

User's Manual

Portable Data Collector

BCP Series



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1. Introduction

BCP are a compact-sized, battery-operated, hand-held portable memory middle range CCD or laser diode barcode scanners. The device equips with great shape LCD display and tactile triple-key for data editing and navigation. The bundled utility and built-in application programs make it easy to use and provide best solutions to various data collecting applications such as warehouse management, attendance tracking, and inventory taking.

1.1 Features

- Competitive price, outstanding performance, superior quality
- Battery operated and easy replacement
- Hardware password protection
- Two-in-one connectivity: USB or RS-232
- 224KB flash memory stores up to 10,000 records of 15-character barcode and 6-bit timestamp
- Portable or tethered
- Data retained even if battery removed
- Dual-color LED for operation and charging status indications
- Low battery, memory near full and memory full warnings
- All scans are time stamped
- Only valid scans are logged
- Easy-to-use upload, configuration and pre-defined jobs utility

1.2 Unpacking

Standard Package

- BCP unit X 1
- USB interface (charge/communicate) cable X 1
- Utility driver CD X 1
- User's manual X 1

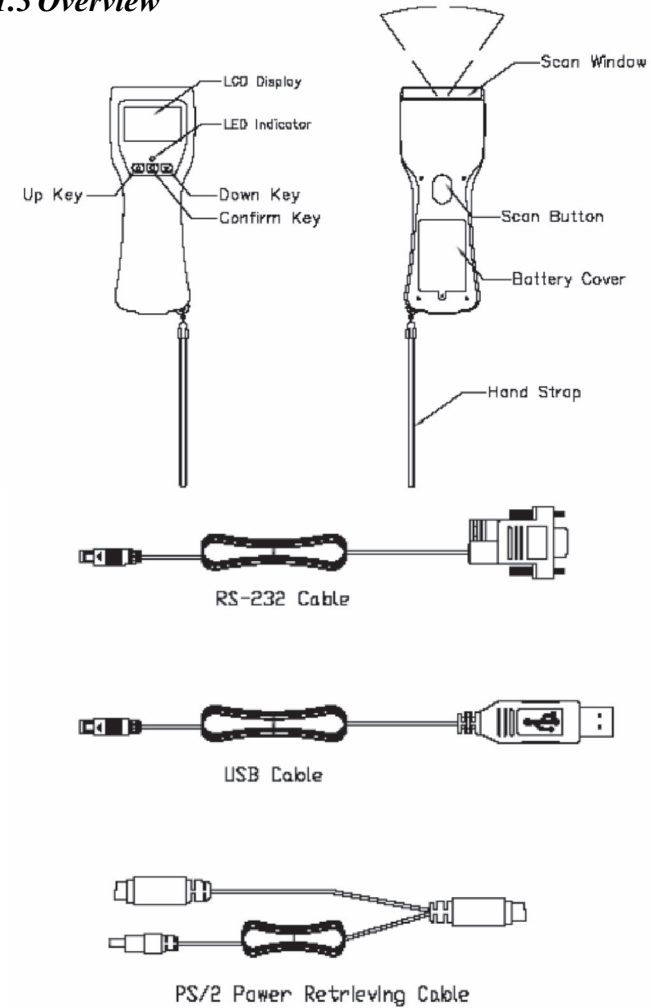
Option

- RS-232 interface (charge/communicate) cable
- Power adaptor 110V or 220V
- PS/2 power retrieving cable

Note:

- The contents may vary with different options.
- If there's any physical damage or missing parts, please contact your supplier immediately.
- Please keep all packing material as it should be used when you need to ship back BCP device for service.

1.3 Overview



2. Battery Care

Each BCP unit has been charged at the factory, but getting the battery fully charged before the first use is strongly recommended.

2.1 Recharge

The BCP unit can be charged via USB cable and RS-232 cable. Please follow the steps accordingly. The scanner can work as usual in charging mode.

2.1.1 Via USB cable

- Plug the mini USB connector of the cable into the mini USB port of the BCP unit, and connect the USB A type connector of the cable to PC USB port.
- When the BCP unit's RED LED blinks, press the scan button over 5 seconds till the RED LED turns steady while the Green LED blinks intermittently. Thus the BCP unit gets into charging mode.
- Full recharge takes around 2 hours from low battery status. The GREEN LED will turn steady after the BCP unit is fully charged.

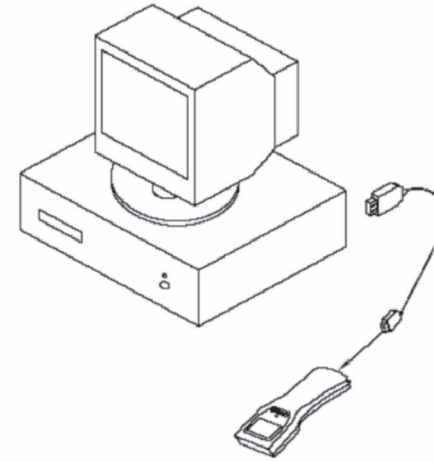


Fig. 1 Charged via USB Cable

2.1.2 Via RS-232 cable (Option)

- Turn off the computer.
- Plug the mini USB connector of the cable into the BCP unit's mini USB port, and connect the DB9 connector to RS-232 port of the cable to PC RS-232 port.
- Connect the DC plug of external power adapter or PS/2 power retrieving cable to the DC jack located at DB9 connector.
- Turn on the computer. (for PS/2 power retrieving cable only)

- When the BCP unit's RED LED blinks, press the scan button over 5 seconds till the RED LED turns steady with the Green LED blinks intermittently. Thus the BCP unit gets into charging mode.
- Full recharge takes around 2 hours from low battery status. The GREEN LED will turn steady after the BCP unit is fully charged.

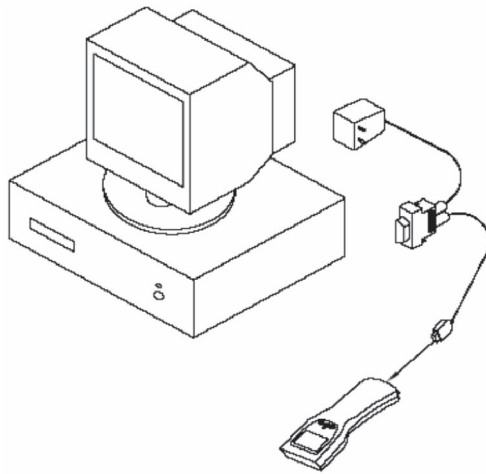


Fig. 2 Charged via RS-232 cable with power adaptor

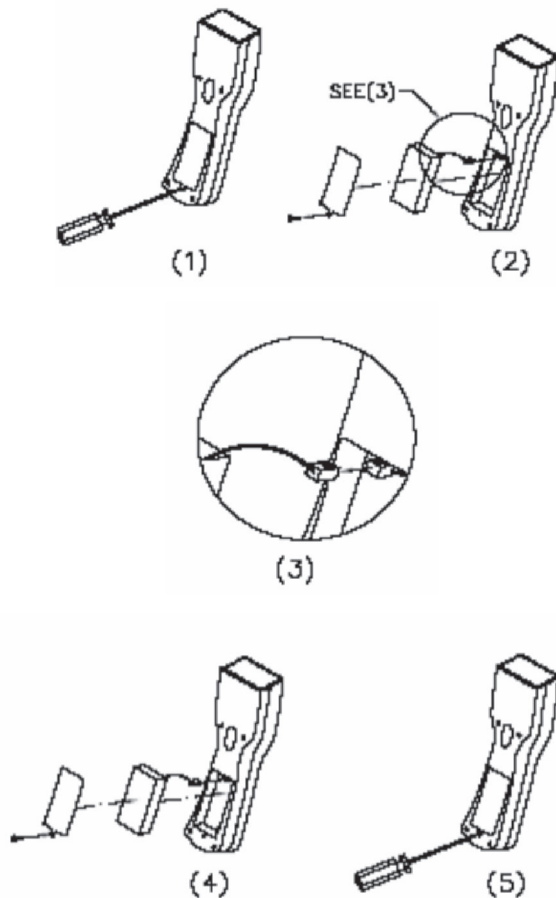
2.2 Low Battery Warning

When the battery power drops low, the BCP unit beeps twice in response to a scan press. About 50~100 scans can be made after the warning. Get the BCP unit charged immediately as the warning appears. If the BCP unit is not charged and the battery power keeps dropping to some extent, the Real Time Clock will be turned off and all settings will return to the default values.

2.3 Replace Battery

In case you need to replace the battery on your own, follow the steps below.

- Loosen the battery cover screw and remove the cover.
- Pull out the battery's cable header from the connector's cap.
- Put a new battery specified for BCP into the cell and insert its cable header into the connector's cap.
- Replace the cover and tighten the screw.



3. Get Started

3.1 Scan & Store Data

3.1.1 Turn on

Press the scan button for 3 seconds to turn on the device. The green LED will flash twice and the display LCD will display.



3.1.2 Turn Off

Press the scan button for 5 seconds to turn off the device. The green LED will flash twice and the display LCD will go blank.





3.1.3 Scan Data

Press the scan button, and a red light emits with the press. Aim the red scan light at the barcode to scan. A beep with flashing green LED indicates a successful scan. **Note that the BCP unit only makes scans with the LCD turning on.** If the scan button is pressed for 2 seconds without a successful reading, the red scan light will turn off to save power consumption. Press the scan button and aim at a barcode to scan again.




3.1.4 Review Data





Press  and  to scroll up and down for data reviewing.

3.1.5 Delete Data

Press  while navigating to a record that needs to be erased. When the "Delete?" line shows on the screen, press   keys together to delete the designated record, or press  to quit the mode. Please note the deleted record will be kept in the memory with a line "Data-Deleted!!!" and it won't be uploaded to your PC.

3.1.6 Enter Numbers

Number entering is required at job mode 1 (e.g. enter a Q'ty). When you need to enter numbers, press the  key continuously till the Arabic numeral 0~9 rotates to the assigned number. The input number begins with higher order digits. Press  to shift to the next number. Then press  to finish the number entering and the scanner is ready for the next scan.

For example, if you want to enter "75", press  till the number rotates to 7. Press  to shift to the next number; then press  again till the number rotates to 5. Press  to finish the key-in.

3.2 Memory near Full & Memory Full Warning

3.2.1 Memory near Full Warning

When the internal memory is near full (available memory under 4 KB), in response to a barcode scanning, the green and red LED blinks in turn, and a short beep follows a normal scan beep. Upload and erase data in the BCP unit as soon as the warning is given. (Refer to Section 4.4.4 **Upload Data to PC and Erase Data in BCP**)

3.2.2 Memory Full Warning

When the memory is full, the red LED turns steady on and the BCP unit emits continuous beeps on pressing the scan button. Scanning barcodes, reviewing and deleting data are not available at this state. Uploading and erasing data in the BCP unit are required to make the scanner rework. (Refer to Section 4.4.4 **Upload Data From BCP and Erase Data in BCP**)

4. Communication/Utility

4.1 Installing BCP

To download an application or setting to the BCP unit or upload data from the unit, follow the steps below to connect the BCP unit to your PC. Once the BCP unit is connected to the PC, the red LED will keep blinking.

4.1.1 Via USB Cable

- Turn off your PC.
- Connect the mini USB end of the USB cable to your BCP unit.
- Connect the USB-A male end of the cable to a free USB port on your PC.
- Turn on your PC.

4.1.2 Via RS-232 Cable

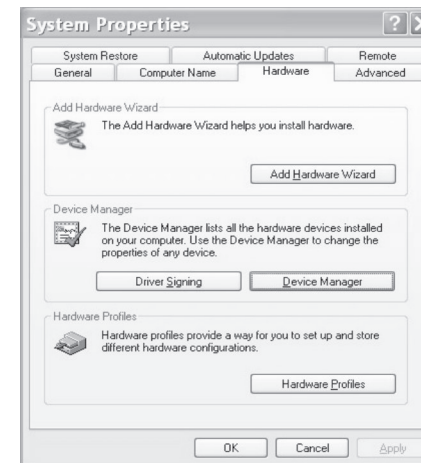
- Turn off your PC.
- Connect the mini USB end of the RS-232 cable to the BCP unit.
- Connect the DB9F end of the cable to a free serial port on your PC. Plug the A/C adapter into the power jack and into an electrical outlet.
- Turn on your PC.

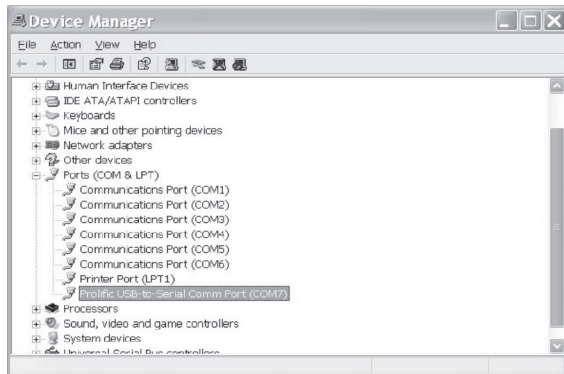
4.2 Installing Utility & USB Driver

Insert the bundled Utility/driver CD into an available CD-ROM on your PC. Windows will prompt you to install a device driver for the newly detected hardware when you plug in the USB interface cable to your host PC for the first time. Specify the path to the USB Driver folder and Windows will complete the driver installation in a few seconds. You only need to install the device once.

4.3 Login

USB driver assigns a virtual serial port for communications. Execute **Start > Control Panel > System > Hardware > Device Manager > Ports (Com & LPT)** will lead you to identify the port number.





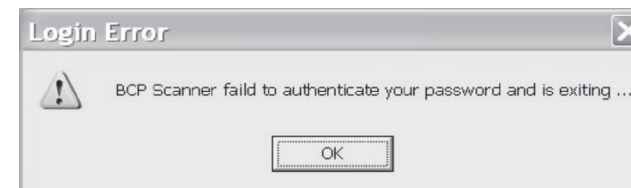
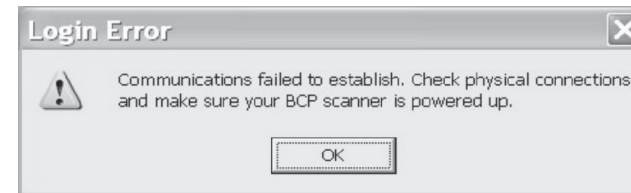
Select the Comm Port accordingly and enter your password. On the first access simply press OK to log in since no default password is set.



Possible errors:

If the Login Error box pops up, check the items below.

- Is the BCP unit connected properly to your PC?
- Is the Comm Port properly assigned?
- Is the BCP unit powered up?
- Is the record input completed (e.g. Q'ty has been entered)?



Press the OK button to close the Login Error box. Select the correct Comm port and/or reenter a valid password to log in again. Note the password is case sensitive. See also "Change Password" section in 4.4.4.

4.4 Main Menu

Note that all setting changes you made are stored in the cache of the utility. You have to download the new settings to the BCP unit by running Transmit in the Transmit submenu while you make any changes.

4.4.1 File

File menu contains 4 items: Default, Open, Save, and Exit

Default

Reset all configurable parameters to factory default Values.

Open

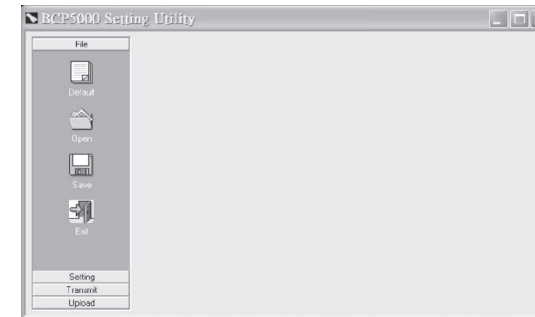
Open the existing configuration file.

Save

Save current settings to file.

Exit

Exit and close the utility.

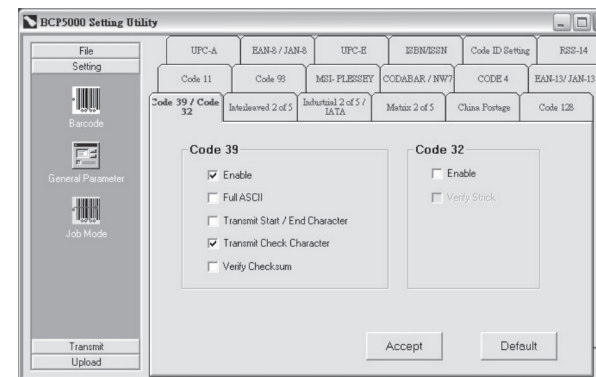


4.4.2 Setting

Setting menu contains 4 items: Barcode, General Parameter, and Job Mode.

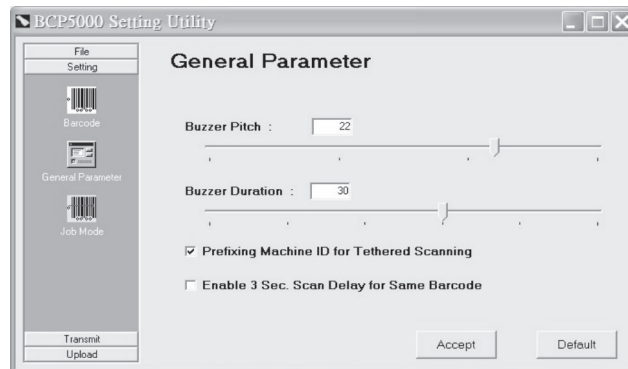
Barcode

Click this item to enable/disable barcode symbologies and to configure each symbology according to your applications.



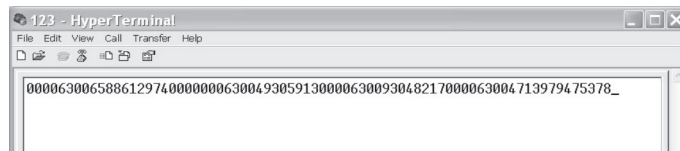
General Parameter

Click this item to set Buzzer pitch and Duration. Higher value means higher pitch and/or longer duration.



- Prefixing machine ID for Tethered Scanning

Select this item to enable/disable prefixing scanned barcodes with Machine ID when the BCP unit is tethered to your PC. This option is useful to distinguish one BCP unit from another while multiple units are attached to the same host terminal. (See also Section 5. On-line/Tethered Mode)

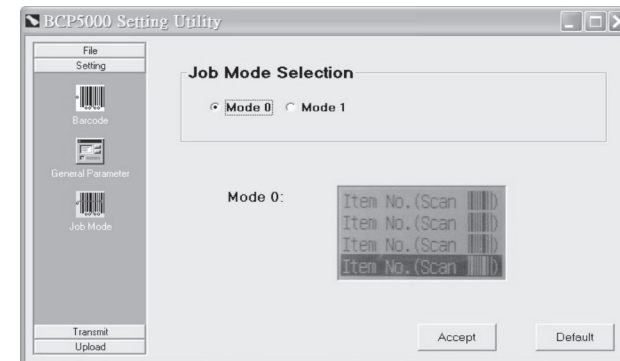


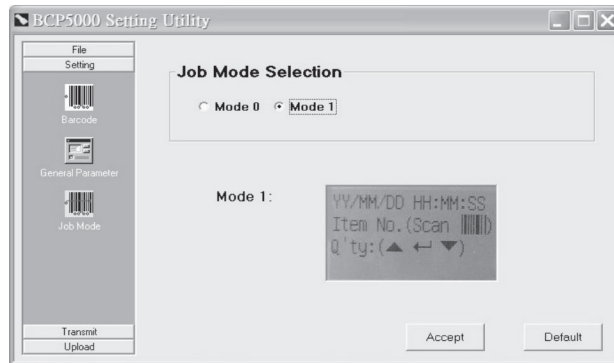
- Enable 3 Sec. Scan Delay for Same Barcode

This option helps you prevent accidental scan of the same barcode twice. Once the function is on, you need to wait 3 seconds to scan an identical barcode again. The 3 sec. delay only applies to scanning exactly the same barcode. You can scan different barcodes smoothly without delay.

Job Mode

BCP provides 2 Job Modes for various applications. Each Job Mode corresponds to a format shown on the BCP unit's LCD display. For example, at Mode 0 the scanner's screen shows 4 barcodes, while at Mode 1 the screen shows one barcode with Time and Q'ty. Appoint a Job Mode and click **Accept** to switch to the new mode.



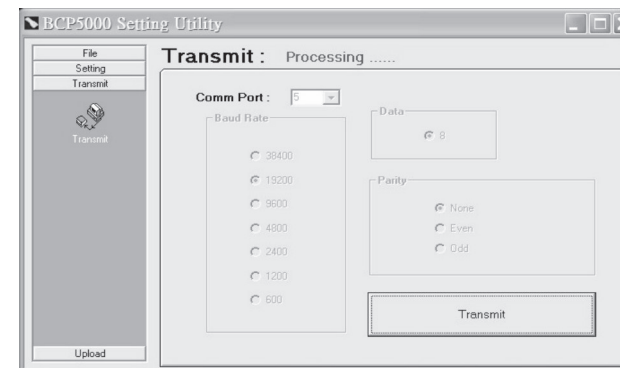


The following 7 Job Modes are additional options which are available if required. Also, we would like to provide technical support to develop new job modes for individual requirement.

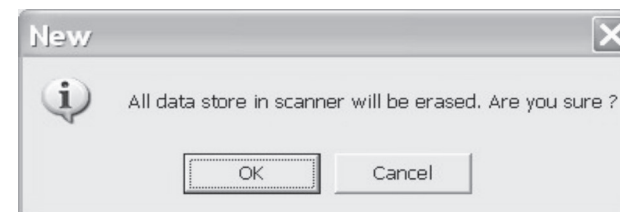
Item No. (Scan) Q'ty: (▲ ◀ ▶ ▼) Site (Scan)	YY/MM/DD HH:MM:SS Item No. (Scan) Site (Scan)	Item No. (Scan)
YY/MM/DD HH:MM:SS Item No. (Scan) YY/MM/DD HH:MM:SS Item No. (Scan)	YY/MM/DD HH:MM:SS Item No. (Scan)	Item No. (Scan) Item No. (Scan)
YY/MM/DD HH:MM:SS Item No. (Scan) Q'ty: (▲ ◀ ▶ ▼)		

4.4.3 Transmit

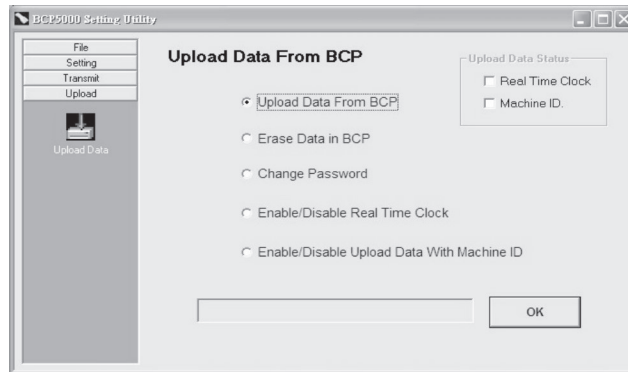
Click Transmit after you finish any setting changes to download the new settings to the BCP unit. Unplug the USB cable from the BCP unit and plug it into the unit again. **If Transmit is not executed, the new settings won't be saved in the BCP unit.**



After clicking the Transmit button, a box pops up to remind you that all data store in scanner will be erased. Back up the needed data first.

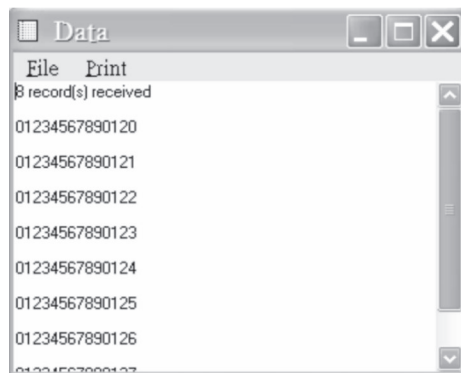


4.4.4 Upload



- Upload Data From BCP

Select this item to upload the data stored in the BCP unit to your host PC. A notepad window containing the uploaded data will pop up for you to view, edit, print, or save to file.



- Erase Data in BCP

Select this item to erase/delete all data stored in the BCP unit. Note that the erased data cannot be recovered. Back up the needed data first.

- Change Password

Fill in the blanks accordingly. The password contains up to 8 alphanumeric characters, including lower-case a ~ z, upper case A ~ Z, and 0 ~ 9. The password would be changed only after the current password is verified.

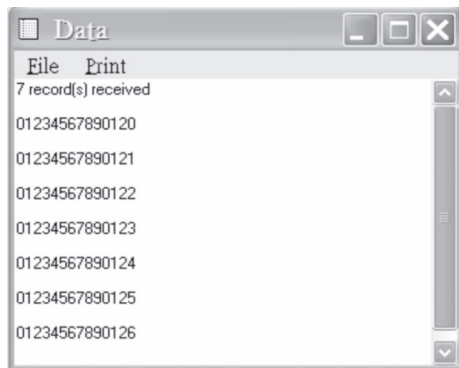
Note that there's no default password. While setting up a password for the first time, leave the Current Password field blank, and fill in the New Password field and the Confirm New Password field directly.



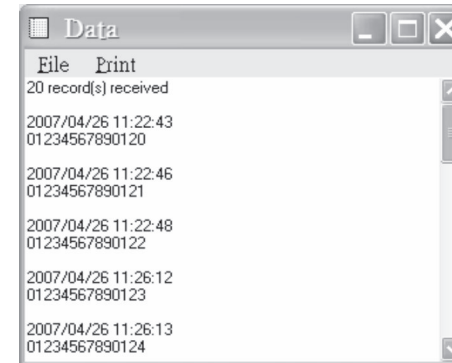
- Enable/Disable Real Time Clock

The date and time of a successful scan are logged in the BCP unit. This item allows you to include/exclude the timestamp to be displayed in the output window of the upload operation.

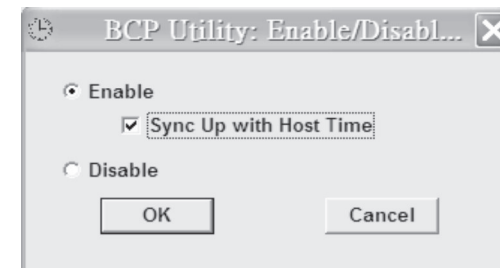
When **Disable** is selected, each record in the upload output window will not be time stamped.



When **Enable** is selected, each record in the upload output window will be prefixed with the date and time of the scan. Note that the real time clock in the BCP unit is not initialized at factory. You will need to do it by selecting the sync-up option when you first enable the RTC. Also note that you need to reinitialize the RTC each time a new battery is installed.



When RTC is enabled, a timestamp in the format of Year/Month/Day Hour : Minute : Second (e.g., 2007/04/26 11:22:43) will show before each data record.



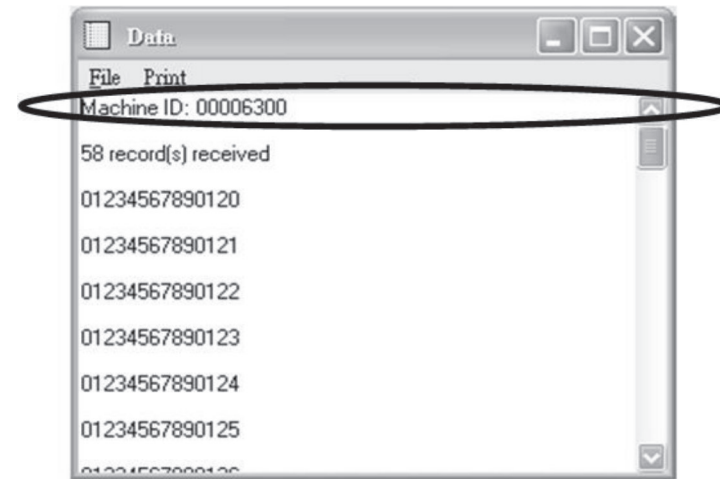
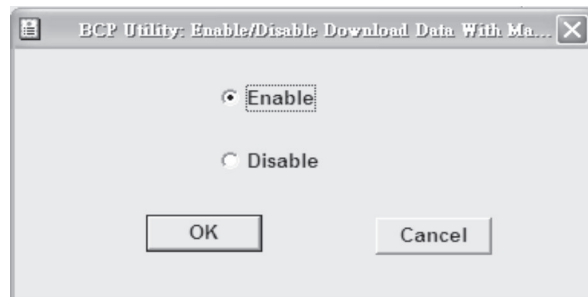
- Enable/Disable Uploaded Data with Machine ID

Each BCP unit comes with a unique Machine ID (an eight-digit number) from factory. The Machine ID is stored inside

the firmware and cannot be modified without removing the IC. This menu item allows you to include/exclude the Machine ID to be displayed in the output window of the upload operation for identification purpose. This option is useful when multiple BCP units are being used to collectively capture barcode data.

Machine ID tagging with real-time data (tethered scanning) is associated with each single record (Refer to "Prefixing machine ID for Tethered Scanning" Section in 4.2.2), while Machine ID tagging with batch data uploaded from BCP memory pertains to the entire data file (as Fig. 3).

Fig. 3

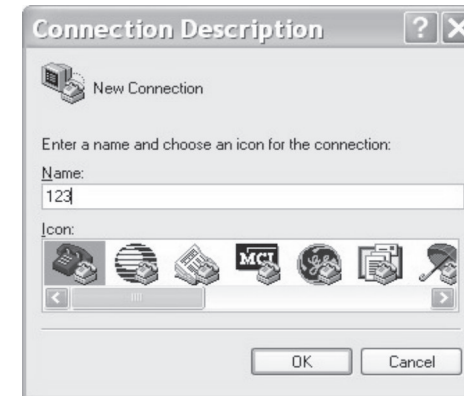


5. On-line/Tethered Mode

BCP enables On-line/Tethered mode. At this mode, the scanned data shows on the "Hyper Terminal" window on your host PC simultaneously with every scanning, which allows immediate reviewing. The scanned data is stored in the BCP unit as well. **Note that the utility cannot be operated at this mode.**

Follow the steps below.

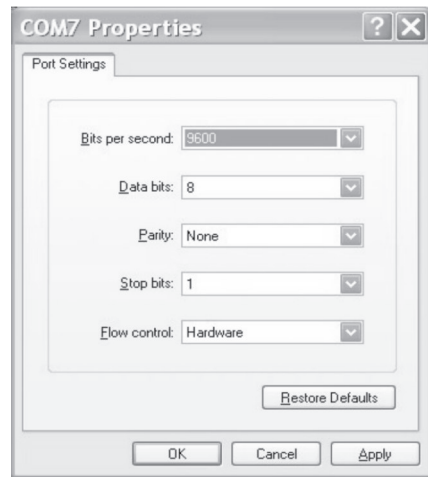
- Run BCP Setting Utility. Execute Default to set all configurable parameters to factory default values and execute Transmit to save the setting in the BCP unit.
- Unplug the USB cable from the BCP unit and plug it into the unit again.
- Connect the BCP unit to your host PC. (Refer to 4.1.1)
- Execute : **Start > All Programs > Accessories > Communications > Hyper Terminal**
- Enter a name, select the first icon, and press **OK**.



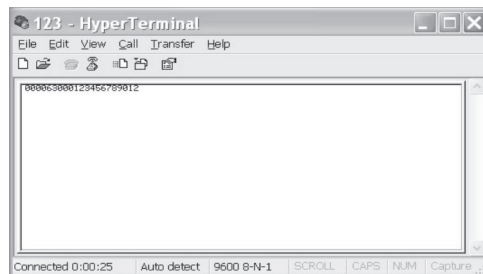
- Select the Comm Port accordingly and press **OK**. (Refer to Section 4.3 on how to identify the port number)
- Set Bits per second to **9600**, Data bits to **8**. Parity to



None, Stop bits to **1**, Flow control to **Hardware**. Then press **OK** to finish the setting.



- Scan a barcode and the barcode will show on the window simultaneously for you to view, edit, print, and save to file.



6. Specifications

Operation

- **Nominal Scan Rate** 100 scans/sec.
- **Wavelength** 660nm \pm 10nm for CCD model
670nm \pm 10nm for Laser model
- **Maximum Pitch** $\pm 65^\circ$
- **Minimum Skew** $\pm 50^\circ$
- **Minimum Bar Width** 4 mil
- **Scan Pattern** Single scan line
- **Indicator** Buzzer and LED
- **Buffer Capacity** 224KB for data retention
- **Triple Key** Shift, Confirm, Count
- **Display** LCD graphic 128x64 dot-matrix panel with back-light
16 character x 4 line,
8x16 dot display pattern
- **Communication Cable** USB cable or RS-232 cable
- **Readable Bar Code** EAN, UPC, I 2 of 5, Codabar, Code 39, Code 128, China Postage, Code 32, Code 11, MSI-Plessy, Code 4, RSS Codes

Electrical

- **Working Voltage** 3.2V to 4.2V
- **Power Consumption** Scanner operating with LCD and back-light on: 210mA
Scanner sleep with LCD on: 2.5mA
Scanner sleep with LCD off: 2mA
- **Power Consumption** Scanner operating with LCD and back-light on: 140mA
Scanner sleep with LCD on: 2.5mA
Scanner sleep with LCD off: 2mA

Battery

- **Battery Type** Lithium-Ion
- **Battery Capacity** 600mAh good for 30,000 scans per recharge
- **Charge** By USB cable or external power adapter
- **Time of Charge** About 2 hours

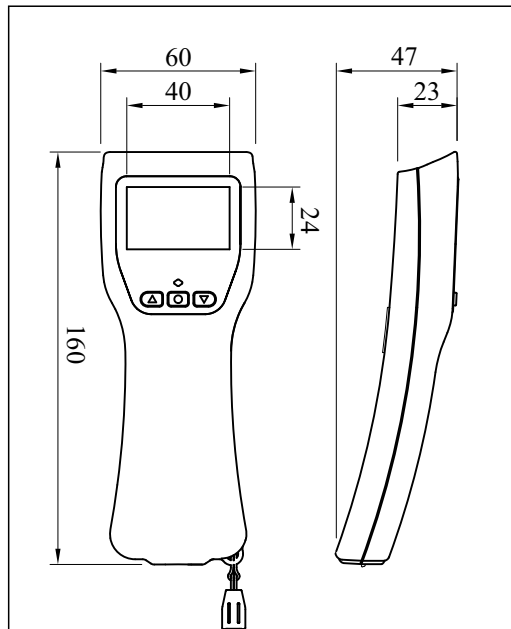
Software

- **Utility** Windows based programming and pre-defined jobs download utility
- **SDK** Up-load communication SDK

Operation Environment

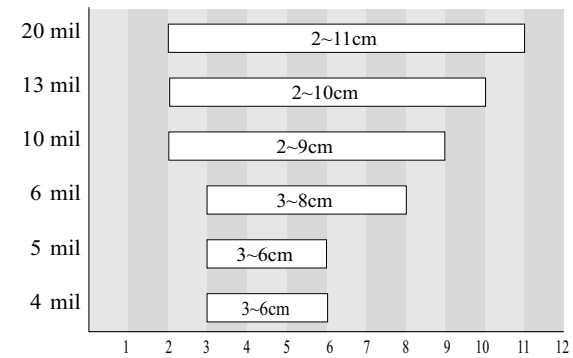
- **Operating Temperature** 0°C ~ +45°C (32°F ~ 113°F)
- **Storage Temperature** -20°C ~ +65°C (-18°F ~ 149°F)
- **Relative Humidity** 5% to 95% non-condensing
- **EMI** FCC class A
- **Ambient Light** 3,000 to 8,000 lux

Dimensions



Scan Zone (Based on 90%Code 39)

Scan Zone for BCP-5000



Scan Zone for BCP-4122

