



Apex III



Apex IV

User's Manual

Second Edition



Compsee, Inc.
A Subsidiary of McRae Industries, Inc.

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**PORTABLE DATA
COLLECTION TERMINAL
USER'S MANUAL**

SECOND EDITION

Compsee, Inc.
A Subsidiary of McRae
Industries, Inc.



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Apex Product Registration Card

Please complete this form and mail or FAX to :

Compsee, Inc.

2500 Port Malabar Blvd. NE

Palm Bay, FL 32905-6065

(321) 723-2895 (FAX)

Model #		Serial #	
Company Name		User's Name	
Address		City	
State		Country	
ZIP		Phone	
FAX		E-mail Address	
Purchased from		Date Purchased	
Please check the box that best describes your company	<input type="checkbox"/> Individual <input type="checkbox"/> Privately-owned Company <input type="checkbox"/> Corporation		
What is the size of your company?	<input type="checkbox"/> Under \$1 Million in Sales <input type="checkbox"/> Greater than \$1 Million, less than \$10 Million in sales <input type="checkbox"/> Greater than \$10 Million in sales		
What is your application for the Apex III?	<input type="checkbox"/> Warehousing <input type="checkbox"/> Medical <input type="checkbox"/> Government <input type="checkbox"/> Retail <input type="checkbox"/> Service <input type="checkbox"/> Other (describe)		

You must register this product to receive product support

Reverse Side

Place
Stamp
Here



2500 Port Malabar Blvd. NE

Palm Bay, FL 32905-6065 U.S.A.

Front Side

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APEX PORTABLE DATA COLLECTION TERMINAL WARRANTY INFORMATION

Note to Purchaser

This warranty and license contains important information on the servicing and use of your new Apex Portable Data Collection Terminal (PDT).

Limited Warranty

Compsee, Inc. warrants that for one year from date of purchase, the Apex Portable Data Collection Terminal shall be free from significant defects in material and workmanship and that it will operate satisfactorily under normal conditions of use and service, as more fully described in this manual or other product specifications published by Compsee.

Compsee's responsibility under this warranty is limited to repair or replacement of any part of the terminal which proves to be defective in normal use and service during the warranty period. Refer to the Service and Repair section of this manual for the equipment return procedure.

Program License

Your Apex contains an operating system and BIOS in firmware which has been programmed by Compsee to enable the terminal to perform the functions described in the published specifications. Your purchase of the Apex PDT includes a perpetual, non-exclusive, and transferable license to use the firmware operating system built into the Portable Data Collection Terminal.

The operating system can be modified or supplemented with application programs devised by others, such as a Value Added Reseller (VAR) from whom you may have purchased the terminal. All application software programs are the sole responsibility of their creators. The limited warranty applicable to the Apex does not include servicing for defects or performance problems caused by any third party implementation of programs originally manufactured by Compsee.

Warranty Disclaimers

These warranties apply only to Apex Portable Data Collection Terminals purchased directly from Compsee, Inc. or from an authorized VAR of Compsee products. The warranties are void if apparent defects were caused by accident, neglect, misuse, alteration, or unauthorized attempts at adjustment or repair. Warranty service, as described herein, is the exclusive remedy of the purchaser against Compsee, Inc. for product defects or any other claim or liability in connection with the purchase or use of Compsee products.

Warranty Note

THESE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EVEN THOUGH COMPSEE, INC. MAY HAVE BEEN ADVISED OF THE INTENDED USE OF THE PRODUCTS BY PURCHASER.

Warranty Limitations

Prior to operating the terminal, review the following warranty limitations. Failure to adhere to the provisions of these limitations will void the product warranty.

- ❑ DO NOT attempt to open or disassemble the Apex case except as directed for a specific operation by this or other Apex manuals (e.g. End Cap Removal). No user serviceable parts are included in the unit.
- ❑ Charge the Battery Pack only with an approved Compsee charging device. Use of any charging device other than those specified by Compsee can potentially damage the Apex or Battery Pack.
- ❑ DO NOT spray cleaners directly on the keypad or use a saturated cloth for cleaning the unit. Only a lightly damp cloth should be used for wiping down the unit.

- ❑ DO NOT clean the Apex using alcohol, acetone, mineral spirits or any other petroleum or alcohol based product. Damage to the unit can occur.
- ❑ DO NOT leave the unit in the rain or direct sunlight or immerse the unit in water or any other liquid.
- ❑ Use only Compsee cables for data transfer purposes. Attachment of other cables may cause damage to the unit and/or the attachment device.

Recommended Operational Tips

Note: Failure to heed the following recommendations, while not voiding the warranty, may result in operational degradation or program/data loss.

- ❑ DO NOT clean the Laser Window, Display Screen Window, or IR Window with soap, abrasives, or any alcohol or petroleum based solution.
- ❑ DO NOT attempt to operate an Apex PDT once it has powered down due to a low battery condition. When the Battery Pack is exhausted, leave the exhausted Battery Pack in the Apex until you can either charge it in place by placing the Apex III in the Apex III Dock or swap out the Battery Pack with a fully charged Battery Pack. Information in volatile memory (RAM) will be preserved since the Apex PDT is configured so that even with an exhausted Battery Pack enough energy is retained to maintain the information for an extended period of time. DO NOT leave the unit WITHOUT a Battery Pack for more than 5 minutes.
- ❑ The Apex III PDT and Apex IV PDT Battery Packs are of Nickel Metal Hydride (NiMH) and Lithium – Ion (Li-Ion) composition respectively. The Battery Packs DO NOT succumb to memory (hysteresis) loss as do Nickel-cadmium (Ni-Cd) batteries. *Therefore, Apex PDT Battery Packs can be charged while in any state-of-charge and do not require a full discharge prior to charging. With the Apex III Battery Pack, it is still recommended that the Battery Pack be fully discharged periodically to reset the internal gas gauge circuitry.*

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1 APEX PDT BASICS

General User Information

This manual provides information necessary to properly operate and maintain the Apex Portable Data Collection Terminal (PDT). Contained within this manual is a description of the unit's hardware and software; procedures for unpacking and verifying the unit's operating functions; operational instructions; Battery Pack charging and replacement instructions; guidelines for maintaining the Apex PDT; and other useful information.

Before attempting to understand and operate new equipment, it is important for the user to gain knowledge by reviewing the available product information. Whether you are a novice without any experience in using computers or a confident user with the added advantage of knowing DOS, this manual contains what you need to become proficient in operating the Apex PDT. Depending on the intended operation of your application program(s), additional resources may be necessary to program the unit, upload and download data to and from the unit, or print the bar codes that you would like to scan. The following sections list additional resources you may require.

Communications Software

The communications software allows the Apex PDT to interface with a PC, giving you the ability to upload or download data to or from the unit. Functions include adding, changing, deleting or viewing data within the unit's memory.

Your Apex PDT comes with a pre-loaded communications utility program [*dx.exe*]. Included on the Compsee Product Support CD is a Windows[®] based counterpart, the Apex PDT Windows Transfer Utility. Refer to the Apex Technical Reference Manual (TRM) and to the Help files included with these utilities for additional information on their use.

In addition, a software communications package such as HyperTerminal[®] or PROCOMMPLUS[®] loaded on your PC will work in conjunction with the [*dx.exe*] utility. The Apex PDT Product Support CD provided with each unit contains additional upload/download software programs for your use including [*remdisk.exe*] and [*remserv.exe*] (for use primarily by developers).



Apex Program Generator

A Windows[®] based program specifically designed for use with the Apex PDT, the Apex PDT Program Generator application generates well structured, modular, and fully commented source code. The Program Generator's application contains a built-in communications module that handles data transfers to and from the host PC and the Apex terminal.

The Compsee part number for the Apex Program Generator is located in the Parts Section of this manual. The Program Generator application can be ordered directly from Compsee, Inc. or through your Value Added Reseller (VAR). Additional product information and product brochures can be obtained by calling (407) 724-4321 or (800) 628-3888.

Using This Manual

Typographic conventions followed within this manual:

- **Bold Type** is used for headings and important sections throughout the manual.
- <> Angular brackets are used to enclose hard keys (keys whose name and function do not change) located on the Apex III, such as <FN> and <ENT>.
- Important points and supplementary information are included as **Notes** throughout this manual. Note headings are printed throughout the manual using bold underlined typeface.
- When two keys are listed together with the plus (+) sign (e.g. <FN> +), this indicates that the user should press and hold the first key while pressing the second key.
- When specific filenames along with their extension are addressed in the text they will be denoted by the use of bold italics and surrounded by brackets (e.g. [*remdisk.exe*]). When referring to only the filename and not the extension (e.g. *remdisk*) the filename may be shown only in italics.
- **CAUTION**  and **WARNING**  messages are provided within this manual, which if not observed, could result in equipment damage, data loss, or personal injury. **CAUTION** and **WARNING** messages are located within boxes and with their headings in bold.

Apex PDT Characteristics

The Apex Portable Data Collection Terminal (PDT) is a state-of-the-art electronic scanning device. The unit is designed in an easy to hold, ergonomic format to facilitate source data collection in a broad range of environments and applications.

The full-functioned capabilities of your Apex PDT allow you to easily gather bar code or key-entered information, and download the information for use with your existing business applications.

Your Apex PDT includes the following state-of-the-art features:

- ❑ A 32 bit microprocessor operating @ 33 MHz
- ❑ 8 or 16 MB of Flash memory
- ❑ 4 MB of On-board RAM
- ❑ A Graphical Display Screen (240 × 160 pixels) with user activated backlighting
- ❑ Full alphanumeric keypad
- ❑ Wireless LAN capabilities (RF configured Apex PDT)

The Apex PDT can support Batch or Wireless operations via two internal PC Card slots (capable of simultaneously supporting two Type I or II devices or a single Type III device). These slots provide the user with numerous options for connectivity and memory expansion including, but not limited to network interface adapters, high speed modems (both wired and wireless), Flash Memory, and RAM cards.

The Apex III PDT is available with or without an integrated laser scanner. Available integrated laser options include Standard, Long Range, Advanced Long Range, or Very High Density. An optional squeeze-lock connector on the Apex III PDT provides tethered connectivity (2D Scanner, CCD, wand, etc.) in lieu of an integrated laser. This option is not available on Apex IV PDT models.

Data transmission to and from the Apex can be accomplished via the built-in infrared interface or through the *optional* Serial End Cap (RS-232) Interface port.

Utilizing a DOS based operating system (Datalight ROM-DOS™ 6.22), the Apex PDT supports DOS applications, graphic displays, and existing DOS user software.

An optional Windows® based Program Generator can be purchased to assist the user in implementing most of their basic data collection type applications.

The basic format for using the Apex PDT with your application program is laid-out in the following table:

Step	Action/Result
1.	Create the application program on a PC using any DOS based environment or the optional Apex Program Generator software.
2.	Upload the programs to the Apex PDT using the IR interface, the optional Serial End Cap, or the internal RS-232 port.
3.	Power-up the Apex PDT and verify the proper boot sequence (This may include initiation of your application program depending on the way your programmer has set the program to start).
4.	Collect data with the Apex PDT by reading bar codes or entering data using the front panel keypad.
5.	Download the collected data directly to a mainframe or PC for processing via one of the following methods: <ul style="list-style-type: none"> ➤ The IR interface (using the optional Dock) ➤ The optional Serial End Cap ➤ A wireless LAN (RF configured Apex PDT required) ➤ The internal RS-232 port.
6.	Use the collected data in existing application programs including standard PC spreadsheet or database programs.

Table 1-1: Apex PDT Basic Use

Refer to the following illustration for a graphical representation of the process steps in the preceding table.

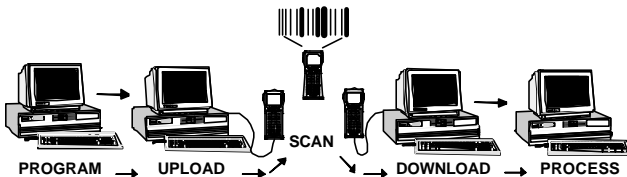


Figure 1-1: Basic Application Format

Information Entry

As shown in Figure 1-1, the Apex PDT can be used as a remote data collection device using a data collection program developed by your application programmer. Once the data collection program has been loaded into the unit (and started during booting or manually executed after boot-up), data can be collected with the Apex PDT. Three ways of collecting data with the Apex PDT are described below.

Scanning (Supported Symbologies)

The Apex PDT is capable of reading and automatically discriminating between most of the major bar code symbologies in use today as defined by the Automatic Identification Manufacturers, Inc. (AIM) specifications. The bar code formats incorporated into your Apex PDT include the following:

- Codabar
- Code 11
- Code 39 (standard)
- Code 39 (full ASCII)
- Code 93
- Code 128
- EAN 8/13
- Interleaved 2 of 5
- Intercode 2 of 5
- Industrial 2 of 5
- JAN 8/13
- Matrix 2 of 5
- MSI Plessey
- PDF (via serial input only)
- UPC-A/E
- UPC/EAN (with 2 or 5 character supplemental)

Additional scanning instructions and considerations are provided later in this chapter under the Checkout Procedure topic.

Manually Through The Keypad

During the data collection process, the Apex PDT may prompt you for additional information. By using the front panel keypad, the operator can enter additional information such as quantity, price, location, etc.

Note: If the Apex PDT prompts you for additional information regarding the data you are collecting, your application programmer has previously defined your Apex unit to work in this manner. The Apex PDT will not operate in this fashion until your company's application program has been loaded.

Systematically Through The Com Port

Information transfer for the Apex PDT can also be uploaded or downloaded from the host computer system to the unit through the IR interface (using the optional Dock), the Serial End Cap, a Wireless LAN (requires an RF configured Apex PDT), or the Internal RS-232 port. It should be noted that only one of these methods can be used at a time.

Information Processing

The Apex PDT allows the operator to store, process, and transmit acquired information. Application programs written to work in a DOS operating environment allow the unit to be customized for practically any portable data collection requirements. The built-in IR and RS-232 Serial interfaces provide for data communication transfer with other data processing equipment. Additionally, purchasing an RF Configured Apex PDT (or upgrading a standard Apex PDT to RF capabilities) allows the user to transfer collected data via a Wireless LAN.

Unpacking And Inspecting For Damage

Warranty and Safety Notes

Prior to operating the Apex PDT, it is recommended that the user review the Warranty Limitations and Safety Precautions covered within this manual. When operating the Apex PDT with an integrated laser, failure to heed the recommendations and precautions described may result in exposure to hazardous laser radiation and possibly void the unit warranty.

Inspecting the Terminal

The Apex PDT is specially packaged to protect the unit during shipping and handling. Retain the shipping container and all packing materials for use in the event a return is necessary. These items should be used when returning the unit for service or repairs. If a new container is needed, contact Compsee at (407) 724-4321 or (800) 768-5248. Before contacting Compsee or one of our Value Added Resellers, carefully read the Technical Support section of this manual.

Upon receipt of your Apex PDT, immediately inspect the package contents for possible shipping damage. In the unlikely event that anything is damaged or missing, perform the following:

1. Return the package contents to their original carton, along with packing materials, and place them in the proper configuration.
2. Notify the delivering carrier of damages and request immediate inspection.
3. Contact the shipper.
4. Send a letter of intent to file a claim to the delivering carrier within 72 hours from the date of delivery.
5. Send a copy of the letter to the shipper. Only the consignee (the receiving party) can file a claim against the carrier for concealed damages.
6. Unpack the Apex Portable Data Collection Terminal and all the accessories contained in the carton.
7. Assure that you have received all of the components listed on the enclosed packing slip.

Optional Accessories

The following items are available as optional accessories to the Apex III PDT (refer to the parts section of this manual for specific part numbers):

- ❑ Additional Battery Packs
- ❑ Serial End Cap – Allows an RS-232 serial connection without End Cap removal.
- ❑ Serial Interface Cable (Serial End Cap to DB-9)
- ❑ External Charger – Allows simultaneous charging of up to two Apex III Battery Packs
- ❑ Apex III Dock – A docking station incorporating Infrared (IR) coupling, slip-in charging capabilities, and an additional slot for charging a spare Apex III Battery Pack. The unit incorporates wall or desk mounting capabilities.
- ❑ Additional Power Supplies (with or without an AC line cord)
- ❑ Vehicle Lighter Adapter – Cigarette lighter adapter cable for connecting Dock or External Charger Power supply to a 12 VDC vehicle power source.
- ❑ Soft-Side Case – A form fitted cloth cover with a built-in hand strap that provides additional protection for your Apex PDT.
- ❑ Soft-Side Holster – A custom pouch with a built-in belt holder that allows the Apex PDT to be worn on your hip for easy carrying and accessibility.
- ❑ Apex Program Generator Software – Assists an application developer in writing custom Apex PDT Application programs (includes file transfer capabilities).
- ❑ Compsee Product Support CD (additional copies)

Apex PDT Set-up and Checkout

The Apex Portable Data Collection Terminal is a sophisticated electronic piece of equipment. To ensure proper operation, superior performance, and a long service life we recommend that you follow the instructions put forth in this User's Manual. The following information is a guideline to be used during initial checkout of the unit.

Note: Your Apex PDT unit comes with one Battery Pack, which was fully charged at the factory. As with most rechargeable batteries, depending on when you received your unit and the date the Battery Pack was initially charged, the Battery Pack may no longer be in the fully charged state.

Initial Setup Procedure

1. It is recommended that the user read the *entire* Apex PDT User's Manual before proceeding with the Initial Setup procedure. This is especially true of Sections 2 through 4, which include the Safety and Operational information.
2. Insert the Apex PDT Battery Pack into the Battery Bay as per the Battery Charging section of this manual.
3. Press the red <Power> button on the bottom of the Apex PDT front panel.
4. Wait approximately 1.5 seconds, then verify the screen displays the boot sequence. e.g. BIOS information followed by an audible beep, message "Starting ROM-DOS...", configuration information, etc.
5. If your unit's [*autoexec.bat*] file automatically loads a customer specific application program (setup by your IT department), the screen will display a message referring to the specific application.
6. If no application program has been loaded, or one is loaded, and it is not configured to start automatically by the [*autoexec.bat*] file, then the screen will stop with the C-prompt:

```
C:\>
```

Note: Your Apex PDT comes with a basic scanning program preloaded by Compsee, Inc. At this time the unit should be ready to scan bar codes. Refer to the following section for detailed scanning techniques before performing the following step.

**CAUTION!**

*VIEWING SCANNER BEAM DIRECTLY
IS NOT RECOMMENDED*

The scanner contained in the Compsee, Inc. Apex Portable Data Collection Terminal is a Class II laser device. It is a low power laser. Momentary viewing of the beam will not cause retinal damage. You are strongly cautioned against any direct viewing of the scanner output.

7. Test the unit by pressing the <SCAN> button and reading the bar code on the back cover of this manual or the bar code examples furnished in Appendix A.

Scanning Techniques

Following the scanning techniques presented below will ensure accurate and error-free scanning of most bar codes. Please be aware that worn, dirty, torn, or damaged bar code labels or imprints can adversely affect the scanning process and cause errors in your data.

Note: DO NOT aim the laser so the beam is exactly perpendicular to the bar code symbol. Symbols printed on a glossy surface can cause a reflection that can interfere with the scan read. Pointing the laser so the beam intersects the bar code at an angle will reduce the chance of the reflection interference.

- ❑ To begin the scanning process, place the Apex PDT so the laser window is slightly above or below the bar code.
- ❑ Make sure that the Apex PDT is a sufficient distance from the bar code so the laser extends beyond the outermost edges of the code. This will ensure that the entire code is “read” and the read is good.

- ❑ Press and hold the <SCAN> button on the Apex PDT front panel, then smoothly and evenly pass the laser completely over the bar code. The yellow Scan LED will illuminate.
- ❑ After successfully scanning a bar code and a good “read” occurs, the green Decode LED will illuminate and an audible beep will be heard.
- ❑ If the bar code does not read correctly try again. After you have performed the operation a few times it will become second nature.

Scanning Difficulties You May Encounter

The following items can cause possible problems when attempting to scan a bar code:

Note: For specific details on enabling bar code symbologies used by your unit, refer to the Apex PDT Technical Reference Manual).

- ❑ The bar code symbology type being read must be supported (see p. 1-5) and enabled on your Apex PDT.
- ❑ The bar code character number must match the same number of characters as programmed into the Apex PDT.
- ❑ Bar code labels should be clean (not smeared) and complete (not torn or damaged).
- ❑ High gloss bar code labels can cause reflections, which interfere with a proper read (holding the unit at a greater angle – non perpendicular will help prevent this from occurring).

2 SAFETY

Apex PDT Laser Safety (Standard And Very High Density)

The Apex Portable Data Collection Terminal is equipped with a light emitting laser device. The unit has been designed and manufactured to exacting standards for performance, reliability and safety. This product emits visible laser radiation, which can be harmful to the eyes if viewed directly.

Certain warnings and precautions, in addition to the operating and care instructions in this manual, are provided for safe operation of this product.

The integrity of the unit case is critical to the performance and safe operation of the product. *In the event that the case becomes broken, loose, cracked, or perforated, operation of the unit should cease immediately.* Only after authorized personnel have repaired the unit, should operation of the unit resume.

It is recommended that personnel using this device DO NOT look directly into the Scanner Beam while operating the device.



WARNING!

DO NOT TAMPER WITH THE UNIT CASE

DO NOT operate the scanner if case is perforated, broken, or loosely held together. Use of the product with the case broken, perforated, or loose could result in damage to the eyes if laser light is viewed directly.



CAUTION!

ONLY USE COMPSEE APPROVED METHODOLOGY

DO NOT use the Apex PDT for uses other than those specified by Compsee, Inc. Use of controls, adjustments, procedures, or methodology other than those specifically identified by Compsee, Inc. may result in hazardous laser light exposure.

**CAUTION!**

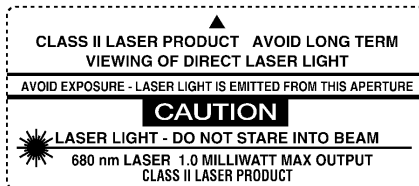
*VIEWING SCANNER BEAM DIRECTLY
IS NOT RECOMMENDED*

The scanner contained in the Compsee, Inc. Apex Portable Data Collection Terminal is a Class II laser device. It is a low power laser. Momentary viewing of the beam will not cause retinal damage. You are strongly cautioned against any direct viewing of the scanner output.

**WARNING!**

*FAILURE TO ADHERE TO WARNINGS,
CAUTIONS, AND APPROVED PROCEDURES COULD
RESULT IN EXPOSURE TO HARMFUL,
VISIBLE LIGHT RADIATION*

The following Caution Label is mounted on the Apex Portable Data Collection Terminal to caution users of the possible effects of laser radiation.



Apex III Caution Label



Apex IV Caution Label

The following exposure label is a reproduction of the label mounted inside the Apex Portable Data Collection Terminal.

**CAUTION – Laser Light when open.
DO NOT STARE INTO BEAM**

Apex PDT Laser Safety (Long Range Laser)

The Compsee, Inc. Apex Portable Data Collection Terminal is available with an optional Long Range Laser designed and manufactured to exacting standards of performance, reliability and safety. This device emits visible laser light radiation, which can be harmful to the eyes if viewed directly.

Certain warnings and precautions, in addition to the operating and care instructions in this manual, are provided for safe operation of this product.

The integrity of the unit case is critical to the performance and safe operation of the product. *In the event that the case becomes broken, loose, cracked, or perforated, operation of the unit should cease immediately.* Only after authorized personnel have repaired the unit, should operation of the unit resume. It is recommended that personnel using this device DO NOT look directly into the Scanner Beam while operating the device.



WARNING!

DO NOT TAMPER WITH THE UNIT CASE

DO NOT operate the scanner if case is perforated, broken, or loosely held together. Use of the product with the case broken, perforated, or loose could result in damage to the eyes if laser light is viewed directly.



CAUTION!

ONLY USE COMPSEE APPROVED METHODOLOGY

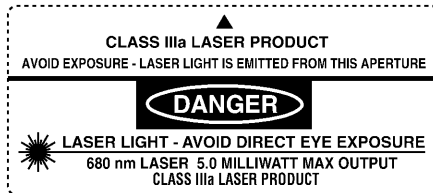
DO NOT use the Apex PDT for uses other than those specified by Compsee, Inc. Use of controls, adjustments, procedures, or methodology other than those specifically identified by Compsee, Inc. may result in hazardous laser light exposure.



DANGER!

THE LASER SCANNER CONTAINED IN THIS COMPSEE, INC. APEX PORTABLE DATA COLLECTION TERMINAL IS A CLASS IIIa LASER. ANY DIRECT VIEWING OF THE SCANNER BEAM IN THE AIMING MODE SHOULD BE AVOIDED.

The following Danger Label is mounted on the Apex Portable Data Collection Terminal to warn users of the possible effects of laser radiation.



Apex III Danger Label



Apex IV Caution Label

The following exposure label is a reproduction of the label mounted inside the Apex Portable Data Collection Terminal.



Battery Pack Safety



WARNING!

ONLY USE COMPSEE, INC. APPROVED CHARGERS!

Only charge the Apex III Battery Packs in the Apex III Dock or the Apex III External Charger. DO NOT use chargers from other manufacturers. The Battery Pack warranty will be voided and Battery Pack Damage could occur.



CAUTION!

PLACE THE UNIT IN SUSPEND IF THE CHANGE BATTERY MESSAGE IS RECEIVED!

We recommend that the user place the unit in “Suspend” and change to a fully charged Battery Pack or recharge the installed Battery Pack after receiving the “*Change Battery*” message. After this operation, pressing the “Suspend” button again will return the unit to the position of the last performed operation. When the “*Battery Critical*” alarm is received, the unit will shutdown and can NOT be restarted until the Battery Pack is replaced with a charged Battery Pack or the installed pack is recharged.



WARNING!

DO NOT OPERATE THE APEX PDT ONCE IT HAS POWERED DOWN DUE TO A LOW BATTERY CONDITION!

DO NOT attempt to operate the Apex PDT once it has powered down due to a low battery condition. When the Battery Pack is exhausted, leave the exhausted Battery Pack in the Apex PDT until you can either charge or swap the Battery Pack with a charged Battery Pack. Information in volatile memory (RAM) will be preserved since the Apex PDT is configured so that even with an exhausted Battery Pack enough energy is retained to maintain the information for an extended period of time. DO NOT leave the unit WITHOUT a Battery Pack for more than 5 minutes.

**WARNING!**

*DO NOT SHORT THE APEX PDT
BATTERY PACK TERMINALS!*

DO NOT short the Apex PDT Battery Pack terminals with any conductive material. A short across the terminals could result in the sudden release of all of the remaining Battery Pack energy causing an explosion or fire.

**CAUTION!**

PROPERLY DISPOSE OF APEX PDT BATTERY PACKS!

Apex PDT Battery Packs should be disposed of properly. DO NOT dispose of the Apex PDT Battery Pack in a flame or fire. An explosion may occur. Apex PDT Battery Packs are approved for disposal in a class 2 Landfill (normal trash); however, recycling the Battery Packs reduces the amount of raw materials consumption necessary to produce new Battery Packs and also reduces the total landfill usage within your area. We highly recommend that the Battery Packs be returned to the factory for recycling at the end of their useful life. Contact Compsee, Inc. for additional information.

Product Conformity

This product complies with the Code of Federal Regulations section 21 CFR 1040.10. No user serviceable parts are included in the manufacture. *Opening of the unit by unauthorized personnel will void the product warranty (except End Cap removal as noted in this or other Apex PDT manuals).*

Only Authorized personnel should attempt to repair or replace parts within this unit. Breaking of the unit seal, tampering, or repair by unauthorized personnel will void the unit warranty and could result in personnel injury or permanent damage to the unit.



WARNING!

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If the equipment is not installed and used in accordance with instructions published in this and other Apex PDT manuals, interference with radio communications may result. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (determined by turning the equipment ON and OFF), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorientation or relocation of the receiving antenna.
- Increasing the separation between the equipment and affected receiver.
- Connecting the equipment to an outlet on a different electrical circuit than that of the affected receiver.
- Consulting the dealer or an experienced radio/TV technician for help.

3 COMPONENT IDENTIFICATION

General Information

The Apex Portable Data Collection Terminal (PDT) uses a soft touch keypad design, which emulates all of the major functions found on a standard PC keyboard. Computer and calculator type features incorporated into the front keypad area allow the operator or application programmer to enter data, transmit data, or program the unit in the same manner as if they were operating a standard PC.

With its advanced technology, the Apex PDT is fully programmable and can be utilized for practically any data collection purpose.

Apex PDT Major Component Areas

Front Panel

Incorporated into the Apex PDT front panel are the following major components to assist the operator in performing their specific functional requirements:

- ❑ Display Screen (LCD)
- ❑ Power Control Button (Key - Red)
- ❑ Numerical Key Area
- ❑ Alphabetical Key Area
- ❑ Function Key Area
- ❑ Shift Button (Key - Yellow)
- ❑ Second Function Button (Key - Green)
- ❑ Cursor Buttons (Keys)
- ❑ LED Indicators

The following illustration (Figure 3-1) shows the frontal view of the Apex PDT and the orientation of the major functional areas incorporated into the unit's keypad area:

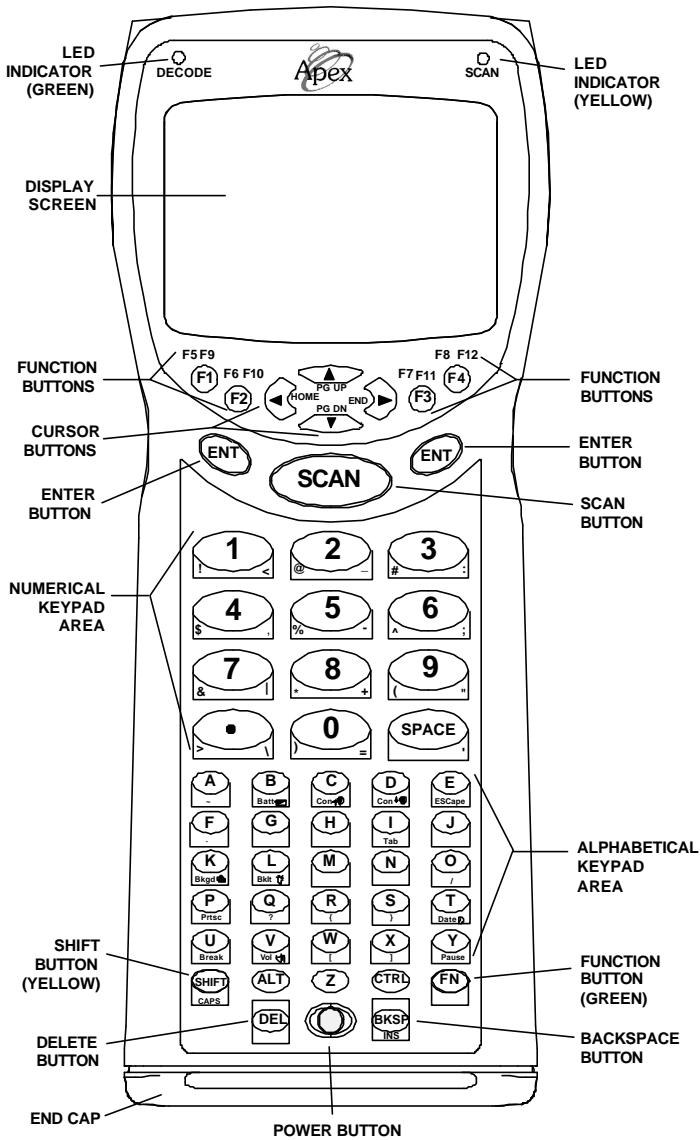


Figure 3-1: Apex PDT Front Panel Functional Area General Description

Serial Connection And PC Card Slots

The Apex PDT comes equipped with an RS-232 Serial connector for uploading and downloading information from or to a PC or other Serial device. The removable bottom End Cap exposes the PC Card slots (2), the RS-232 8-pin connector, and the operational DIP switches.

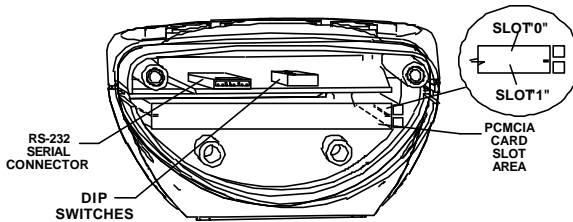


Figure 3-2: Apex With End Cap Removed

Note: Serial communication using the RS-232 Serial connection can be half or full duplex. Serial communication using the IR Window must be half-duplex.

An optional Serial End Cap may be purchased and installed allowing a serial connection to be made without the End Cap being removed (replaces the standard End Cap). See the Optional Accessories section of this manual or contact your authorized Value Added Reseller (VAR) to find out more about this product.

Infrared Interface Window

An Infrared (IR) window located at the top of the Apex PDT (see Figure 3-3) provides a means of transmitting data via infrared light pulses to or from the optional Dock. Refer to the Optional Accessories section of this manual and contact Compsee, Inc. or your authorized Value Added Reseller (VAR) to find out more about this product.

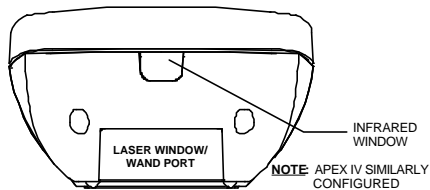


Figure 3-3: Apex III Infrared (IR) Window

Apex III Back Panel

The Apex III Back Panel is constructed of stylish yet ergonomically designed high impact plastic, contoured and textured to give the user a firm comfortable feel when holding the unit.

The Apex III Back Panel contains provisions for mounting the Apex III Battery Pack in a non-protruding format that conforms to the overall contour of the unit. This mounting format allows the battery charging terminals to be exposed for slip-in charging when the unit is placed into the optional Dock.

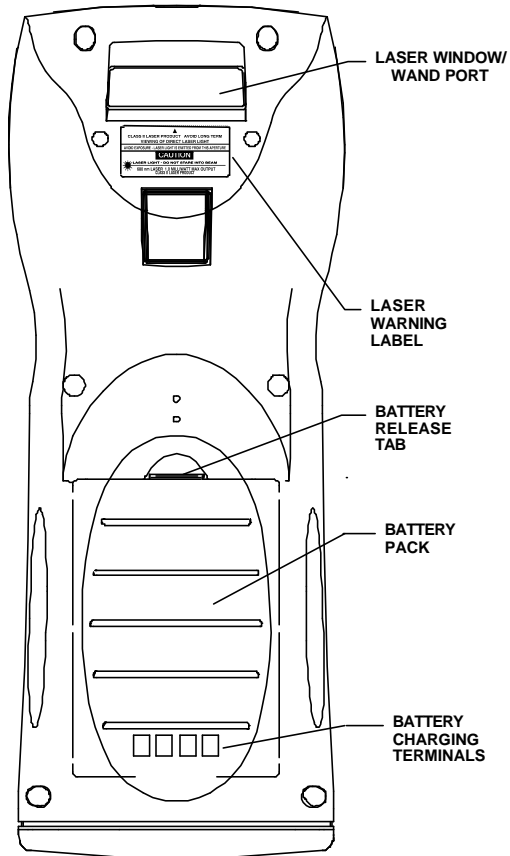


Figure 3-4: Apex III Back Panel Components

Apex IV PDT Front And Side View

The Apex IV PDT has the same front panel configuration as that of the Apex III PDT. A comfortably styled handle integrated into the rear of the unit allows for the user to easily handle the unit while scanning items or entering data manually. All operations and functions that can be performed by the Apex III and Apex IV PDT models are the same unless specified within this manual or the Apex PDT Technical Reference Manual.



Figure 3-5: Apex IV Front And Side View

To enhance weight distribution, functionality, and ease of use, the Battery Pack compartment has been incorporated into the base of the handle. Integrated protective rubber guards surrounding the top and bottom of the front panel and the base of the handle have augmented the overall durability and functionality of the unit. In addition to providing the Apex IV PDT with added drop protection, the above described features allow the unit to be placed in various positions for easier readability or in preparation for the next operation.

4 UNIT OPERATION

Front Panel Functional Area Description

Note: Key functions described herein are for those functions dedicated by factory hardware and software. Your application programmer may program additional key functions into the unit. If applicable, refer to your specific application program guidelines for these functions.

- **Display Screen (LCD):** The LCD Display Screen, is a fully programmable graphics LCD with a 240 × 160 pixel display. The screen displays characters relating to either the scanned input or those keyed in via the front panel keypad. Messaging from the current running application program as well as messages informing the operator of the unit's condition ("Change Battery", etc.) are displayed either by the program itself or when the correct function keys are depressed.
- **Power Control Key:** The Power Control key turns the unit ON or places the unit in the *Suspend* mode. When initially pressed, the key causes the unit to turn ON and perform a "Cold Boot" (runs through the initialization sequence and may automatically start your specific application program if setup by your application developer).

When pressed a second time, the Power key places the Apex PDT in the *Suspend* mode (a low power mode where the display screen turns off, but information remains stored in memory). Pressing the Power key again when in the Suspend mode returns the unit to normal operation.

To completely shut the unit OFF, press and hold the FN key, then press the Power key (<FN> + <Power>).

- **Numerical Keys:** The Numerical keys provide the operator or programmer the capability of inputting numerical information into the unit's memory or application program field. Pressing a number key inserts the number into the display field and moves the cursor one space to the right.

- ❑ **Alphabetical Keys (A – Z):** The Alphabetical keys provide the operator or programmer with the capability of inputting alphabetical information into the unit's memory or application program. Pressing an alphabetical key inserts the letter into the active display field and moves the cursor one space to the right.
- ❑ **Function Keys (F1 – F12) Area:** The Function keys allow the user to call up specific menus or macros for the program being run. Functions may vary depending on the use selected by the application programmer.
- ❑ **Shift (SHIFT) Key:** Pressing and holding the <SHIFT> key allows access to the SHIFT character function of the front panel keys. In addition, program specific functions may also be initiated when the user holds the <SHIFT> key while pressing another key (setup by your application programmer). The <SHIFT> key and shift function character designations are colored "Yellow" to show their corresponding relationship.
- ❑ **Function (FN) Key:** Pressing and holding the <FN> key allows access to the second function actions or characters displayed on the front panel key area. The Function <FN> key as well as the function character designations are colored "Green" to show their corresponding relationship.
- ❑ **Cursor Keys:** The Cursor keys allow the operator or programmer to move the screen cursor in the direction of the cursor arrow pressed (Left ◀, Up ▲, Right ▶, or Down ▼).
- ❑ **LED Indicators:**

Two Communication LED's are located directly above the Display Screen.

 - **SCAN LED** – The yellow SCAN LED indicates when the unit is in the SCAN mode and a scanning operation is in progress. The SCAN LED will be illuminated during this operation. Additionally, the LED blinks rapidly when data is being *received* (via IR or RS-232).
 - **DECODE LED** – The green DECODE LED indicates when the unit has performed a "good read" of a bar code. Additionally, when a data *transmission* (via IR or RS-232) is in progress the LED blinks rapidly.

- ❑ **SCAN Key:** Pressing the <SCAN> key energizes the Apex PDT laser when a scan application program has loaded. This allows the operator to scan bar codes.
- ❑ **Enter (ENT) Key:** The <ENT> key performs the same function as an enter key on a PC or calculator. The key enters the information into the processor or application program in the active field.
- ❑ **Control (CTRL) & Alternate (ALT) Keys:** The <CTRL> and <ALT> keys perform just as on a normal PC, providing auxiliary functions depending on the application program which has been loaded.
- ❑ **Backspace (BKSP) Key:** Pressing the <BKSP> key causes the cursor to move left and delete a character to the left of the cursor's original position. Pressing <FN> + <BKSP> acts the same as the Insert key on a PC keyboard, toggling whether the pressing of any key inserts a character or overwrites any existing character to the right of the cursor.
- ❑ **Delete (DEL) Key:** Just as on a normal PC, the key deletes characters to the right of the cursor location. Each depression of the key deletes one character.
- ❑ **CTRL+ALT+DEL Keys:** Just as on a normal PC, pressing the <CTRL> + <ALT> + keys at the same time, causes the Apex PDT CPU (Central Processing Unit) to perform a warm boot. Any data stored in the system RAM memory will be lost.
- ❑ **SCAN + POWER Keys:** Pressing the <SCAN> key and the <Power> key at the same time causes the unit to perform a cold boot. During rebooting the display screen will initially go blank for approx. 1.5 seconds.

Front Panel Key Legends

The following tables describe the key functions of the various front panel keys incorporated into the Apex PDT:

	Main Function	SHIFT Function	2 nd (FN) Function
Symbol/Color	Black	Yellow	Green
Symbol	F1	F5	F9
	F2	F6	F10
	F3	F7	F11
	F4	F8	F12

Table 4-1: Function Key Legend

	Main Function	SHIFT Function	2nd (FN) Function
Symbol/Color	Black	Yellow	Green
Symbol	◀	None	Home
	▲	None	Page Up
	▶	None	End
	▼	None	Page Down

Table 4-2: Cursor Key Legend

	Main Function	SHIFT Function	2nd (FN) Function
Symbol/Color	Black	Yellow	Green
Symbol	0)	=
	1	!	<
	2	@	_
	3	#	:
	4	\$,
	5	%	-
	6	^	;
	7	&	
	8	*	+
	9	(“
	SPACE	none	‘
	•	>	/

Table 4-3: Numerical Key Legend




	Main Function	SHIFT Function	2nd (FN) Function
Symbol/Color	Black	Yellow	Green
Symbol	A, a	Changes letter case, when held while pushing the letter key	~
	B, b		Batt  (Battery condition)
	C, c		Con  (Contrast -)
	D, d		Con  (Contrast ^)
	E, e		ESCape
	F, f		`

Table 4-4: Alphabetical Key Legend





	Main Function	SHIFT Function	2nd (FN) Function
Symbol/Color	Black	Yellow	Green
Symbol	G, g	Changes letter case, when held while pushing the letter key	None
	H, h		None
	I, i		Tab
	J, j		None
	K, k		Bkgd  (screen background)
	L, l		Bklt  (backlighting)
	M, m		None
	N, n		None
	O, o		/
	P, p		Prtsc (Print Screen)
	Q, q		?
	R, r		{
	S, s		}
	T, t		Date  (date & time)
	U, u		Break
	V, v		Vol  (Volume)
	W, w		[
	X, x]
	Y, y		Pause
	Z, z		None
	DEL	None	None
	BKSP	None	INS

Table 4-4: Alphabetical Key Legend continued

Apex PDT Special Functions

Your Apex Portable Data Collection Terminal includes several special features that operate as follows:

- ❑ **Battery Status Indication:** The Battery Pack status can be called up at any time by pressing and holding the <FN> key and then the key. A Battery Status display window will appear on the screen (refer to Call-up Battery Message section, p. 4-14).
- ❑ **Contrast Adjust:** The display screen contrast can be manually adjusted by the operator. To *increase* the contrast, press and hold the <FN> key and then the <C> key. To *decrease* the screen contrast, press and hold the <FN> key and then the <D> key.
- ❑ **Screen Background:** The display screen view can be inverted from normal (black on white) by pressing and holding the <FN> key and then pressing the <K> key. Performing the operation again toggles the display.
- ❑ **Backlighting:** For low light level areas, the display screen includes a Backlight. Pressing and holding the <FN> key and then pressing the <L> key causes the light to illuminate. Performing the operation again toggles this function.
- ❑ **Date and Time Display:** The operator can call up a display window showing the Date and Time simply by pressing and holding the <FN> key and the <T> key. Releasing the keys causes the display to return to normal.

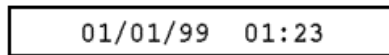


Figure 4-1: Date And Time Display

- ❑ **Volume Control:** The Apex PDT includes a fully functional speaker and volume control adjustment for applications using sound. By pressing and holding the <FN> key and then the <V> key, the unit's volume can be cycled through OFF-LOW-MED-HIGH.
- ❑ **CAPS Lock:** To set the CAPS lock, press and hold the <FN> key, then press the <SHIFT> key. Repeating the operation removes the CAPS lock.

PC Card Installation

The Apex PDT can accept up to two PC Cards (either two Type I or II, or one Type III) for various purposes including network interface adapters, high speed modems, flash drives, RAM disks, or audio capabilities (refer to the Apex PDT Technical Reference Manual for additional details).

PC Card installation is accomplished by removing the Apex PDT End Cap and installing the card pins inward and the label side down. Note that hardware configuration requirements demand that Slot "0" (top) be filled before utilizing Slot "1" (bottom).

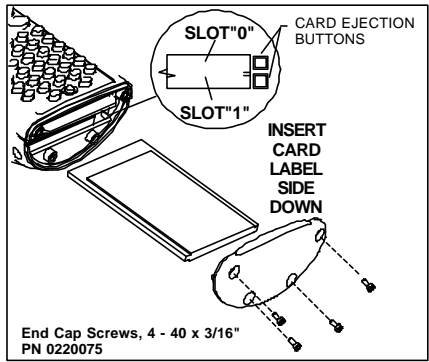


Figure 4-2: PC Card Installation

DIP Switch Positioning

The unit's DIP Switches are located to the right of the internal RS-232 connection (refer to Figure 3-2). *Changing DIP Switch position is NOT recommended or necessary for normal operation.* If a switch position inadvertently gets changed, the following illustration shows the correct position for normal operation (all switches OFF).

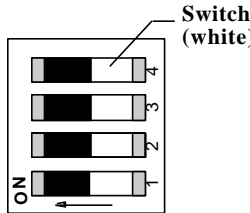


Figure 4-3: DIP Switch Positioning

Battery Charging And Battery Care

The Apex III PDT comes with one Nickel Metal Hydride (NiMH) Battery Pack. The Battery Pack can be fully charged from the completely discharged state within 2 hours through the use of the optional Apex III Dock or External Charger.

The Apex IV PDT utilizes a Lithium-Ion (Li-Ion) Battery Pack. The Apex IV Battery Pack is charged by removing the Battery Pack from the unit and placing it in the Lenmar® BCV636 Battery Charger. Colored LED's indicate when the Battery Pack is charging or fully charged.

The Apex III Dock and Apex PDT Battery Chargers can be purchased separately, allowing for greater flexibility with the user's requirements. The following manual sections provide a brief description of these units and their capabilities.

Note: Since Apex PDT Battery Packs are of NiMH or Li-Ion composition, they DO NOT succumb to memory (hysteresis) loss like Nickel-Cadmium (Ni-Cd) batteries. *Apex III Battery Packs can therefore be charged while in any state-of-charge and do not require full discharge prior to charging; however, it is still recommended that the Battery Pack be fully discharged periodically to reset the internal gas gauge circuitry.*

Apex III Charging Products

Apex III Dock

The Apex III Dock is a docking station incorporating space saving features such as an IR interface, slip-in charging capabilities, and a spare Battery Pack charging slot. The unit can be placed on a flat surface or conveniently wall mounted depending on your particular requirements.

With these features the Apex III Battery Pack can be charged without removal from the unit, and communications to the Apex III can be conducted while mounted in the Dock. By using the incorporated charging slot, a spare Battery Pack can be simultaneously charged ensuring a fully charged spare Battery Pack at all times. Refer to the Apex III Dock Illustration Figure 4-6.

Apex III External Charger

The Apex III External Charger provides simultaneous charging for up to two Apex III Battery Packs. With its small size due to the piggyback design, this unit is convenient for placement in warehouse areas or areas where space is at a premium. Like the Apex III Dock, the External Charger can be either desk or wall mounted for convenient placement. Battery Packs must first be removed from the Apex III for placement in the charging unit.

See External Charger Illustration Figure 4-5.

Apex IV Charging Products

The Apex IV Battery pack is charged using the Lenmar[®] BCV636 Battery Charger. The unit is fully automatic, and utilizes colored LED's to indicate the Battery Pack's charging status (charging or fully charged).

Apex III Battery Pack Charging

Charging the Apex III Battery Pack is easily performed regardless of the battery charging method. Battery charging automatically occurs when an Apex III Battery Pack is inserted into a charging slot of the External Charger or Apex III Dock, or when the Apex III unit is slipped in to the Dock (with the Battery Pack still installed in the unit ⇒ slip-in charging capabilities).

Battery Pack Removal and Installation

Note: Refer to the Battery Message section (p. 4-13) of this manual for information on when to change the Battery Pack.

1. *Place the Apex III PDT in the Suspend mode (p. 4-1), then remove the Apex III Battery Pack by pressing inward on the Battery Pack Release Tab, pulling outward on the top of the Battery Pack, and removing the Battery Pack from the battery bay.*
2. *Install a charged Apex III Battery Pack in the Apex III PDT by placing the bottom of the Battery Pack into the battery bay. The holddown tab (not shown) will fit into the slot located at the bottom of the Battery Bay. Tilt the top of the Battery Pack towards the Apex III PDT until the Battery Pack Release Tab snaps into position, securing the Battery Pack in place.*

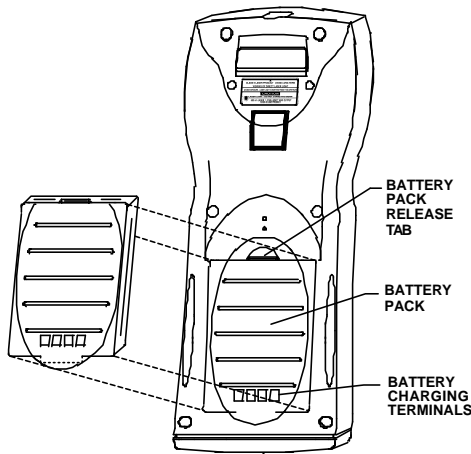


Figure 4-4: Apex III Battery Pack Removal

Charging A Battery Pack In A Charging Slot

Place the depleted Apex III Battery Pack into the charging slot of the Apex III External Battery Charger or the Apex III Dock, with the battery terminals facing downward (this will properly align both the inside and outside contacts for normal use and charging – refer to the External Charger Illustration Figure 4-5).



WARNING!

DO NOT OPERATE THE APEX III PDT ONCE IT HAS POWERED DOWN DUE TO A LOW BATTERY CONDITION

DO NOT attempt to operate the Apex III PDT once it has powered down due to a low battery condition. When the Battery Pack is exhausted, leave the exhausted Battery Pack in the Apex III until you can either charge it in place by placing the Apex III in the Apex III Dock, or swap the Battery Pack with a charged Battery Pack. Information in volatile memory (RAM) will be preserved since the Apex III PDT is configured so that even with an exhausted Battery Pack enough energy is retained to maintain the information for an extended period of time. DO NOT leave the unit WITHOUT a Battery Pack for more than 5 minutes.

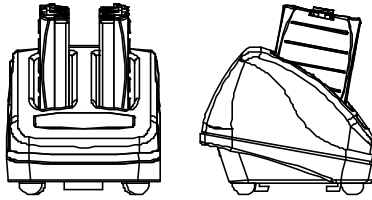


Figure 4-5: External Charger

Charge the Apex III Battery Pack in the Dock with the Battery Pack still installed in the unit: Place the Apex III in the normal position within the slip-in cradle. The battery charging terminals will self-align with the Apex III Battery Pack and the unit will charge automatically (see Dock illustration Figure 4-6).

Re-installing a Battery Pack into the Apex III PDT: Align the lower Battery Pack tab in the battery bay lower slot and press the upper portion of the Battery Pack inward until an audible click is heard (indicating the upper tab has engaged). The battery bay is the recessed area on the back of the Apex III where the Battery Pack resides during normal operation.



WARNING!

ONLY USE COMPSEE, INC. APPROVED CHARGERS

Only charge the Apex III Battery Packs in the Apex III Dock or the Apex III External Charger. **DO NOT** use chargers from other manufacturers. The Battery Pack warranty will be voided and Battery Pack Damage could occur.

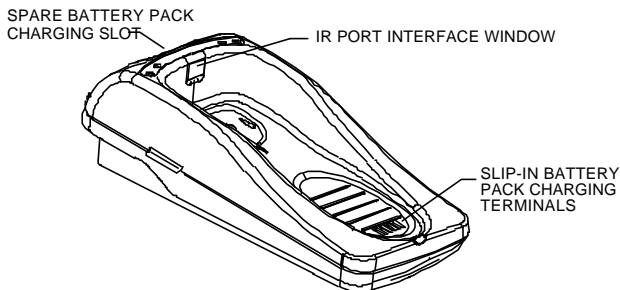


Figure 4-6: Apex III Dock

Note: To ensure proper operation of the Apex III Battery Pack gas gauge, the Battery Pack should occasionally be allowed to fully discharge. This ensures a full charge cycle and resets the gas gauge circuitry.

Apex IV Battery Pack Charging

Battery charging automatically occurs when an Apex IV Battery Pack is inserted into the energized Lenmar[®] BCS636 charging slot.

1. Slide the Lithium Ion (Li-Ion) adapter plate into an energized BCS636 Battery Charger making sure that the adapter contacts are aligned with the appropriate contacts of the charging slot.
2. Slide the Apex IV Battery Pack into the adapter making sure that the Battery Pack contacts are properly aligned with the charging contacts on the Li-Ion adapter.
3. Once the Apex IV Battery Pack has been properly positioned, the Red (CHG) LED will illuminate indicating that the Battery Pack is being charged. When the Battery Pack has reached full charge, the Red (CHG) LED will go out and the Green (FULL) LED will illuminate indicating that the Battery pack has been fully charged.



WARNING!

DO NOT PRESS THE REFRESH BUTTON IN THE LOWER RIGHT HAND CORNER OF THE BATTERY CHARGER BASE UNIT WHILE AN APEX IV LITHIUM ION (LI-ION) BATTERY PACK IS IN THE CHARGING UNIT! DAMAGE TO THE APEX IV BATTERY PACK AND/OR THE CHARGING UNIT COULD OCCUR!

The Lenmar[®] BCS636 Battery Charger is capable of charging various types of battery packs, including those of Nickel Cadmium (Ni-Cd) composition. The Refresh button should only be used if charging Ni-Cd or Ni-MH batteries.

Battery Pack Removal and Installation

Note: Refer to the Battery Message section (p. 4-13) of this manual for information on when to change the Battery Pack.

3. *To remove an expended Battery Pack, place the Apex IV PDT in the Suspend mode (p. 4-1., Remove the Battery Pack from the battery bay by pressing down on the battery bay door clip and pulling outward. Remove the Battery Pack from the battery bay by pushing the Battery Pack towards the hinged side of the battery bay door. The Battery Pack clips will be released and the Battery Pack can be removed from the battery bay.*
4. *To install a charged Battery Pack in the Apex IV PDT, position the Battery Pack with the contacts inward and opposite from the battery bay door hinge. With the Battery Pack centered and against the hinge wall of the battery bay, hold the bBattery Pack down and push away from the hinged wall of the battery bay. Fully close and latch the battery bay door to secure the Battery Pack within the battery bay.*

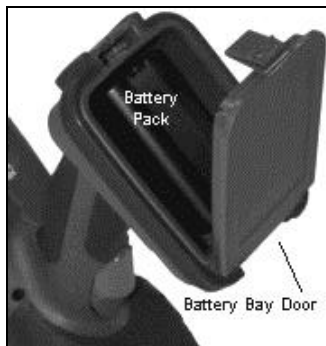


Figure 4-7: Apex IV Battery Pack Removal Illustration

Battery Related Messages

Battery State Warnings

The Apex PDT is equipped with a change Battery Warning alarm. The alarm actuates when the unit's Battery Pack charge has been reduced to a low level. An audible alarm (beep) will be heard and a "Change Battery" warning will appear on the screen as follows:

Change battery!

Figure 4-8: Change Battery Warning

When this warning appears it is recommended that the user change the Battery Pack shortly thereafter, since the Battery Pack will only continue to provide sufficient power to run the unit for a short period of time.

**CAUTION!**

*PLACE THE UNIT IN SUSPEND AFTER RECEIVING
A CHANGE BATTERY MESSAGE*

We recommend that the user place the unit in “Suspend” and change to a fully charged Battery Pack or recharge the installed Battery Pack after receiving the “*Change Battery*” message. After this operation, pressing the “Suspend” button again will return the unit to the position of the last performed operation.

If use of the unit is continued after receiving the “*Change Battery*” warning, the Battery Pack could reach the “*Battery Critical*” level preventing the unit from being used. When the “*Battery Critical*” level is reached, the unit will shutdown and can NOT be restarted until the Battery Pack is replaced with a charged Battery Pack or the installed pack is recharged.

Apex III Call-up Battery Messages

In addition to the Battery Warning messages discussed in the previous section, the Apex III is equipped with several messages relating to the Battery Pack status. Your Apex III Battery Pack is equipped with circuitry allowing the unit to communicate with the Battery Pack to determine related conditions. The user can access this information at any time by pressing and holding the <FN> key, then pressing the key (<FN> +).

When the unit is mounted in the Dock and the <FN> + keys are pressed, the following message will be displayed:

Charging...

Figure 4-9: Charging Indication

When the Apex III unit is being used in the normal operating mode and the <FN> + keys are pressed, the amount of the Battery Pack charge remaining will be displayed:

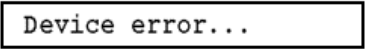


Battery: 10%

Figure 4-10: Remaining Charge Indication

Note: Apex IV Battery Packs do not include internal gas gauge circuitry. A “*Device Error*” message will occur in lieu of a Call-up Battery Message (Apex III PDT) in response to pressing <FN> + .

If a communications error should occur between the Apex III unit and the battery state reading device in the Battery Pack, and the <FN> + keys are pressed, the following message will be displayed:



Device error...

Figure 4-11: Battery Communications Error

If the “Device error” message is received, verify that the Battery Pack is fully seated in the battery bay. IF the Battery Pack is fully seated AND the message continues to occur when the <FN> + keys are pressed, contact Compsee Inc. Technical Support.

5 HANDLING AND CARE

General Information

Your Apex unit is constructed of high impact ABS plastic for durability and light-weight handling. While the unit is sturdy in construction, dropping the unit could adversely affect the delicate electronic components housed within. It is therefore recommended that you handle the unit carefully to prevent dropping and undue shock.

The soft touch keys housed within the unit's front panel DO NOT require excessive pressure for proper operation. The use of continued excessive force during usage could result in damage to the individual keys and cause key failure.

Cleaning Instructions

The LCD Screen Window, IR Window, and Laser Window can be easily scratched which could adversely affect performance. Care should be taken when handling the unit, not to slide or lay these areas on sharp or rough surfaces. In addition, these areas should be kept clean and free of dust, dirt, or lubricants to promote error free operation. Only clean these areas with a soft cloth and a non-alcoholic cleaning solution such as an all-purpose glass cleaner.

For general cleaning, the rest of the unit can be wiped down with the same solution or a clean, slightly damp cloth.



CAUTION!

Do NOT use solvents, alcohol, or petroleum based cleaners to clean the LCD Screen Window, IR Window, or Laser Window. Cracking or damage could result with a subsequent loss in operational capabilities.



WARNING

DO NOT place or drop the unit into any liquid or solvent. Submerging the unit in any liquid can cause permanent damage to the electronic circuitry and Battery Pack, preventing the unit from operating properly or at all.

How to Care For Your Apex PDT

- ❑ DO NOT place the unit on rough surfaces, which could scratch the Laser Window.
- ❑ DO NOT allow the Display Screen Window, IR Window, or Laser Window to collect dirt or dust, get scratched or streaked.
- ❑ DO NOT use excessive pressure when using the touch keypad on the front of the Apex unit.
- ❑ DO NOT submerge the Apex unit in any liquid.
- ❑ DO NOT drop the unit.
- ❑ DO NOT clean the Display Screen Window, IR Window, or Laser Window with any alcohol or petroleum based cleaner or cleaner containing abrasives.
- ❑ DO NOT charge the Apex PDT Battery Pack with chargers other than those designed for use with the Apex PDT Battery Packs. Use of these products could cause damage to the Battery Pack and void the Battery Pack Warranty.
- ❑ Store the unit in a clean dry location away from rain, moisture, or dampness.
- ❑ Keep the unit from areas of excessive heat.
- ❑ Keep the unit clean and free of dust, dirt, or liquid substances.

Battery Pack Life

The average Apex PDT Battery Pack life expectancy is 400 charge cycles, where a charge cycle encompasses the period of use to full depletion then full charge. After the 400 cycle period, the remaining Battery Pack capacity will be approximately 80%.

- ❑ Avoid interruptions in usage by always keeping a spare Battery Pack on hand.
- ❑ Alternate spare Battery Pack use so that all Battery Packs receive uniform use.
- ❑ Battery Packs can lose approximately 1.1% of their charge per day sitting on the shelf. Therefore a fully charged Battery Pack not kept in the charging slot will require recharging in less than 100 days.

6 SUPPORT INFORMATION

Apex PDT Associated Part Numbers

Apex III Associated Part Numbers		
No.	Description	Part Number
1.	Cable, Apex II & III to PC RS-232 (DB-9)	0227001
2.	Apex III Battery Pack, NiMH, 1500 mAh	0214501
3.	Apex IV Battery Pack (std), Li-Ion, 3100 mAh	0214064
4.	Apex IV Battery Pack (extended use), Li-Ion, 4650 mAh	0214065
5.	Apex III External Charger (charging unit only)	COAA3CHRG
6.	Apex IV Charger (US 120 VAC cord)	0214066
7.	External Charger Kit 1 (w/power supply & US 120 VAC cord)	COAA3CHRG1
8.	External Charger Kit 2 (w/power supply, no AC line cord)	COAA3CHRG2
9.	Apex III Dock (docking station only)	COAA3DOCK
10.	Apex III Dock Kit 1 (w/power supply & US 120 VAC cord)	COAA3DOCK1
11.	Apex III Dock Kit 2 (w/power supply, no AC line cord)	COAA3DOCK2
12.	Apex III Program Generator Software	COAA3PG0000
13.	Power Supply 9 VDC (no AC line cord)	0212014
14.	Cord Set, US, 120 VAC	0212013
15.	Vehicle Lighter Adapter (Cigarette lighter adapter cable for Dock/External Charger Power Supply)	0228510
16.	Standard End Cap	0220508
17.	Serial End Cap Kit (RS-232)	COAA3SEC01
18.	Soft-Side Case (Form fitted Apex III PDT case)	02MC937
19.	Soft Side Holster (Hip Holster for Apex III PDT)	02MC938
20.	Lanyard (carrying strap)	0220521
21.	Compsee Product Support CD	02MC142
22.	Apex III User's Manual (Hard Copy)	COAM30001
23.	Apex III Technical Reference Manual (Hard Copy)	COAM30002

Note: Since the manual publication date additional Part Numbers may be available. Call our Customer Service line or check our website at: www.compsee.com.

Apex PDT Part Number Breakdown

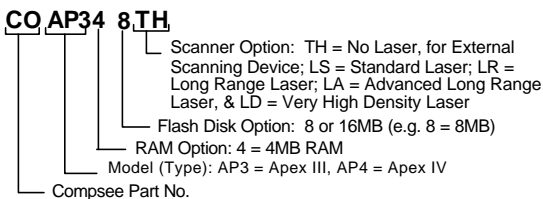


Figure 6-1: Apex PDT Part Number Illustration

Technical Support

Technical Support on the Apex PDT is available from Compsee, Inc. through the following methods:

Via our Website: www.compsee.com

E-mail: support@compsee.com

Phone: 1 (800) 768-5248

Before calling please follow these guidelines:

- ❑ Refer to the appropriate sections of this manual to ensure you have correctly performed the operation or function in question.
- ❑ Have the unit Model No. and Serial No. in-hand (located in the Battery Bay).
- ❑ Have a complete description of the problem as well as any pertinent information on when it occurred.

Service And Repair

Before returning any equipment for service please read ALL of the information within this section. Reading the information first will preclude shipping errors or misunderstandings. Thank you!

Compsee Inc. provides U.S. service for its bar code products via a Service Center located at its manufacturing facilities in Mt. Gilead, North Carolina, USA 27306. Service outside the U.S. is provided through the use of International Authorized Service Centers. Check the Compsee Inc. website (see above) for the latest Authorized Service Center listing.

The Apex PDT carries a Limited 1 Year Warranty from the date of purchase. Specific warranty language is contained in the front section of this manual.

Factory service is also available on a time and material basis. If you use this type of service agreement, you will be advised of a not-to-exceed price for repair when you request a Return Material Authorization (RMA) for the product (see the following page for additional RMA information).

Return Material Authorization (RMA)

Products may be returned for repair after obtaining a Return Material Authorization (RMA) from Compsee Customer Service. Call one of the following numbers to receive your Return Authorization

1-321-724-4321 or 1-800-628-3888

Before calling the Compsee Customer Service line you should have the following information in hand:

- The unit Model Number
- The unit Serial Number
- An accurate description of the problem
- Your companies name
- When and how you wish to ship the unit
- A return address
- A contact person's name and telephone number

This information is necessary for us to complete an RMA for the product.

Note: We CANNOT accept materials that are returned without an RMA number.

The RMA number will ensure that the problem described is corrected and the unit is repaired and returned in a timely fashion.

Normal Repair time is 10 days from receipt of the equipment.

Shipping costs to Compsee Inc. are to be paid for by the user. Compsee will pay for the return shipping in the same manner that the equipment was originally shipped to the repair facility.

Unit Specifications

<p>Physical Dimensions</p> <p><i>Apex III</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Length: 8.4 in. (21.34 cm) <input type="checkbox"/> Width: 3.32 in. (8.43 cm) <input type="checkbox"/> Depth: 1.8 in. (4.57 cm) <input type="checkbox"/> Weight (including Battery Pack) <ul style="list-style-type: none"> ➤ Without Laser: 18.1 oz. (513.14 g) ➤ Laser/No Wireless: 18.6 oz. (527.31 g) ➤ Without Laser/Wireless: 20.1 oz. (569.84 g) ➤ Laser w/Wireless: 20.6 oz. (584.01 g) <p><i>Apex IV</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Length: 8.4 in. (21.34 cm) <input type="checkbox"/> Width: 3.32 in. (8.43 cm) <input type="checkbox"/> Height: 7.75 in. (19.68 cm) <input type="checkbox"/> Weight (including Battery Pack) <ul style="list-style-type: none"> ➤ Laser/No Wireless: 25.0 oz. (708.75 g) ➤ Laser w/Wireless: 27.0 oz. (765.45 g)
<p>Construction</p> <p>Industrial, high-strength polycarbonate/ABS-blend plastic, U/L rated @ 94 VO</p>
<p>Keypad</p> <ul style="list-style-type: none"> <input type="checkbox"/> 56-key, full alphanumeric, non-glare <input type="checkbox"/> 4 dedicated function keys, 8 shifted (12 total) <input type="checkbox"/> Programmable foreign character set generator <input type="checkbox"/> Large Scan key <input type="checkbox"/> Large numeric keys
<p>Display</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fully programmable graphic LCD <input type="checkbox"/> Backlight <input type="checkbox"/> Large 240 × 160 pixel LCD matrix <input type="checkbox"/> Standard format (30 × 10), up to 30 × 20 characters (selectable) <input type="checkbox"/> Actual Area (mm): 57.58H × 38.38V
<p>PC Card</p> <p>2 slots –PC Card, user accessible (2 Type I or II, or one Type III)</p>
<p>Speaker</p> <ul style="list-style-type: none"> <input type="checkbox"/> Voice capable <input type="checkbox"/> User adjustable volume. Software programmable for volume, duration, and pitch
<p>Integrated Laser Scanner</p> <ul style="list-style-type: none"> <input type="checkbox"/> Readable display while scanning <input type="checkbox"/> Scan rate of 35 ± 5 scans/sec <input type="checkbox"/> Indicators: Good read, Scan <input type="checkbox"/> Standard Laser Ambient Light Immunity <ul style="list-style-type: none"> ➤ Artificial Light: 450 ft-candles (4,844 lux) ➤ Sunlight Light: 10,000 ft-candles (107,640 lux) <input type="checkbox"/> Long Range & Very High Density Laser Ambient Light Immunity <ul style="list-style-type: none"> ➤ Artificial Light: 450 ft-candles (4,844 lux) ➤ Sunlight Light: 8,000 ft-candles (86,112 lux)

Specifications continued

<p>Integrated Laser Scanner continued</p> <ul style="list-style-type: none"> <input type="checkbox"/> Advanced Long Range Laser Ambient Light Immunity <ul style="list-style-type: none"> ➤ Artificial Light: 450 ft-candles (4,844 lux) ➤ Sunlight Light: 4,000 ft-candles (43,056 lux)
<p>Communications</p> <ul style="list-style-type: none"> <input type="checkbox"/> Infrared (up to 115 Kbps data transfer rate) <input type="checkbox"/> RS-232 (internal connection or with optional Serial End Cap) <input type="checkbox"/> Compsee's Apex III PDT File Transfer Utility (YMODEM protocol) along with a PC based communications utility (e.g. HyperTerminal®) <input type="checkbox"/> High Speed UART (16550-compatible – supports up to 115 Kbps Serial transfer rate)
<p>Microprocessor</p> <ul style="list-style-type: none"> <input type="checkbox"/> AMD Elan® AM486™ SC400, Low power 32-bit microprocessor w/System logic <input type="checkbox"/> 8 KB L1 cache <input type="checkbox"/> 33 MHz clock speed
<p>Memory</p> <ul style="list-style-type: none"> <input type="checkbox"/> 8 or 16 MB Flash (DOS, Application, and Data storage) <input type="checkbox"/> 4 MB RAM (for system operation and virtual disk data storage) <input type="checkbox"/> PC Card support for up to 64 MB Linear Flash cards, 512 MB ATA Flash, & 64 MB RAM
<p>Operating System/BIOS</p> <ul style="list-style-type: none"> <input type="checkbox"/> Operating System: Industry Standard Datalight ROM-DOS™ 6.22 <input type="checkbox"/> BIOS: Phoenix Pico™ BIOS Version 4.05
<p>Power Options</p> <p><i>Apex III</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Rechargeable 1500 mAh NiMH Battery Pack (400 charge duty cycle) <input type="checkbox"/> Apex III Dock with IR interface and one fast charge Battery Pack charging slot <input type="checkbox"/> Apex III External Charger (two fast charge Battery Pack charging slots) <p><i>Apex IV</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Std. Rechargeable 3100 mAh Li-Ion Battery Pack (400 charge duty cycle) <input type="checkbox"/> Extended Use Rechargeable 4650 mAh Li-Ion Battery Pack (400 charge duty cycle)
<p>Environmental</p> <ul style="list-style-type: none"> <input type="checkbox"/> Operating Temp: 14° F to 122° F (–10° C to 50° C) <input type="checkbox"/> Storage Temp: –4° F to 158° F (–20° C to 70° C) <input type="checkbox"/> Drop Tested for (4) 4 ft. drops on concrete (all four corners) <input type="checkbox"/> Chemical and splash resistant
<p>Regulatory Approvals</p> <ul style="list-style-type: none"> <input type="checkbox"/> FCC (part 15, Class B) <input type="checkbox"/> CDRH and IEC laser Class 2 <input type="checkbox"/> CE

Specifications continued

Supported Bar Code Symbologies

- Codabar
- Code 11
- Code 128
- Code 39 (full ASCII)
- Code 39 (standard)
- Code 93
- EAN 8/13
- JAN 8/13
- Identicode 2 of 5
- Industrial 2 of 5
- Interleaved 2 of 5
- Matrix 2 of 5
- MSI Plessey
- UPC/EAN (with 2 or 5 character supplemental)
- UPC-A/E

Notes

APPENDIX A - SAMPLE BAR CODES

The following sample bar codes can be used to test the Apex III unit upon initial receipt or during application programming.

Code 3 of 9



A1B2C3

Codabar



A123456C

UPC-A



02837482783

EAN-8



50312078

Sample Bar Codes continued

Code 128



A1B2C3

Interleaved 2 of 5



01234567890123

Code 11



^11223344^

EAN-13



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**Compsee, Inc.
Contact Information**

www.compsee.com

1 (800) 628-3888



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