

PDT-2E-E Barcode Data Terminal

User Manual



I. Product Description

1、 Function Characteristics

Welcome to use PDT-2E-E, which is a new generation of wireless barcode scanning product, which combines the function of wireless barcode scanner and all kinds of common wireless barcode data terminal, user can use this product without any programming. The keyboard and screen enables

the PDT-2E-E achieve the functions that other wireless barcode scanners gun can't do. When barcodes damaged, you can input via the keyboard; also, it displays the current radio channel, wireless signal strength and battery level, etc. Besides that, it matches with wireless base station via USB port, have virtual keypad pattern and can be used in WINDOWS without any driver.

PDT-2E-E wireless barcode terminals use the laser barcode scanning engine, which increase the scanning speed and enlarge the scan depth, to meet the needs of most industries.

PDT-2E-E wireless barcode terminals have simple barcode data collecting and inventory functions. They support offline batch scan mode, can scan and save maximum 50,000 barcode data at once time. After collection, users can wirelessly bulk transmit barcode data or via USB port to a computer. For the purpose of simple barcode capture applications, it is an alternative to the original expensive and complicated inventory machines, thus reduce user's cost.

PDT-2E-E adopted 433M wireless frequency, two-way communication. It supports maximum 32 radio channels. In other words, 32 groups of PDT-2E-E devices can be used at the same time and will not interfere with each other simultaneously; each channel supports 255 devices, while in practice, the devices used in the same channel may conflict, no more than 5 devices is suggested. The transmission distance is generally 50-100m in the case of obstruction free. Strong environment interface would largely reduce the communication distance.

2. Technical Parameter

- 1) 32-bit high-speed ARM series CPU
- 2) FLASH memory 4MB, can save about 50,000 barcodes..

- 3) With enhanced barcode collect and inventory functions, support a single library or multiple libraries, libraries are independent and could be with its own customized name as required.
- 4) Power supply: two 5 AA batteries (1600-2400mah of NiMH rechargeable battery is suggested), support USB port charging.
- 5) Display: 2.2 "TFT screen, resolution 220 x 176.
- 6) Size: 140 x 60 x 33 mm, about 160 grams
- 8) 22 keys high quality silicone keyboard
- 9) Standby time: more than 6 months
- 10) Continuous working hours: 50-100hrs, scan 10,000 times at least
- 11) Power off protection, switch on and off whenever needed, featuring automatic power off function.
- 12) Barcode scanning mode: 650ns laser
 - Scan Depth: 3-30cm (with 13mil EAN13 barcode)
 - Scan the barcode width: 20cm or lessBarcode types: EAN13, EAN8, 39 code, 93 code, 128 code, interleave 25 codes (IT25), Code bar, UPCA, UPCE etc.
- 13) Adopted 433M wireless data transmission chip, ensures the reliability of data transmission.

Wireless frequency:

- 433M, two-way communication
- Maximum wireless Transmit Power: +10 dB
- Wireless receiving sensitivity:-102dB
- Wireless Channel: 32
- Number of devices per channel: 255
- Wireless signal strength indicator

CRC check for wireless communication ensures the accuracy of data transmission.

- 14) Wireless base station and terminal must in the same channel. A wireless base station is recommended to support five hand-held terminals. The base stations support USB port, USB emulation serial

port, or USB keyboard, with which the drive is not needed.

3. Appearance & Accessories

PDT-2E-E wireless barcode terminal contains one handheld terminal and one wireless base station.



Handheld barcode terminal Wireless base station

4. Application

PDT-2E-E Wireless barcode terminal is for big parcels barcode scanning, and barcode scanning in small or medium-sized supermarkets,

express services, logistics, and warehouses. The transmission distance reaches 50-100 meters; it is an ideal choice for inventory in these places.

II. Using

1. Battery and Charging

PDT-2E-E Wireless Barcode terminal uses two AA batteries, disposable battery or rechargeable battery. The disposable battery is better to be alkaline battery, but not the dry battery, which would possibly cause leakage when it stays on the shelf for a long time. The rechargeable NIMH battery is with capacity of 1600-2400mAh, ensuring the long time use of the device.

PDT-2E-E wireless barcode terminal comes with charge function. You can charge the NIMH battery through the USB port what is at the bottom of the PDT-2E-E. Charging voltage is 5V, you can also use the computer's USB port for charging, or use an external 5V power supply. The PDT-2E-E will monitor the charging status automatically. Automatic shutdown when fully charged. The general time to charge a pair of 2000mAh NIMH rechargeable batteries is about 12-15 hours.

Note: only the rechargeable battery can be charged, it is unsafe to charge the disposable battery. If you don't use the equipment for a long time, please take the batteries out (otherwise will cause the batteries leak liquid and damage the PCB-board.).

2. Power on & Power off

Put in the batteries, the PDT-2E-E can be turned on and display the main menu. The middle red button at the bottom is the power button, for

switching on & off. Turn off the PDT-2E-E, PDT-2E-E can retain the current state, when rebooting, it will display the same state before shutdown.

3. Keyboard Using

PDT-2E-E totally holds 22 buttons, is divided into 4 parts:

- (1) Start from the top row: the middle yellow button is **【SCAN】** key, the left key is **【ENT】** key, often as the **【OK】** button, the right key is **【ESC】**, often as the **【CANCEL】** or **【EXIT】** button.
- (2) The second row are **【←】【→】【↑】【↓】** arrow keys, sometimes can be used as **【F1】【F2】【F3】【F4】** key.
- (3) Row 3-5 are **【NUMBER】** keys and. When switching the input method, these **【NUMBER】** keys can also be used to input letters. **【DEL】** is delete key,
- (4) The last row is function keys: **【SW】** is switch language key, **【POWER】** key to switch power, **【☀】** is a button for switching back-light.

4. USB wireless base station

USB wireless base station is a PC-side device of the barcode scanner, for receiving the barcode data which send by the PDT-2E-E, and sending the barcode data to the PC through the USB port. USB wireless base station is USB plug and play device, the emulation keyboard mode don't need to install any driver. There is an antenna jack in the back of a wireless base station, before USB accessing, you should confirm that 433M special antenna has be installed. The wireless base station is powered through the USB port. After USB is connected, the red LED light on the base panel will flash, this means the wireless base station is working properly. By observing the LED blink, you can determine the current state of wireless communications, which combines some detail in

the back of the PDT-2E-E functions.

Each wireless base station has a radio channel number (also called wireless channel number), while using different wireless base stations at the same time must ensure that the wireless channels are different.

Wireless base stations can be used after the pairing with the corresponding use of PDT-2E-E is successful. The PDT-2E-E and wireless base stations have been set paired by our factory, so they can be used directly.

5. Anomalies and Reset



If there is no response to the situation of the PDT-2E-E keypad or unexpected failures occur suddenly. There are two solutions:


- Poke the reset hole at the back of the device, the PDT-2E-E will be forced to reset.
- Take out the batteries for 10 seconds before loading. Wait 10 seconds to make sure the internal fully discharged.

If the wireless base station's indicator is not flash, it could be a bad contact, or other USB problems, then just unplug the PC side USB connector back into the USB port and for a re-inserted.

III. Operation Details

Following will combine the PDT-2E-E operate interface to describe the using of PDT-2E-E wireless barcode terminal.

The top column is the status bar,  means current wireless channel number is 1,  shows wireless signal strength, the

greater distance, the lower wireless signal strength. No signal means communication is not connected. Handheld terminals can connect to the wireless base station automatically every 2 seconds.  shows battery's power status, more black parts means more power.

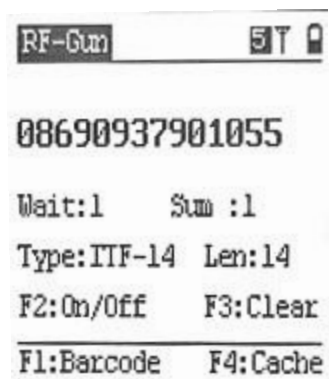
Determine the state of wireless communications:

After the wireless base station is powered on, the first 2 seconds, the red light flashes quickly and consecutively, indicates the wireless base station is searching a request which is configured; if can't find this request, wireless base station will enter the normal communications state; otherwise, it will enter the configuration state. In normal communication state there are two cases:

- (1) When there is no contact between PDT-2E-E and wireless base station, the indicator light flashes for 0.5 seconds every 3 seconds for a long time;
- (2) If there is contact on the PDT-2E-E and wireless base station, the indicator light flashes for 0.1 seconds every 2 seconds for a short time.

It is easy to distinguish whether the situation connected or not. If the indicator does not light, it may not be insert the USB interface or wireless base station has been broken.

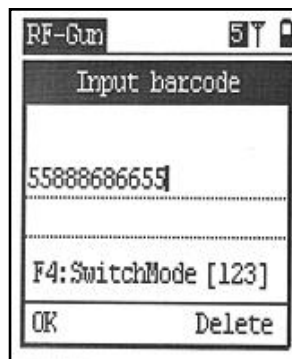
1. Wireless Scanner Mode (Real-time transmission mode)



Wireless scanner mode function is as same as the traditional wireless scanners, which can scan the barcode and immediately transfer to the computer. Right picture shows the screen into the feature. Blow the status bar, it displays the scanned barcode, the maximum allowable value to display is 2 lines of 40 characters.

Since wireless communication is always instable, in order to avoid occasional communication disruptions, PDT-2E-E wireless barcode scanner can collect the barcode and automatically cached. A maximum of about 1000 barcodes can be cached, depending on the length of barcodes. After communication is restored, the PDT-2E-E will automatically send the cached barcode to the base station. Under the barcode panel, the number behind "Wait:" means the number of bar codes in the current cache list; that behind "Sum:" indicates the total number of bar codes that have been scanned.

In practice, because the barcodes are not standardized or defaced printing, often make devices unable to identify the barcode. In the past, this situation may cause the barcode can not be recorded. But the PDT-2E-E with keyboard and screen, allow you to input these barcodes manually as the follow steps:



Press **【F1】** to enter the manual state as what the right picture show, or press number keys also can enter the input state directly. There are three manual input modes: numbers, lowercase letters and uppercase letters. The current input mode shows at the area under the barcode panel. [123] means digital mode, [abc] means lowercase mode, [ABC] is the uppercase mode. Press **【SW】** key to switch input mode. If you input error characters carelessly, press **【DEL】** (delete key) to delete, and press

【ENT】 key to finish the input. Press 【ESC】 to cancel.

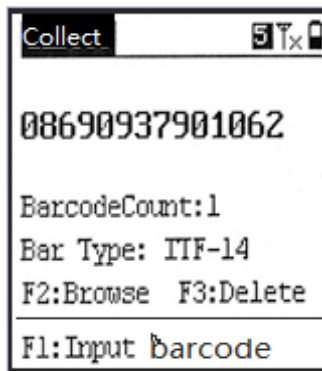
2. Barcode Collecting Mode (Batch scan and bulk transmission)

This mode is a non-real-time transfer data mode, and close to the traditional inventories which send the barcode after the end of mass collection, users can choose to export wireless directly. All of the scanned barcode are stored in scan order in FLASH memory; even power-down won't cause data loss. The first picture on the right shows the barcode capture mode screen. Barcode capture mode suitable for those large scanning range or a number of bar code applications. Many applications do not require the actual real-time barcode data transmission. All the scans were done, once send all the barcode data to the computer.

(1) **Scan barcode:** screen show as the right picture,

(2) **Browse:** check collect bar code list,

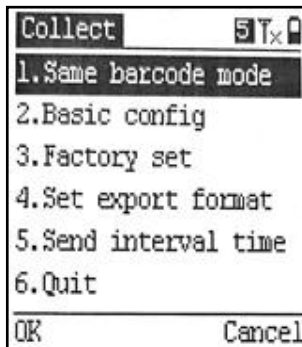
(3) **Wireless send:** select this, the collected barcodes will be sent automatically by wireless. They format can be customized, such as barcode + new line, or barcode + two new lines etc. And the format will be set in parameter setting of export format. Please prepare all the receiving programs at the computer terminal before wireless sending.



Common receiving application is EXCEL or NOTEPAD. Open notepad program in WINDOWS, select 【start】 - 【all program】 - 【enclosure】 , also can create an empty text file on the desktop and double-click open.

(4) **Clear data:** empty the collected data before a new collection.

(5) **Settings:**



1. Same barcode mode

- (1)、Skip when barcode repeat,
- (2)、Prompt to save or skip when scanning the repeat barcode value.
- (3)、forbid to scan repeat barcode.

2. Basic Config

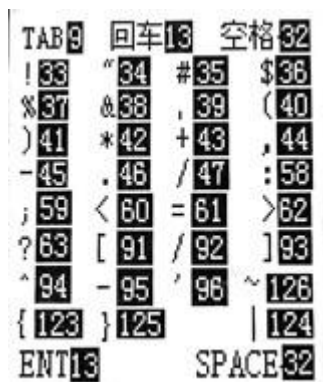
Users can be configured to select a single library or multi-library. PDT-2E-E maximum support 32 libraries, and can define the library-names under multi-library mode. “Max bar len” is setting the scan barcode max length, default value is 30. General should set the length value bigger 2 than actual collect barcode, like the longest barcode is 33 bit and record length should be set to 35 bit, the smaller record length, the more barcodes will be saved in to device. **(The default access password is ‘13579’)**

3. Restore factory settings

Select this will empty all the users’ data in this device, and reload system in a few second.

4. Set export format

Set the format of wireless transmission and export to data function. Under normal conditions, the default format of wireless transmission to computer is barcode + ‘return’. But some special applications may be required 2 ‘return’ or add all kinds of special characters, this complicated output



format can set by barcode export format. Setting format examples as follows: ‘B’ means barcode , ‘A’ means the device number (device address, set in wireless settings), ‘N’ means quantity (quantity only valid for inventory mode), dot char is separator, ‘1-127’ are characters’ value of ASCII. Such as the default setting: **B.13.10** means output is ‘barcode + Enter new line’, **B.13.13** means add 2 ‘return’ after barcode; **A.58.B.13.10** means output is device number +’:’ +bar code + Enter new line, 58 is ASCII code value of ‘:’; **126.B.126.13** means output ~barcode~ + carriage return, 126 is ASCII code value of ‘~’. Common ASCII code value show as above picture (in the help menu of barcode setting can find these common use ASCII code value)

5. Set interval time

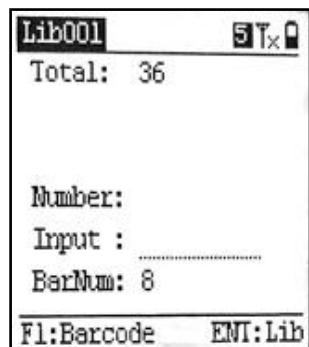
The time interval of wireless transmit barcode can be modified. For adapt to the requests of some applications, if input interval time value 9999, device will only send one barcode each time after user press one key, and the whole uploading process will completely enter manual control.

3. **Inventory (no names) Mode**

Inventory mode is a simple inventory mode, only collect barcodes and quantities, without the items’ name. The maximum number of saving is 10,000 records in each library.

(1) **Inventory**

After users had finished scan one barcode, the corresponding number (quantity value) of barcodes will auto plus one or you can modify it by press digit key to input new number



value manual.

(2) Browse

You can see a list of all libraries, select one library by up/down key and press 'M1' key, there are barcodes in current library.

(3) Wireless send

Send the collect barcodes and quantities to computer by wireless. The sending format can set in export data format.

(4) Clear data

Clear inventory data, before start a new inventory, please clear the original inventory data stored.

(5) Setting

Most parameter settings is same as the 'Barcode Capture Mode' (**default password is '13579'**).

The default export format of inventory is 'B.44.N.13.10': expression barcode + comma + Enter new line. 'N' is quantity, '44' is ASCII value of comma. Like the middle separator is TAB, the set as B.9.N.13.10, '9' is ASCII value of TAB.

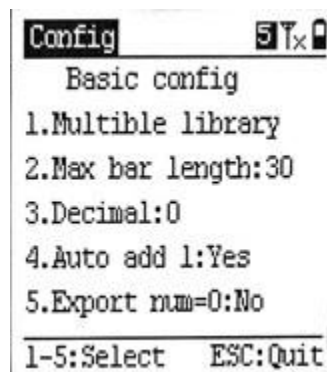
① Multiple library

Configuration can choose single library mode or multi-library mode, when choose multi-library mode, last one of inventory main menu will increase a (manager library) menu item.

② Max bar length

The default scan barcode max length is 30.

PDT-2E-E 13 / 20



In general, it should set the length value large 2 than actual collect barcode.

③ **Decimal**

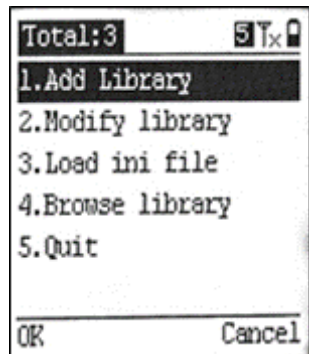
Decimal digits for quantities value, it can be choose among 0-4, maximum support 4 decimals.

④ **Auto Add 1**

When scan barcode, quantity auto add 1.

Manager Library

When choose multi-library mode, then multi-library menu item would be showed. Users can add and input library name manually, check library information. Inventory mode maximum support 32 libraries, when not loaded name or manually enter the library name, the default digital value is 32 for the library, the library name number 1-32, each library name occupation one line, the library name should better control within 12 characters.



4. System Configuration

Attention: enter into some important setting items need to input password, default password is ‘13579’.

(1). System settings

Include barcode setting, wireless settings, etc. (it will be described in the following paragraphs)

(2). Charge

If you use NiMH rechargeable battery, you can charge it by the function.

(3). Update application

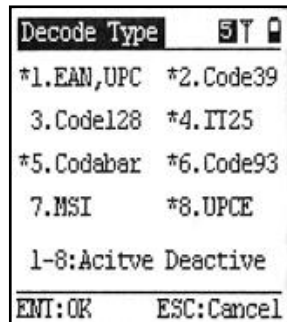
Users could update its application program through USB or Wireless, and special PC port and USB driver is needed.

Introduction of System Setting:

(1) **Barcode setting:** include ‘Decode type’ setting, ‘Decode option’ setting, ‘RF-Gun Export’ format setting, ‘Collect Export’ format setting, ‘Inventory export’ format setting, ‘Barcode length setting’ and ‘ASCII help’ menu, please reference Setting export data format of barcode capture mode for the export format setting .

● Decode type setting

Decode type setting is used for setting need support barcode type of terminal. Barcodes used in many industries are fixed, for scanner, decode type less need, decode speed more quick, veracity higher. Right picture is screen of barcode type settings, the barcode



type with ‘*’ in the picture express these type decodes are activated, barcode type without ‘*’ expresses decodes are forbidden. As shown in the right picture, MSI without ‘*’ in front, expresses these barcodes cannot be decoded , press corresponding number key can switch decode ON/OFF, after completing setting, press **ENT** key to save.

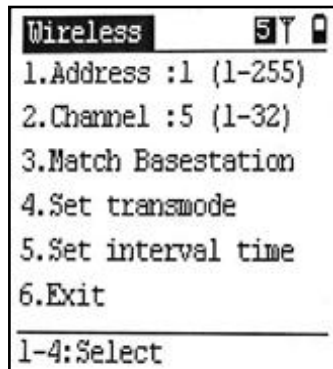
● Barcode length setting

Effective barcode length allow output barcode length: default is **1-50**, show any length (PDT-2E-E wireless scanning mode maximum

support 50 place barcodes) user can set single, multi or multi-group range effective barcode length, such as inputting 13 means only allow the barcode whose length value 13 output, 8.13.15 expresses only allow 8, 13 and 15 barcode length output, 15-18 means allowed barcode length are '15, 16, 17, 18'. 8.10.13-16 expresses only '8, 10, 13, 14, 15, 16' barcode length can be output.

(2) **Wireless setting:** wireless communication configuration includes setting address, channel and base station configuration.

The address range is 1-255, if many devices use in a same place and use the same channel setting, their addresses must be set as different values, otherwise it will result in receive and dispatch chaos. The channel value is 1-32, different wireless channels mean communication frequencies are different, so multiple wireless channel devices in the same place could be used meanwhile and non-interfering.



PDT-2E-E and wireless base station must be matched, the paired principle is: 1 wireless base station supports multiple PDT-2E-E at the same time, but address cannot be same for one base station, one base station uses one different channel value.

The paired method of PDT-2E-E and base station



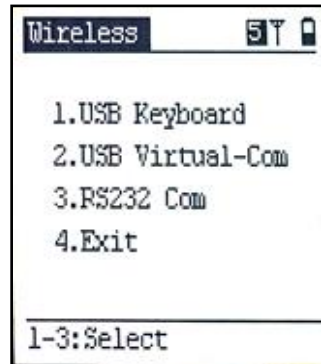
- a. switch off wireless base station (disconnect the USB cable)
- b. set the address and channel on PDT-2E-E.
- c. **connect** wireless base station (connect USB), normally, the screen will display a reminder of the base station was found. At this time press 'ENT' key and can pair to wireless base station, save configuration information to wireless base station, that you needn't to pair them again in the future. Only when you change wireless channel of PDT-2E-E, you need to pair again.

Set base station transmission mode

Currently, there are 3 transmission modes between the base station and computer.

- USB keyboard mode
- USB virtual com mode
- RS232 com (hardware serial port) mode

Default is USB keyboard mode, RS232 com is used for specific software and equipment, also it's suitable for using in two-way data transmission.



(3)Auto off time: Set auto power-off time, default is 180 seconds, this means auto shutdown in operation in 3 minutes, user can set the range within 10-600 seconds.

(4)Volume set: Set buzzer volume, range is 1-5, none means mute.

[Thanks for your trust and buy our products.](#)