to 20 printable characters. Displays a message prompting the user to input data.
Picture	Following are the available picture characters:

Picture	Description
a	Only alpha characters are accepted. A-Z, a-z
n	Only digits 0-9, -, and +.
p	Only digits 0-9.
l	Only lower-case alpha characters. a-z.
u	Only upper-case alpha characters. A-Z.

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x	Printable characters. (ASCII code 32 - 126)
z	Full ASCII characters.
%	Control character used to append constant string. This character can appear only at the beginning of a picture.

Min   >=**1**, <=Max
             Minimum length of data input.

Max   >=Min, <=**40**
             Maximum length of data input.

Note: **Bold** characters represent the default setting for each parameter.

3.4 Application Mode

Advanced users can create custom programs for the PT-500 by using the C programming language. The optional PT-500 C Kit Technical Binder with C compiler includes an ANSI standard compatible Library. Applications can be programmed into EPROM to replace the original PT-500 firmware.

The PT-500 C Kit includes a Compiler, a Linker, and a Library. After copying the PT-500 C Kit onto hard disk, you will find:

```
\PT500
A8051    EXE       Assembly
C-51     EXE       C-Compiler
XLINK    EXE       Linker
XLIB     EXE       Library Manager
HEX2BIN  EXE       Converter
```

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```
MAININFO COM      Converter
SETENV   BAT      Set the environment
ASM      BAT      Assembly
C51      BAT      Compiler
LNK      BAT      Linker
H       <DIR>     C Header files
C       <DIR>     C Source files
R03     <DIR>     Object & Lib files
S03     <DIR>     Assembly files
XCL     <DIR>     Cross files
APP     <DIR>     C-Source files
LST     <DIR>     List files
MAP     <DIR>     Map files
```

The following steps illustrate how to create an application under the MS-DOS operating system:

1. Select PT500 as the current directory.
2. Type SETENV to set the environment.
3. Create a project file called APP.PRJ in the PT500 directory. It will contain one text line: R03\APP.R03 R03\APPRES.R03. We will have one C source file in <APP> sub-directory called APP.C, and one Assembly source file in <S03> sub-directory called APPRES.S03.
4. TYPE C51 APP.
5. TYPE ASM APPRES.
6. TYPE LNK APP.
7. Get APP.BIN. Download it to the portable and run. Hold the scan key down. The portable will scan again and again automatically every 3 seconds.

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