

Mini Personal Data Collector



User's Manual

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Congratulations on your purchase of the super compact Mini Personal Data Collector (PDC) with LCD display. Along with superior portability and visually safe scanning LEDs, the PDC features a real-time clock, a buzzer, a dual-color status LED, and a UART port for direct connection to external equipment.

The on-board 32K EEPROM provides a robust, stable, programmable memory space. Some of this non-volatile memory is dedicated to storing scanned data. The PDC can retain more than 1000 records.

The Mini Personal Data Collector comes already programmed with a basic data collection program, called FREETASK, that can scan and store barcodes, and do simple edits on the stored data. Data can be uploaded to a PC through the RS-232 link cable.

WinTaskGen, a program on the included CD-ROM, can be used to create data collection programs (Tasks) for download and use with the PDC. A Task can have up to four data forms with up to 16 separate data fields per form.

For more advanced requirements, there are two libraries for developing programs under the Keil C environment: one is the hardware library (Z1060Lib.LIB), the other is a compressed database system (DBLite60). Contact your agent if you are interested in this approach.

Unpacking

The PDC package should contain:

- 1 ea. Mini Personal Data Collector



- 1 ea. DB-9(F) serial
Communication Cable



- 4 ea. VARTA 1/V40H NiMH
rechargeable batteries



- 1 ea Power Adapter



- 1 ea. CD-ROM support disk



- 1 ea. User's Manual (this book)



If any package contents are damaged or missing, please contact your dealer immediately.

Finding Your Way Around



Figure 1: The Mini Personal Data Collector

Battery Care

In the interests of providing the best product performance possible, the Mini Personal Data Collector comes with high quality, rechargeable Nickel Metal Hydride (NiMH) batteries and a Power Adapter. After NiMH batteries are installed, connect the Power Adapter cable and the batteries charge right in the unit.

Before you use new NiMH batteries for the first time you should charge them fully. Please note that new NiMH

batteries need to go through three to five charge-discharge cycles before they reach peak performance and capacity. The first several times that you use new NiMH batteries you may find that they discharge fairly quickly during use. This is normal until the batteries mature.

It is highly recommended that NiMH batteries always be operated until fully discharged before recharging. If you recharge NiMH batteries before they are fully discharged, they may develop a pattern of inhibited output.

Under favorable conditions, NiMH batteries can last through hundreds of recharges. You will get better performance if you keep battery teams together. Don't mix new and old batteries.

Note: If the PDC will remain unused for an extended period (two months or more) the batteries should be removed. Even when the PDC is turned off, there is a very small amount of power consumed, which can, over time, have a bad effect on batteries.

Installing Batteries



Figure 2: Inserting Batteries

1. Loosen the battery cover screw and remove the cover.
2. Insert four batteries according to the orientation in the picture: two with positive side up on the left, two with negative side up on the right.
3. Replace the cover and tighten the screw.

Charging Batteries



Warning! Use the Power Adapter with NiMH batteries **ONLY!** Connecting the Power Adapter with any other type of batteries in the PDC voids the warranty, ruins batteries, can burn up the Mini Personal Data Collector, and could possibly cause harm to persons or property!

You may use regular disposable alkaline cells to operate the PDC, but never mix NiMH with alkaline batteries, and never, never connect the Power Adapter when there are disposable (alkaline) batteries in the unit.

To charge NiMH batteries:

1. With NiMH rechargeable batteries (**ONLY!**) in the PDC unit, plug the Power Adapter connector into the socket on the side of the large end connector of the Communication Cable.
2. Plug the Power Adapter into an outlet. While charging, the LED on the PDC lights up red. The LED turns off when the batteries are fully charged. Charging takes 4 to 6 hours.

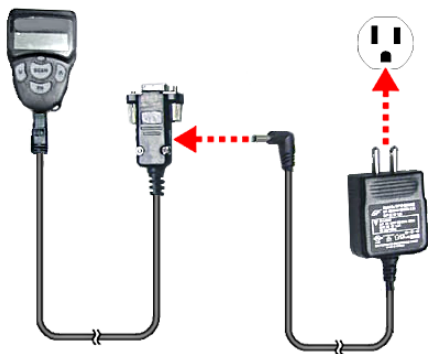


Figure 3: Connecting the Power Adapter

It is normal for the Power Adapter and the NiMH battery cells themselves to become warm during charging.

Note: If needed when NiMH batteries are low, the PDC may be operated with the Power Adapter connected. Never use the Power Adapter with any other type of batteries in the PDC unit!

Getting Started

The Mini Personal Data Collector comes already programmed with a basic data collection program, FREETASK, that can read and store barcodes, do simple edits, and upload data to a PC through the Communication Cable.

Scanning and Storing Data



1. **Turn on** the Mini Personal Data Collector by pressing the  and  keys together.



Figure 4: Turning On

2. The bootup (power on) screen appears.

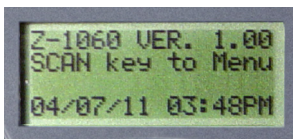


Figure 5: Bootup Screen

3. Press the **SCAN** key to go to the **Main Menu**.

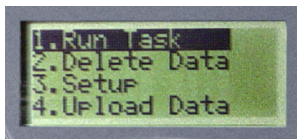








Figure 6: Main Menu

4. With **Run Task** selected, press the **SCAN** key. Display shows <Rec>, for record number, and is ready to scan a barcode.
5. Hold the Mini Personal Data Collector in front of the barcode to be scanned, press the **SCAN** key, and sweep the red light vertically across the barcode.



When the scan is successful, a short beep is emitted.

ted¹ and the LED indicator flashes green. While the  key is still depressed, the display shows the alphanumeric data scanned. When the  key is released, the display reverts to <Rec>, ready for the next scan. If the scan fails, the PDC remains silent, the LED gives a red flash, and the display reverts to <Rec> for the next try.

6. Continue adding scanned data by repeating step 4. The PDC can retain more than 1000 records.
7. To **review** stored data, press the  key.
8. To **end review** of stored data, press the  key.
9. To **exit scanning mode**, press the  key.
10. To **turn off** the Mini Personal Data Collector, press and hold . The screen goes blank; data is retained.

1. Depending on the Beep Volume setting (page 16).

Uploading Data to a PC

The PDC can communicate data to a PC using either WinTaskGen, the supplied software interface, or another RS-232 communications interface, such as HyperTerminal, which comes with Windows.

Communications settings are:



baud rate:	9600 bps
data bits:	8
parity:	none
stop bits:	1
flow control:	none

To upload data:

1. If not on already, **turn on** the computer.
2. **Connect** the PDC with a PC COM port using the supplied Communications Cable.



Figure 7: Communication Cable

3. **Turn on** the Mini Personal Data Collector by pressing the  and  keys together. (Actually, steps 1 through 3 may be done in any order.)

4. Run the desired communications software and upload data. See the following two sections for more detailed software instructions.

Uploading Data with WinTaskGen

WinTaskGen is provided on the CD that came with your PDC. With it you can upload data from the PDC to the computer, edit or create programs (tasks) for use with the PDC, download these tasks to the PDC, adjust the barcode filter for the PDC, setup the computer COM port, and adjust PDC settings such as the clock, beep volume, etc. Install WinTaskGen into your Windows environment from the supplied CD.

To **upload data** from the PDC to the computer:

1. Run WinTaskGen.
2. Use the supplied Communications Cable to connect the PDC to the computer.
3. **Turn on** the Mini Personal Data Collector by pressing the **[V]** and **[A]** keys together. The **boot up** screen appears.

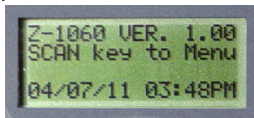


Figure 8: Bootup Screen

4. On the WinTaskGen toolbar, press the upload icon. The upload workspace appears.



5. Press the Connect button near the lower left corner.



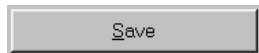
The PDC beeps twice.

6. Press the Upload button.












The PDC beeps once, and the data appears in the WinTaskGen workspace.

7. Save the data to file by pressing the Save button.



Uploading Data with HyperTerminal

HyperTerminal is an RS-232 communications program that comes with Windows. This example for **uploading data** is from Windows XP:

1. Use the supplied cable to connect the PDC to the PC COM port (e.g.: COM 1).
2. In Windows, go to Start > Programs > Accessories > Communications > HyperTerminal.
3. Set up a Connection Description name; pick an icon.
4. Make port settings as per Upload Data to a PC, above. When port settings are done, the HyperTerminal interface appears.
5. Turn on the PDC by pressing the  and  keys together.
6. Press the  key to go to the Main Menu.
7. Use  and  keys to select Upload Data, and press the  key. <Upload> shows on the screen.
8. Press the  key again. <Ready to upload!> appears.
9. Press the  key. The data uploads and appears in the HyperTerminal workspace.
10. To turn off the PDC, press and hold . The screen goes blank; data is retained.

Setup

It is very easy to set the clock and other PDC parameters by connecting the PDC to a PC and running Win-TaskGen > Remote Device Setting. But for those times when a PC connection is not readily available, all parameters can be set directly, using the PDC keypad. Here's how:






1. Turn the PDC on by pressing the  and  keys together.
2. Press the  key to go to the Main Menu.



Figure 9: Main Menu

3. Press  a couple times till <Setup> is selected, then press the  key. The Setup Menu appears:

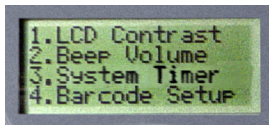


Figure 10: Setup Menu

LCD Contrast

1. From the Setup menu, make sure that LCD Contrast is selected, then press the **SCAN** key.
2. Contrast may be adjusted from high contrast (1) to very low contrast (30) by pressing the **▼** and **▲** keys. Settings “wrap around” if you go lower than 1 or higher than 30. Default is medium contrast at 14.
3. When contrast is properly adjusted, hit the **SCAN** key to save the setting and automatically return to the Setup Menu. Or hit **FN** to return without saving a new setting. The PDC remembers your settings, and will use them each time the PDC is turned on until they are modified.

Beep Volume

You can set beep “volume” on the PDC in four settings: Low, Medium, Loud, and Quiet. Low means a low, quiet tone (C#7). Medium means a medium tone (F#7). High means a higher tone (A#7).

Note: “Quiet” means silent, no tone at all.

1. From the Setup Menu (page 15), pressing the **▼** to select Beep Volume, then press **SCAN**. You enter Beep Volume setup and see the current Beep Volume setting.

2. Adjust the setting with the **[V]** and **[A]** keys, then press **[SCAN]** to actually set the beep “volume” and return to the Setup Menu. (Or press **[FN]** to exit without changing the setting.) The PDC remembers your settings, and will use them each time the PDC is turned on until they are modified.

System Timer








The PDC has an onboard clock that keeps track of the year, month, day, hour, minute, and second, allowing two digits for each. The PDC system timer keeps track of time and date even for brief intervals when there are no batteries in the unit. If batteries are removed for an extended period though, the system timer must be reset.

1. From the Setup Menu (page 15), press **[V]** till System Timer is selected, then press the **[SCAN]** key. The PDC date shows on the left of the screen as 6 digits, with the last selected. Note MMDDYY format.
2. **To delete the selected digit**, use the **[A]** or **[V]** key to navigate to the < (backspace) character in the right menu. The right menu consists of these characters: 1234567890.<v The backspace (<), when selected and **[SCAN]** pressed, deletes whatever character is selected in the left, or edit, field. You can use the backspace to delete a row of digits by pressing

- SCAN** repeatedly. The v character, when selected and **SCAN** pressed, acts as <escape> to the next menu.
3. Press **SCAN** to delete the target digit. The digit is deleted and its now-blank position is selected. To move the selector one position to the left, press **SCAN** again. The digit in the next position to the left is selected.
 4. **To write (or overwrite) a digit**, position left selector in the required position (by deleting and writing digits), then use the **V** and **A** keys to select the desired new digit from the right-hand menu.
 5. Press the **SCAN** key to enter. The digit appears on the left in the previously selected position and the cursor advances right to the next position (except when writing the rightmost digit, in which case the cursor stays there).
 6. When MMDDYY is set, press the **FN** key to jump to HHMMSS setup. Following 24 hour format, the procedure is similar to setting MMDDYY.
 7. When finished, press the **FN** key to escape.


Barcode Setup

Use this parameter to assign which types of barcodes the PDC will read, and which not.

1. From the Setup Menu (page 15), press  or  till Barcode Setup is selected, then press the  key. The screen shows a page for (example) EAN/UPC with the designation On or Off below the code type. On means that the PDC will read this type of code.
2. Change the setting if needed with the trusty  and  keys, then press  to actually make the setting and proceed to the next code type page.
3. To flip through the pages rapidly, just press  repeatedly.

A typical list of code type pages might be:

EAN/UPC, Code 39, Codabar, ITF 25, Code 128,
Code 93

4. When finished, press  to exit. The PDC remembers your settings, and will use them each time the PDC is turned on until they are modified.

Note: FREETASK includes the ability to read the most popular types of barcodes. To set up the PDC for reading barcodes beyond this limited list, use the PC setup program, WinTaskGen, to adjust settings.

Specifications

OPERATIONAL

Scanner

Light Source	630nm visible LED
Optical System	1024 pixel CMOS sensor
Depth of Scan Field	15-40mm
Width of Scan Field	44mm (at 28-38mm depth)
Minimum Bar Width	6mil @ PCS 90%
Print Contrast	45% or more
Indicator (LED)	two-color (green & red) LED
Decode Capability	UPC/EAN/JAN, UPC Versions A&E, EAN-8, EAN-13, JAN-8, JAN-13, ISBN/ISSN, Addendum 2 or 5, Code 39 (with full ASCII), Codabar (NW7), Code 128/EAN 128, Code 93, Interleaved 2 of 5, MSI/Plessey, China Post Code, Code 32 (Italian Pharmacode) Optional: Industrial 2 of 5, Standard 2 of 5, Discrete 2 of 5, Matrix 2 of 5, Japanese Bookland, IATA Code, Code 11, RSS-14, RSS Limited, RSS EXpanded
Beeper Operation	programmable tone and beep time

System

MPU	High-performance C-MOS microprocessor
Memory	32Kb non-volatile memory
System Interfaces	CMOS serial interface
Application	
Development	Windows-based application generator
Software	
Development Kit	Available

PHYSICAL

Length	69.8mm
Width	44.4mm
Thickness	22.3mm
Weight	44.6g (with batteries)
Cable	Serial cable with mini-USB connector
LCD Display	FSTN, 96 x 32 dots (16 x 4 characters)

POWER

Batteries	4 ea. VARTA 1/V40H NiMH rechargeable batteries or 4 ea. LR 44 alkaline dry cells
Battery Life	Up to 1,200 scans (with rechargeable batteries)
EMC	89/336/EEC CE & FCC Class B

ENVIRONMENTAL

Operating Temp	0~50°C
Storage Temp	-10~60°C
Operating Humidity	10~90%
Storage Humidity	5~65%
Shock	designed to withstand drops up to 1.2m

Specifications subject to change without notice.

DIMENSIONS

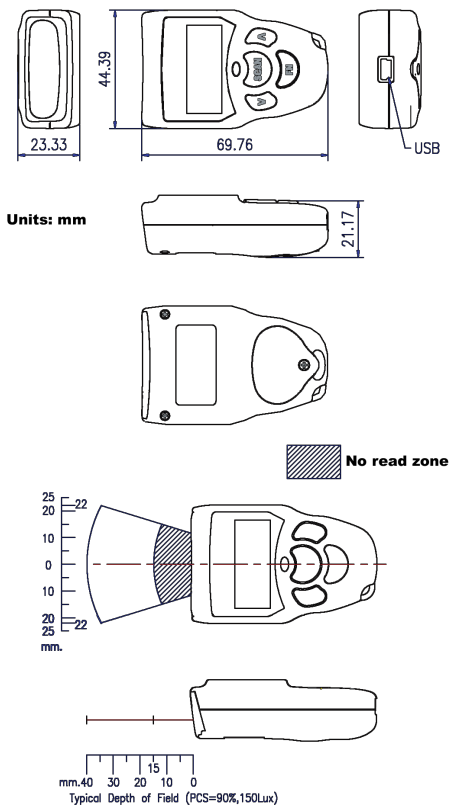


Figure 11: PDC Dimensions

Notes...

Part no.: MUL-53250-01