CE8000 & CE8000LS

USER'S GUIDE

_MAN40-A (CMU040-A3f)

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A WORD FROM DAP TECHNOLOGIES

Dear MICROFLEX CE8000(LS) Series Owner:

Thank you for purchasing a DAP Environmentally Rugged Hand-Held Computer product. It is our pleasure to welcome you to our worldwide family of satisfied MICROFLEX owners. Manufactured under the rigid international quality standards of ISO 9001, DAP products have earned a reputation for quality and field reliability.

Please read this USER'S GUIDE carefully as to enjoy the full range of capabilities characteristic of DAP's continuing efforts to provide advanced portable computing technology. The User's Guide provides you with all the information you will need to operate the unit. Should you need information about a particular application, refer to the User's Guide provided with that application.

While we would expect you to receive consistent and reliable performance from your CE8000(LS) Series units, we do recommend you consider protecting your investment by purchasing a DAP CARE Maintenance Agreement. You will enjoy all the special benefits by signing up now, even though you will not be billed until the end of your warranty period. Please contact your sales representative for more information and for DAP CARE rates.

DAP TECHNOLOGIES continues to develop exciting new hardware products, as well as enhancements to existing products, that will greatly increase the capabilities through the life of your current system.

If, for some unexpected reason, this product does not meet our printed specifications and your dealer is unable to make a satisfactory adjustment, please write, fax or call us at the applicable DAP address shown below:

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Every effort has been made to ensure that the information contained in this document is accurate and up-to-date. Although DAP TECHNOLOGIES has reviewed the document carefully, it cannot assume any responsibility for any consequences resulting from possible errors or omissions.

DAP TECHNOLOGIES reserves the right to make changes and improvements to this product without notice.

The information in this manual refers to the CE8000 Series. This is a generic name indicating that the information is valid for the CE8000 and CE8000LS

Consequently, except where otherwise indicated, it covers information for the CE8000 and CE8000LS

This user's guide applies to:

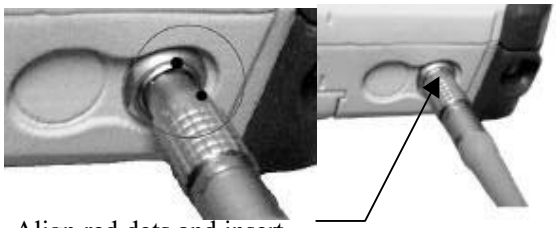
CE8000 Series unit running Windows CE 3.00 Pack D or earlier and manufactured after April 1st, 2003

Please report your comments and problems to us to make this document more accurate (support@qbc.daptech.com).

See section Advance User Information to find where to download and access more information about this product.

PRECAUTIONS

- Refer to this manual when inserting or removing batteries, cables or external peripherals.
- Operate and store your Microflex within the limits of temperature specified in this manual.
- Do not use any pointed objects on the keyboard, door or mechanisms. Doing so can damage the unit
- Use the stylus supplied by DAP TECHNOLOGIES with the unit since it has been designed with a non-abrasive material that cannot scratch or deteriorate the touch membrane.
- Never expose battery to extreme heat or dispose of in a fire
- Any attempts to open the case of a CE8000 Series unit will void the warranty
- The LEMO communication connector for the CE8000 Series unit has proprietary pin-out distribution. Any attempt to connect cables other than the ones supplied or recommended by DAP TECHNOLOGIES could result in damage to the CE8000 or CE8000LS.
- If you need to use a cable other than the ones supplied or recommended by DAP, we suggest you contact DAP TECHNOLOGIES Technical Support Department beforehand.
- When removing the Lemo cable, **DO NOT TWIST** the cable connector. Using the gray metal connector of the Lemo cable, pull back on the cable to remove it from the connector.
- To insert the Lemo cable, align both red dots found on the cable and on the CE8000 connector than, insert the cable into the connector of the unit.



Align red dots and insert the connector in place

WARRANTY STATEMENTS

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MICROFLEX AND ACCESSORIES LIMITED WARRANTY

As manufacturer, DAP TECHNOLOGIES will replace or repair, at its discretion, any products that prove to be defective, in either material or workmanship, for a period of one year following the purchase date of the MICROFLEX hand-held computer and for a period of nineteen (90) days following the purchase date of MICROFLEX accessories sold by DAP TECHNOLOGIES. The warranty only cover the material and workmanships

This warranty does not cover damages caused by misuse, abuse, neglect, or occurred during shipping or storage; the warranty does not also cover any modification or servicing by any one other than a DAP TECHNOLOGIES Authorized Service Center.

DAP TECHNOLOGIES cannot be held responsible for any damage caused by the misuse of the MICROFLEX or by any other software or hardware added to the MICROFLEX.

The operating system, MS-DOS®, Windows CE and all other software sold or supplied by DAP TECHNOLOGIES are provided as is, without any warranty, either expressed or implied.

In no event shall DAP TECHNOLOGIES be liable for any direct, indirect damages or damages of any kind, including but not limited to damages on account of the loss of present or prospective profits arising out of or in connection with the use or failure of performance of the product. No claim may be made against DAP TECHNOLOGIES under this head, whether arising from contractual, extra-contractual or statutory liability.

The warranty allowed hereby excludes all other legal warranty related to the quality of the product or its capacities to fulfill specific purposes, including all warranties granted by the United Nations Convention on Contracts for the International Sales of Goods, the application of such Convention being expressly excluded

RETURN MERCHANDISE AUTHORIZATION (RMA)

SERVICING

In order to have your product serviced, you must first obtain a Return Material Authorization (RMA) from DAP TECHNOLOGIES. You may then return your MICROFLEX, correctly enclosed in its original packaging if possible, to your Value Added Reseller (VAR), an Authorized Service Center, or directly to DAP TECHNOLOGIES. Service under the conditions of this warranty requires prepaid shipment from your facility to a Service Center.

The MICROFLEX and its accessories have no user serviceable parts.

To obtain a RMA you can make your request by phone or use our on-line form at:

http://www.daptech.com/rma

EXTENDED WARRANTY ON DAP MANUFACTURED PRODUCTS

The original purchaser may, at any time during the initial warranty period, extend the warranty through purchase of a DAP CARE Service Contract. For more information, contact DAP TECHNOLOGIES

CE CONFORMITY CE8000

The CE8000 meets the 89/336/EEC directive intent for Electromagnetic Compatibility Compliance when used with DAP's accessories and cables.

The compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

Emissions:

EN 55022	Radiated & conducted, CLASS B
CISPR 22:1997-11	For CLASS B

EN 61000-6-2:2001, Electromagnetic Immunity:

IEC 61000-4-2:1995	Electrostatic discharge (ESD)
IEC 61000-4-3:1996	Radio Frequency Electromagnetic Field Amplitude Modulated
IEC 61000-4-4:1995	Fast Transients
IEC 61000-4-5:1995	Surges Line-to-earth, Line-to-Line
IEC 61000-4-6:1996	Radio Frequency Continuous Conducted
IEC 61000-4-11:1994	Voltage Interruption

CE CONFORMITY CE8000LS

The CE8000LS meets the 89/336/EEC directive intent for Electromagnetic Compatibility Compliance when used with DAP's accessories.

The compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

Emissions:

EN 55022	Radiated & conducted, CLASS B
CISPR 22:1997-11	For CLASS B

EN 61000-6-2:2001, Electromagnetic Immunity:

IEC 61000-4-2:1995	Electrostatic discharge (ESD)
IEC 61000-4-3:1996	Radio Frequency Electromagnetic Field Amplitude Modulated
IEC 61000-4-4:1995	Fast Transients
IEC 61000-4-5:1995	Surges Line-to-earth, Line-to-Line
IEC 61000-4-6:1996	Radio Frequency Continuous Conducted
IEC 61000-4-11:1994	Voltage Interruption

Safety of Laser Product

IEC 60825-1:1993+ A1:1997 + A2:2001 Class 2, Laser Safety Approvals

US Federal (FDA) Regulation

21 CFR Chapter I, Subpart J, Part 1040.10

Performance Standards for Light Emitting Products

(Class II Laser Product)

FCC, AS/NZA STATEMENT & COPYRIGHT POLICY

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

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 when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

AS/NZA 3548: 1995 for Class B

Powerline Conducted Emission Para. No. 5; Radiated Emission Para. No. 6

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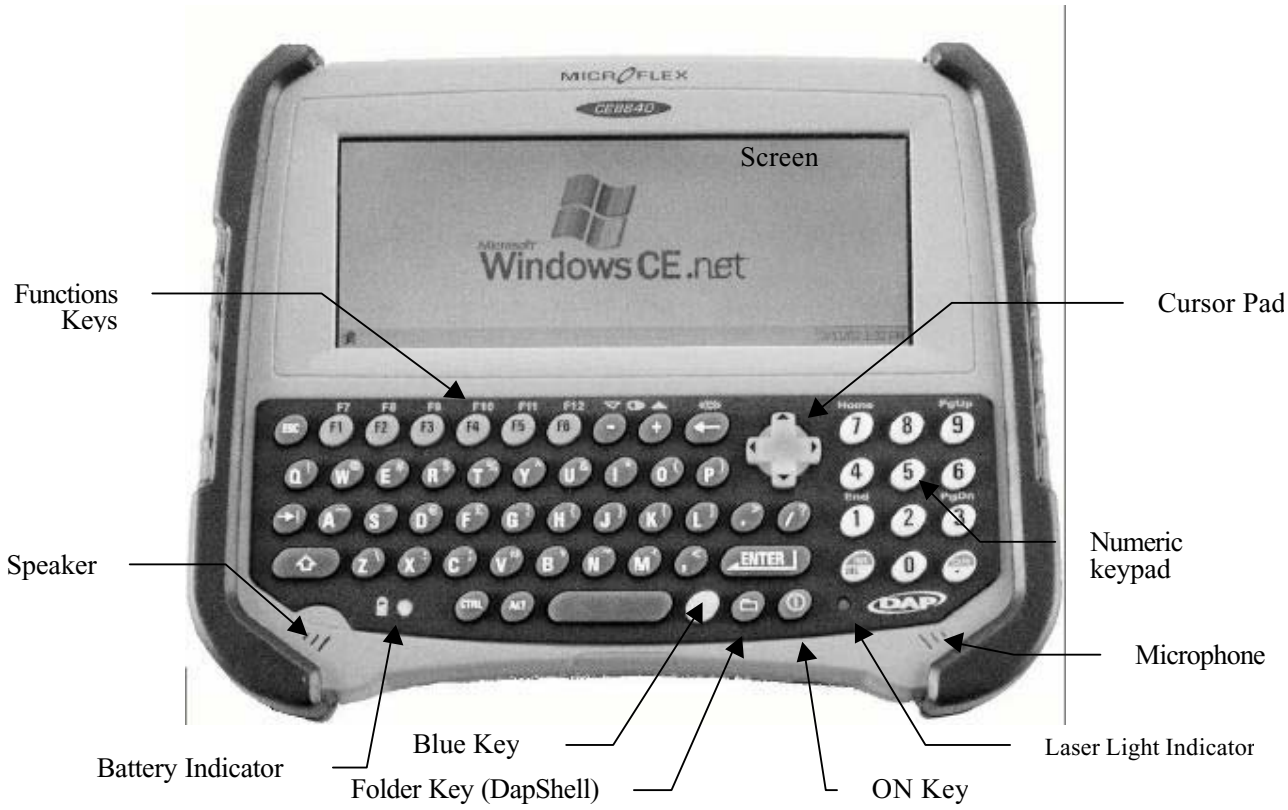
CE8000 & CE8000LS
Front and Top Views



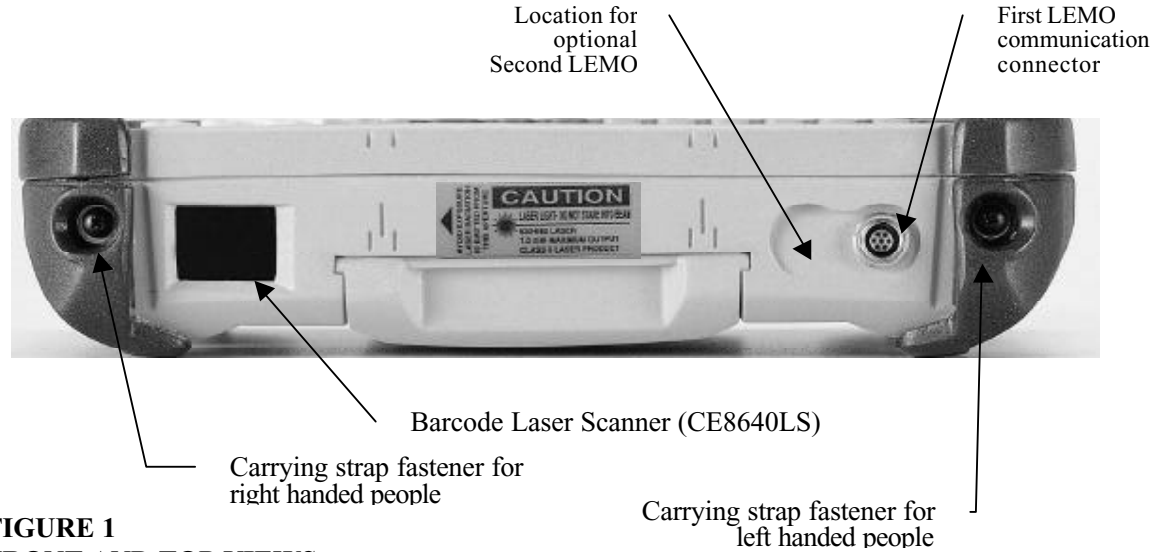


FIGURE 1
FRONT AND TOP VIEWS

CE8000 & CE8000LS
Rear and Bottom Views

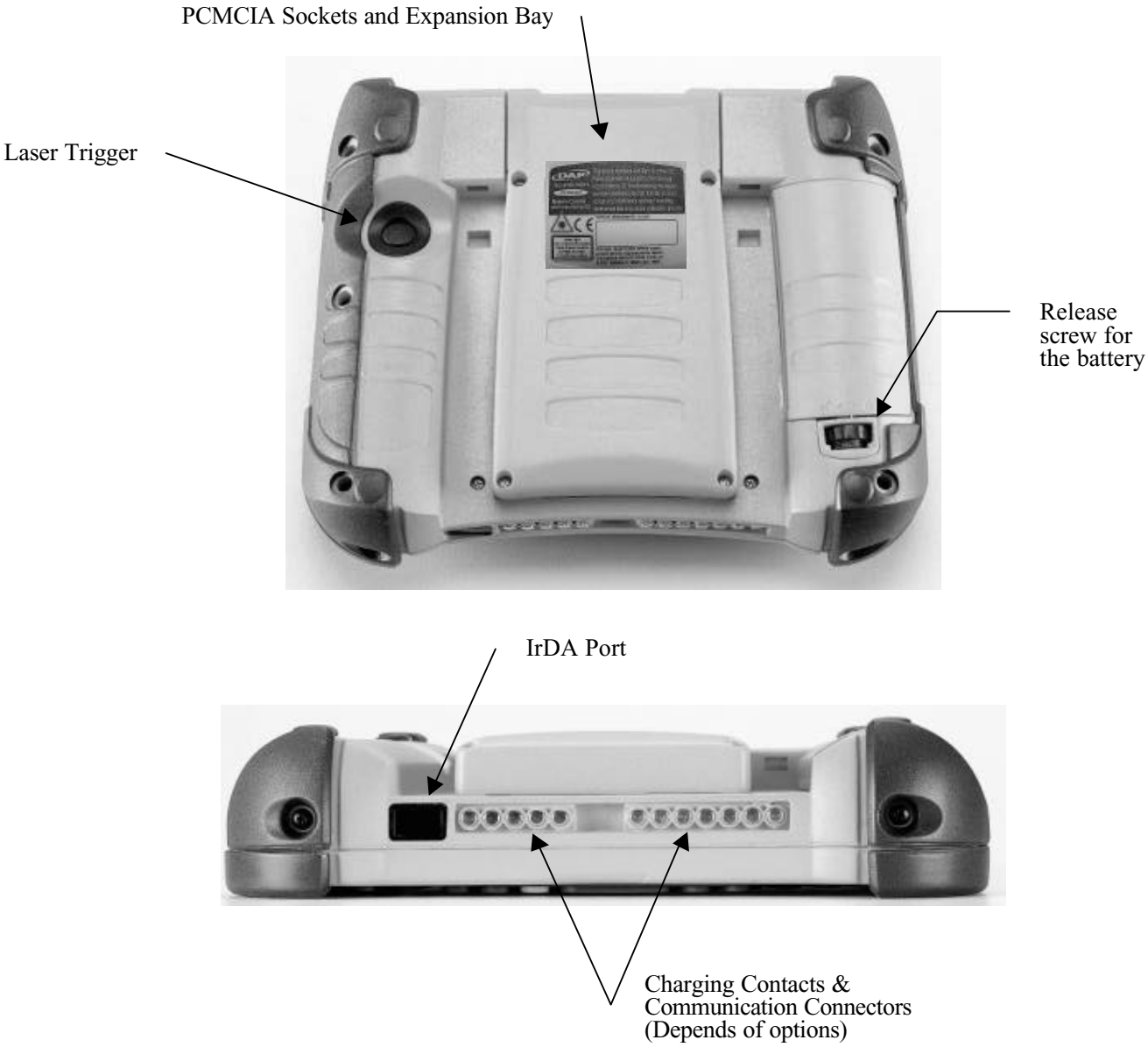


FIGURE 2
REAR AND BOTTOM VIEWS

CE8000 & CE8000LS
SECURITY NOTICE

CAUTION – Use of commands or procedure other than those specified herein may result in hazardous laser light exposure.

Do not intentionally look at the laser beam

CE8000 & CE8000LS
KEYBOARD TEMPLATE VIEW

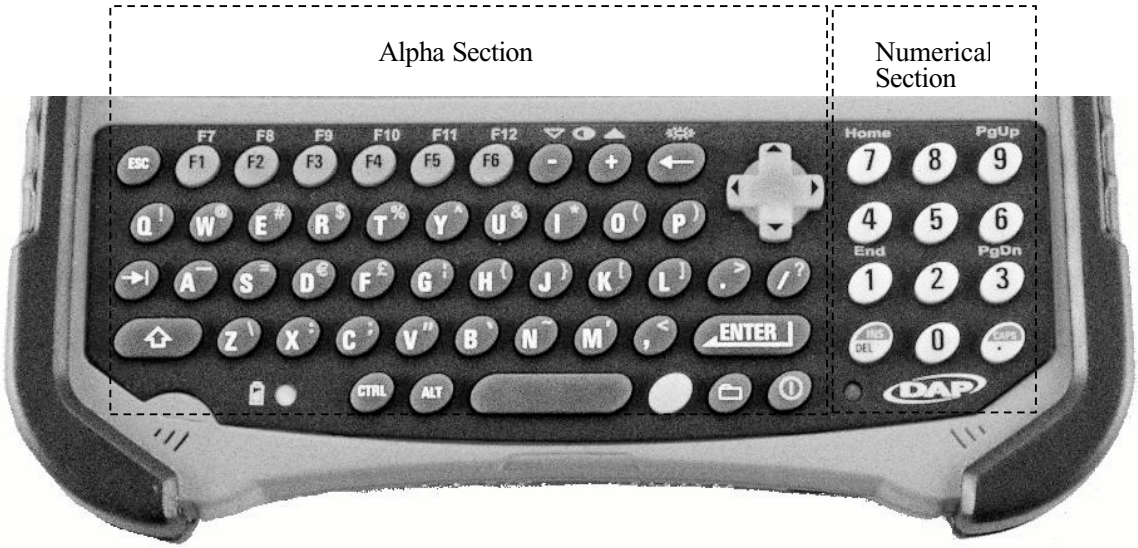


FIGURE 4
KEYBOARD TEMPLATE VIEW

GET STARTED

The information in this manual refers to the CE8000 Series unit. This is a generic name regrouping both CE8000 and CE8000LS

Consequently, except where otherwise indicated, it covers information for the CE8000 and CE8000LS.

Your new CE8000 Series unit comes with partially charged main and backup batteries. It is highly recommended to do a full recharge of them before using the unit.

All CE8000 Series unit are shipped with and uninstalled battery.

Follow these steps to install the battery in the CE8000 Series unit:

- Place the battery into the compartment found at the back of the unit
- Press and old down the battery while turning the wheel to the direction of the closed lock (see pictogram near the wheel).

If the wheel is not completely closed, the unit will not start even if a charger is present. A warning message will be display on the CE8000 unit to ask the user to correctly close the wheel.

Recharging The Battery

The CE8000 Series unit normally ordered with a charging kit. A choice of several charging kits is available.

- The ASCE800 or ASCE802 allows charging the CE8000 Series from the LEMO type connector.

The specific kit required depends on the type of power available for the charger:

- The ASCE800 for charging from a 110 V, 50-60 HZ source
- The ASCE802 for charging from a 220 V, 50-60 HZ source

The charging operation is completed within five (5) hours. The CE8000 Series unit intelligent charging system will stop by itself when the battery is completely recharged.

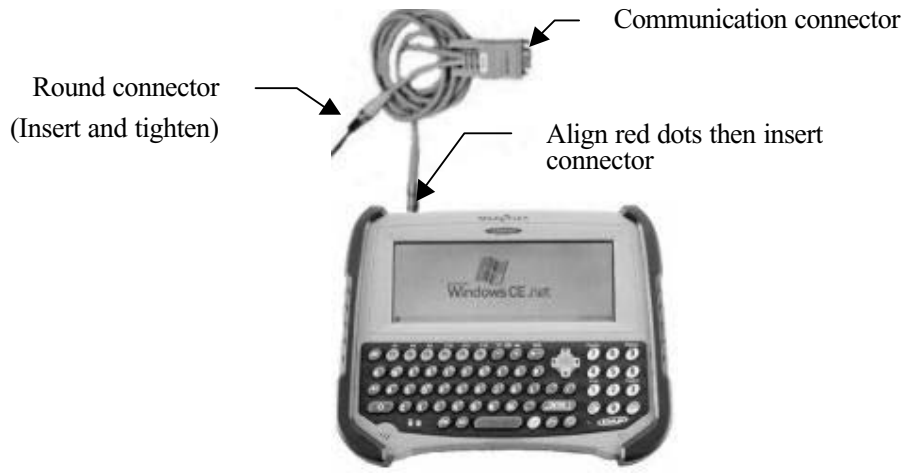
=== IMPORTANT ===

The recharging must be done when the battery is at a temperature between 5°C (44°F) and 45°C (113°F) to preserve the battery integrity. The Battery Status Indicator goes yellow if the battery is too hot or cold to be charged and the charging system is disabled.

From The LEMO Connector

The installation requires the modular charger and the communication cable from the LEMO Connector Charging Kit (part number ASCE800 or ASCE802).

Insert the round connector of the modular charger into the round connector of the small cable attached to the communication cable's 9-pin connector (Figure 4). Connect the modular charger to the wall outlet.



Note: **Do not twist the LEMO connector when inserting or removing the cable**

FIGURE 3
CHARGING FROM THE COMMUNICATION CABLE

Align the red dot located on the LEMO connector's end of the cable with the red dot found on the round connector located on the top right of the CE8000 Series unit and insert connectors one into the other.

Note: For communication, if your CE8000 Series unit has two round connectors (LEMO connector) use the right one. Either of them can be used for charging.

The Battery Status Indicator (Figure 2) will turn red in the next five (5) seconds indicating that charging is in progress and will become green when the full charge is completed. This could take up to five (5) hours. The led could turn on immediately green if the unit is fully charge.

If the unit was turned off, it should turn back on after a few seconds. Processing will resume exactly where it was interrupted once recharging starts.

Communication Cradle

No information where available at the time this document was printed

Automatic Shutoff

You generally do not have to worry about turning off the CE8000 Series unit to save the battery. If the unit remains inactive for more than three minutes, it will turn off automatically. The unit will save the exact status of your application program and data before turning off.

The CE8000 Series unit is turned off when the display is empty and the keyboard does not beep when a key is pressed. To restart, use the normal start-up procedure. Once restarted, you can resume your task where you left off.

When turned off with fresh batteries, you can store the CE8000 Series unit for several days without needing to recharge them. Refer to section MAINTENANCE AND STORAGE for more information about storing the unit.

Turning The Unit ON

Simply press the key on the keyboard. The CE8000 Series screen will normally activate.

It could occur that the battery is really too low to start the unit when pressing the key. In that case refer to paragraph "Charging the battery" under section GET READY to know how to charge it.

Out of the charger, the unit will normally turns off by itself after about three (3) minutes.

To turn **ON** the CE8000 Series unit, simply press the key on the keyboard. The unit screen will normally activate.

It could occur that the battery is too low to start the unit when pressing the key. In that case refer to section BATTERY AND CHARGING for changing instructions.

Turning The Unit OFF Manually

To turn off the CE8000 Series unit press the following keys: **blue key** and one after the other (releasing the previous key before pressing the next). The display will clear and the keyboard will no longer beep when a key is pressed.

To restart, use the normal start-up procedure.

NOTE: The device will not turn off when charging.

Battery Status Indicator

While charging, the Battery Status Indicator has several meanings.

COLOR	MEANING
Red, continuous	Charger connected, unit is charging
Green, continuous	Charger connected, unit fully charged
Red, blinking	User's defined low battery warning
Yellow, continuous	Charger detected but the battery temperature is too high or low to be recharged. Charging will start when temperature will be adequate.
Yellow, blinking	Charging disabled by the application program (as with BATMNGR)
Turned off	Power from the charger not detected

FIGURE 4
MEANING OF THE BATTERY STATUS INDICATOR

Touch Screen Calibration

You might have to calibrate the touch screen when you receive a new unit or after you have stored the unit for a long period of time without recharging. In this case, the display of the Figure 6 will appear.

Calibration is simply done by touching the center of the cross a couple of seconds. When the cross moves to another place repeat the operation.

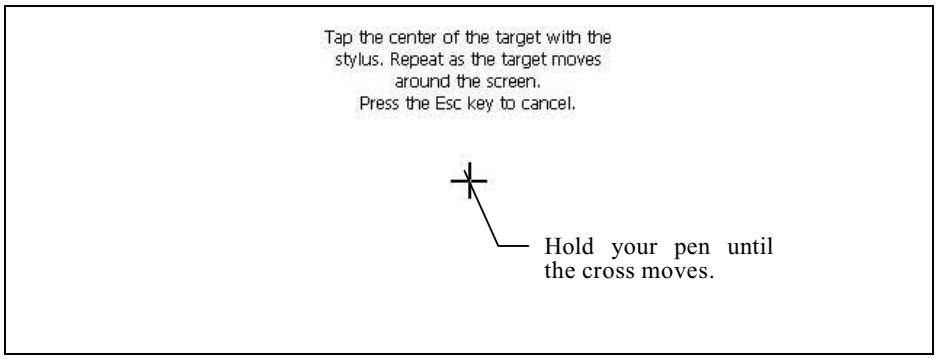


FIGURE 5
CALIBRATION OF THE TOUCH SCREEN

Starting Display

If the unit is new and no software has been loaded yet, the screen you see should look a bit as the one in Figure 7 otherwise the main display can be different.

Activate DapShell by pressing the **(Folder key)**

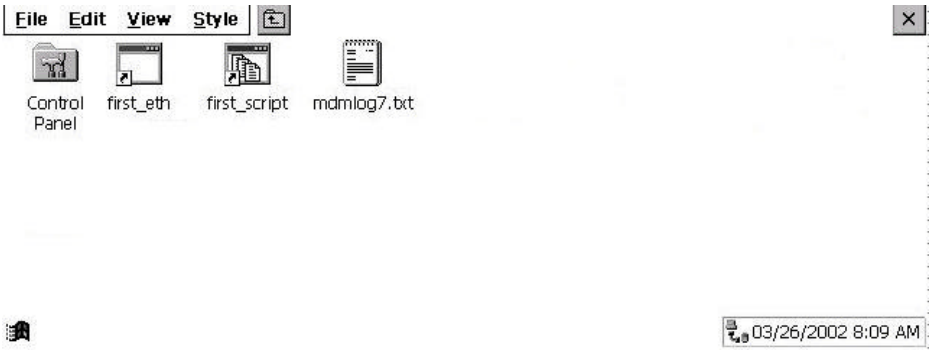


FIGURE 6
EXAMPLE OF A STARTING DISPLAY

Use of the Touch Screen

The touch screen is very user friendly. You simply have to use the special Stylus/Pen provided by DAP Technologies.

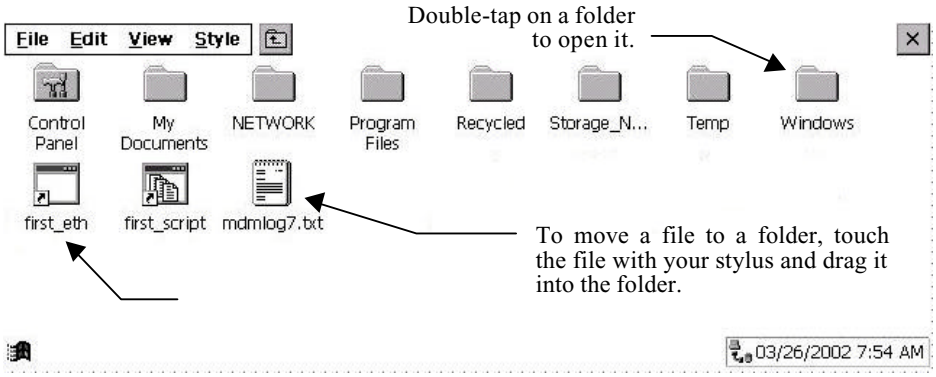


FIGURE 7
USE OF THE TOUCH SCREEN (1)

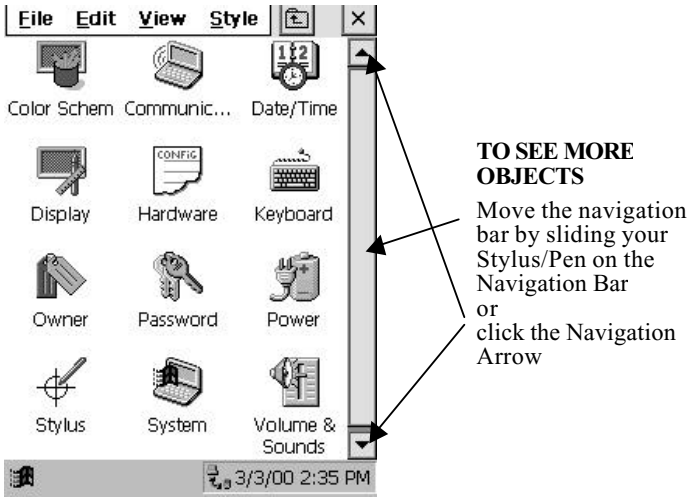


FIGURE 8

Caring of the Touch Screen

With minimal maintenance and if you avoid using abrasive or metallic pointer on the touch screen it should last for many years. Use a normal soft cloth and mild soap to clean the touch screen of the CE8000 Series unit. Do not use abrasives as they may damage the finish.

Do not use any other Stylus/Pen than the one provided by DAP Technologies. If not, it may damage your touch screen.

Replace or clean the stylus as soon as it seems damaged or dirty

Loading files and programs

Your CE8000 Series unit is now operational.

You might have to do all the previous steps if you store the unit for a long period of time and lose your data. For more information about storing the unit, refer to section MAINTENANCE AND STORAGE.

The loading of files and programs on your device depends of your application and could require the installation of programs on a desktop computer.

Please refer to the instruction for your application or contact your supervisor. For technical people or programmers, see the section ADVANCED USER INFORMATION

No information where available concerning ACTIVE SYNC **at the time this document was printed**

ADVANCED BATTERY OPTIONS

Battery Power Management

All CE8000 Series unit are delivered with a main battery already calibrated but you might need to make a new calibration to get better precision. Using the BatMngr applet you will be able to manage all power properties like the warning level and power off options.

Double tap on

and

then select the tab name `Warning`

Figure A

Figure B

`Figure A` and `B` shows that the default power properties are set to:

Low level = 16%
Very Low level = 5%

This setting means that the CE8000 Series unit **battery status** monitor will start **flashing red** when it remains **16%** of the complete charge on the main battery

You will see the Main Battery field becoming highlighted `Low` under the `Status` tab (Figure A). It will stay highlighted as long as the battery level is between 6 and 16.

At **5%**, the **battery status** monitor will still **continue to flash** and a pop-up window will be displayed telling you that your **main battery is very low** on power. Messages will be displayed every four (4) minutes approximately. The Main battery field is highlighting `Very Low (Figure A)`. It will stay highlighted as long as the battery level is lower or equal to 5.

See section **(Low Battery Message)** for description of the different messages appearing when going out of battery power.

You can change these settings to match it to your needs when your batteries are going down.

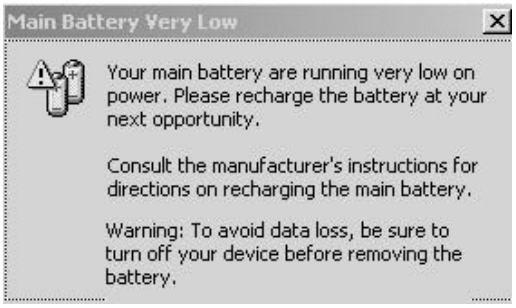
For more information about the Battery Power Management on a Microflex CE8000 Series unit call the Technical Support or go to DAP web site.

> **Note**
>
> **Calibration will always stay valid for all CE8640 Series battery but if the delay between two calibrations is to long, return information will be less accurate.**

Low Battery messages on Main Battery

After several hours of usage, the main battery will become low. Two different Low Battery messages will tell you that the main battery needs to be recharged (Figure 13 and Figure 14).

Main Battery Very Low



The Main Battery Very Low appears when there is still some power to continue to work.

The level at which it appears is adjustable by an advanced user see previous section **Battery Power Management**

Press ESC or tap the X to clear the message.

FIGURE 9
MAIN BATTERY VERY LOW

It will re-appear from time to time about every four (4) minutes to remind you to charge the unit.

Main Battery Expired

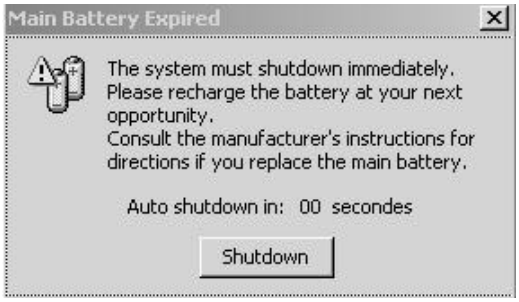


FIGURE 10
MAIN BATTERY EXPIRED

The Main Battery Expired appears when the power is really too low to power the unit anymore.

It is then better to shutdown your device immediately by tapping Shutdown. Otherwise the device will turn off by itself after 30 seconds.

If the user persists to use the unit after this message appears, it is possible that the unit does not turn-off properly and reboot when you will start to charge it. Upon reactivation, a message indicating that the system has been improperly RESET by a LOWBAT may appear on the screen.

Low battery messages on Backup Battery

The CE8000 Series backup battery allows you to keep programs and files in the memory for days. In practice, the backup battery is used only while you replace the main battery, when the main battery is absent or when the main battery power is expired

Even if the main battery is too low to power the CE8000 Series unit, enough energy remains to power the memory for a period of about 36 to 60 hours without using the backup battery.

The backup battery will be turned on to maintain the memory only when the main battery is completely dead.

The backup battery is recharged every time you recharge the unit. The backup battery is also recharged from the main battery even if the unit is not charging.

NOTE: The life duration of the backup battery depends on:

- The residual power of the main battery.
- The quantity of memory installed in the CE8000 Series unit. Memory is kept between 24 hours to 2 days.

NOTE: The backup battery capacity decreases greatly at temperatures below 0°C.

The Storage Flash memory requires no power from the backup battery.

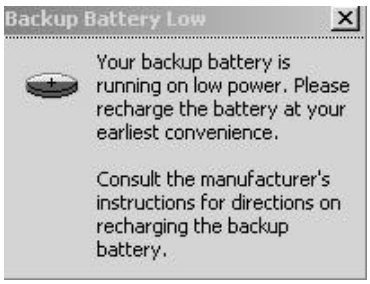


FIGURE 11
BACKUP BATTERY LOW

When the **Backup Battery Low** message appears the data is still secure but the backup battery needs to be recharged.

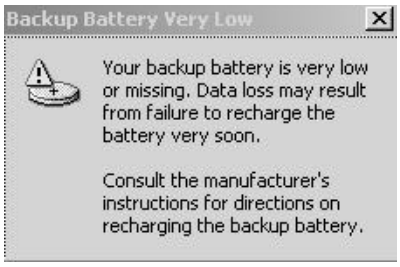


FIGURE 12
BACKUP BATTERY VERY LOW

When the **Backup Battery Very Low** message appears the backup battery is so low that data and programs could have been corrupted.

Replacing the main battery

It is preferable to replace the main battery in a clean and dry area. Make sure that neither water nor dust can enter the CE8000 Series unit.

NOTE: The CE8000 Series unit as an integrated hardware/software system that allows user to remove the battery without having to turn off the unit.

Even if the system is safe enough in most applications, we highly recommend to turn-off the unit before removing the battery

The CE8000 Series unit uses a specifically designed and tested main battery to insure quick charging time, long-battery life and to withstand shocks and vibrations. To be sure that the battery is conform for usage on a DAP equipment, buy them directly from DAP TECHNOLOGIES or one of its distributors (Part number DCCE800-Y or DCCE800-G) and check for the DAP label on it.

Replacement of the main battery is an easy task. Follow the steps outlined below.

FIGURE 13
BATTERY COMPARTMENT

To remove the battery:

Turn-off the unit. On the back of the CE8000 at the bottom right corner, turn the wheel in the direction of the open lock to release the battery (see pictogram near the wheel).

To install the battery:

Place the battery in the compartment then press and old down the battery while turning the wheel to the direction of the closed lock (see pictogram near the wheel). The wheel must be tightened completely to allow the unit to start.

If the wheel is not completely closed, the unit will not start even if a charger is present. A warning message will be display on the CE8000 unit to ask the user to correctly close the wheel.

BATTERY PRECAUTIONS

WARNING: Personal injuries may result if batteries are not handheld with care

- If the battery becomes unusable, dispose of it immediately.
- Keep the batteries away from heat sources, including open fires and direct sunlight.
- Never disassemble a battery.
- Do not place batteries through metal pieces that can short-circuit the power contact pin.

Recycling the battery

The type of main battery used in all CE8000 Series units is not considered as a hazardous waste. Refer to your local regulation for the proper methods of disposal.

Power Gauge Calibration with BatMngr.exe

The CE8000 Series unit includes a Power Gauge to monitor the power remaining in the main battery at any time (Good, Low, Very Low). This gauge indicates the estimated remaining time and percentage.

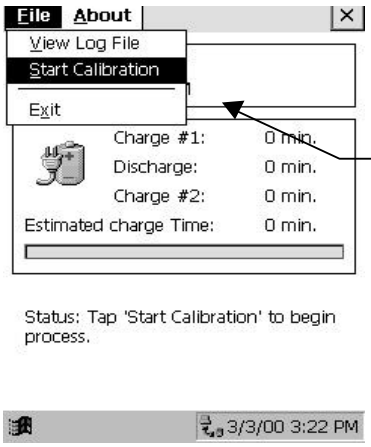
The Battery Status indicator will flash when the battery reaches the Battery Warning Level.

To get a better precision with the warning level messages, it is recommended to recalibrate the battery on a regular basic. This process can take up to 16 hours.

NOTE: A non-calibrated power gauge DOES NOT affects neither the battery life nor the charging duration. The calibration only allows the CE8000 Series unit to accurately report the remaining capacity of the main battery and to enable the Battery Status indicator to blink when the battery reaches the Warning Level. A CE8000 Series unit can be used with a non-calibrated power gauge.

You can start the application by pressing **CTRL** and **F2**

Note: *Shortcut Key could have been deactivated*



Tap on the **File menu** and select **Start Calibration**

FIGURE 14
STARTING POWER GAUGE CALIBRATION
Result of the calibration will be given at the end of the cycle.

> **Note**
>
> **Calibration is maintained into the battery pack. This means that you can calibrate a battery on one unit and use it on any other CE8640 Series unit with preserved calibration.**

BATMNGR Typical Values

The BATMNGR program can also be used from time to time to check the main battery quality. As a guideline, a fresh battery should give the typical following values. The previous readings done with the same battery also need to be compared to know the actual battery capacity and tendency.

	CE8000 & CE8000LS	
	Minimum Value	**Typical Value**
First charge	Non-relevant	Non-relevant
Discharge	Not Available	431
Second charge	Not Available	139
Capacity	---	2000mAh

FIGURE 15
BATMNGR TYPICAL VALUES

If values are far from the typical values it is suggested to:

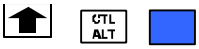
- Run another BATMNGR and compare the numbers.

If it still remains with values far from the typical values:

- Replace the battery,
- Call DAP Technologies Customer Support.

USE OF THE KEYBOARD

Multi-key entry



Sometimes you might need to press more than one key to get a character or a special function. The **SHIFT (↑), CTL/ALT** or **blue key** are the keys that can precede a letter or a digit to modify its original value.

According to your preferences or as the situation demands, you can decide to use one of the two following methods to form the sequence of keys:

- Press the keys one after the other, releasing the previous key before pressing the next. This method (also known as one finger typing) allows you to use only one finger to make any function

Or

- You can press all of the keys required together, using two or more fingers.

The colour code simplifies the way the keyboard works. The **blue key** needs to be pressed first to get a character in blue.

A simple way to understand how the multi-key entry works is by typing a **?**. The **?** Being in blue means that you must precede it with the **blue key** that is also in blue. You may use either method described above.

Auto-repeat

A key will automatically start to repeat if left pressed for more than one second. It will stop repeating once released. This delay is configurable using the Control Panel / Keyboard applet.

Digit and letter keys

To generate a character either as an alpha (letter) or numeric (digit) value, simply press the key corresponding to the desired letter or digit. Letters are normally all in lower case.

Lower case/ Upper case once

To generate an upper case letter, press the following keys: the **SHIFT (↑)** followed by the desired letter.

Lower case/ Upper case continuous

To generate a series of upper case letters, first press the **blue key** then the . This will do the same as the **Caps Lock** key you find on a conventional PC keyboard.

Punctuation and special symbols

To enter punctuation marks or special typographic symbols, press the **blue key** and then the letter key marked with the desired symbol in blue. To generate a **?**, press the **blue key** and then **/**.

Function keys (F1…F6)

The function keys are for direct access to a specific function in your application. Function keys F1 to F6 are direct access. **F7** to **F12** are also available with pressing the **blue key**. Other functions might be attached to keys **SHIFT (↑) F1** to **F6** and **CTL F1** to **F6.**

Please refer to your Application User's Guide to know the intended meaning of these keys.

Activating the backlighted screen and keyboard

To use the unit in a low-light environment, every CE8000 Series unit is equipped with a backlighted screen. Optionally, CE8000 Series unit can also be equipped with a backlighted keyboard.

NOTE: Backlighting can drain batteries rapidly if used constantly. Only use it when necessary in a low-light environment.

To activate the backlighting of the screen and keyboard, press the **blue key** and then the **backspace** key. The same sequence will deactivate this feature.

Backlighting normally turns off by itself after 45 seconds if there is no key pressed or new information on the screen.

The backlighted keyboard has two distinct zones: (Figure 1)

- The numerical section
- The alpha section

Normally, both zones of the keyboard will be backlighted but under software control only one zone at a time can be backlighted.

Additional Adjustment on the Display Background and Contrast

The CE8000 Series unit includes a precise automatic temperature compensation system to assure you that the screen display contrast will be at its best in any circumstance. In extreme temperatures outside of the -20 to +50°C (-4 to +122°F) range, or simply to adjust it to your preference, you may have to manually readjust it.

In extreme low temperatures, pressing the **blue key** and then the **+ sign** key one after the other can increase the display contrast. You can hold down the **+ sign** key to take advantage of the keyboard repeat function and go quickly from one step to another.

In extreme high temperatures, pressing the **blue key** and then the **- sign** key one after the other can reduce the display background darkness. You can hold down the **- sign** key to take advantage of the keyboard repeat function and go quickly from one step to another.

Other Special Keys

The tab key . It is used in the same way as the one found on desktop computer

Other popular special keys are shift 0 to shift 9 (**↑0** to **↑9**), and **↑.** They respectively give these characters: **) ! @ # $ % ^ & *** and **(**

The CE8000 Series units also have pre-defined function keys available to all users.

F1	Starts a connection with the host computer **ActiveSync must be install on the host computer**
SHIFT (↑) + F1	Allow to select a connection type used to make a synchronisation with ActiveSync
CTL + F1	Starts REMNET.EXE to create a new connection
CTL + F2	Starts BATMNGR.EXE to calibrate the power gauge
CTL + Folder	Activated/de-activated the taskbar
ALT-ESC	Show the Task Manager
ALT-TAB	Toggle between running task

All these pre-defined functions keys are available at the initial start-up of the CE8000 Series unit. Some pre-defined functions keys like **SHIFT (↑)+F1**, **CTL+F1** can be associated with other programs or task. Refer to "DAP Shell Usage" on DAP Technologies website for complete information about viewing or changing these functions keys.

All those function keys may have been disabled by an application or could have been set with other usage that the one pre-defined at the initial start-up.

USE OF PC CARDS

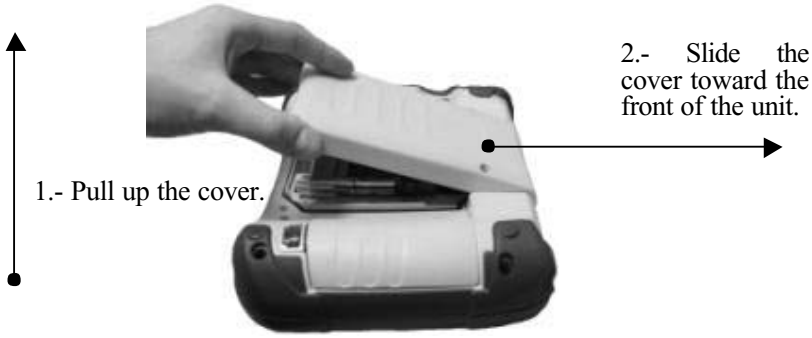
PC Card sockets are located inside the Expansion Bay. To insert, remove or swap a PC Card, follow the steps described below.

NOTE: **It is preferable to insert, remove or replace a PC Card in a clean and dry area. Make sure that no water or dust will enter the CE8000 Series unit**

PC-CARD AND EXPANSION BAY

1. Turn off the unit.
2. Using a small flat blade screw driver remove the Expansion Bay cover by loosening the four screws located on the back of the unit, about two turns to the left (counter-clockwise).

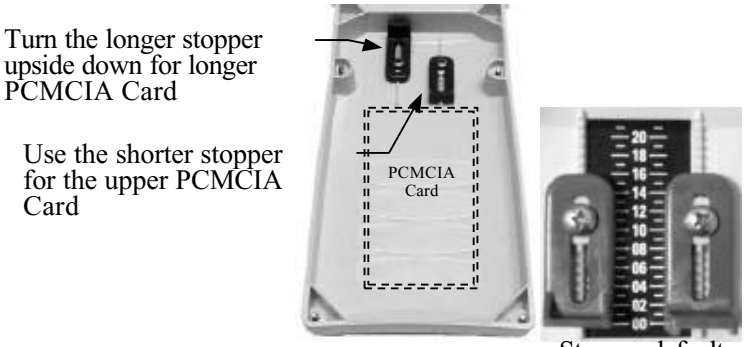
3. Remove the expansion bay cover by lifting it and slide it toward the front.



4. **To remove an actual PC Card**, if present, press the appropriate release button located on the side of the card. The card will exit the socket by a few millimeters. It is preferable to use a finger, as a protection to stop the card. Complete the removal by pulling out the card.

5. **To insert a PC Card**, slide it in the socket (the end with the two rows of little holes first and the manufacturer label on top). When the sliding begins to be a bit tight, push the card firmly. The release button should pop out and the card should hold firmly in the socket. If this is not so, the card is possibly upside down. Before closing the cover, check the plastic gasket located around the internal side of the expansion bay. It should be in good condition, perfectly clean, with no dust, sand, grease, oil or other impurities. Any fault in this aspect could cause the PC Card door to leak and eventually damage the unit. The longest card must me placed in the lower PCMCIA Socket

6. On the cover of the expansion bay, adjust the PCMCIA Card stopper. Loosen the two screws and sliding up or down the two stoppers. While the card is installed in the socket, report the first number that will be displayed at the top of the installed card and set the stopper found on the cover at the same number. The stoppers are there to keep the cards in place and also help them to absorb shock and vibration.



Stopper default position

7. To close the cover, replace the cover on its initial position. Tighten the four screws, about two turns to the right (clockwise). Tighten them until you feel some resistance. Do not over tighten

8. Turn on the unit, the application program should run normally after these steps.

IrDA INTERFACE

The CE8000 Series unit comes with an integrated IrDA interface. See Figure 3 and Figure 4 to locate the IrDA interface.

An IrDA interface is an advanced technology that allows Infra Red communication with peripherals and between computers. On CE8000 Series unit, the main purpose of an IrDA Interface is to communicate with a printer without any cable attachment. Communication with another computer or even another CE8000 Series unit is also possible.

The way the printing is done using IrDA is mainly dependent on the application program. You should refer to your application program user's guide for complete details.

CE8640 & CE8640LS

The following is basic information on IrDA.

- To communicate with the IrDA interface, the peripheral or the remote computer should also have an interface supporting the IrDA protocol.
- To communicate with the peripheral, point the bottom side of the CE8000 Series unit at the IrDA receptor on the peripheral. Usually the receptor looks like a dark plastic window about 17 x 7 mm (3/4" x 5/16"). Stay aligned within about ±15°
- The communication can be done from a distance of up to one meter (three feet).
- The communication link is strong enough to withstand quite a large displacement between the computer and the peripheral. In case of bad reception, the communication protocol will restart the transmission of the missed data block.
- Direct, strong sunlight can degrade the communication link, increasing the communication duration or even causing a breaking of the link. Under direct sunlight, protect the CE8000 Series unit and the peripheral with the shade of your body and keep units closer to the peripheral.

BARCODE LASER SCANNER (CE8000LS)

The CE8000LS is a standard CE8000 on which a Laser Barcode Reader has been installed.

The functioning of the Laser Barcode Reader is mainly under the control of an application program and a special software driver. You should refer to your application program user's guide for complete details.

The following is basic information on laser barcode reading.

- Point the top of the CE8000LS toward the barcode label to read.
- Press the **SCAN Button** found on the back of the unit and move the CE8000LS back and forth to assure you that the beam will completely cross the label.

Two proper ways to scan a label

Two improper ways to scan a label

FIGURE 16
SCANNING A LABEL

Laser Button at the back of the unit

- You will hear a short beep when the label is decoded and the laser led will turn green.
- You can release the **SCAN Button** at any time to stop the scanning. Two short beep will be generated to indicate the end of the scanning
- If you keep the **SCAN Button** pressed for too long the scanning will stop by itself after a certain time. You will hear two beeps meaning that no barcode has been decoded.

Refer to the CE8000 Series Technical Guide for more information about usage and the programming.

CAUTION - Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Do not intentionally look at the laser beam.

Maintenance Notice

CE8000LS

The efficiency of the reading depends on the quality of this plastic window. **TAKE PARTICULAR CARE OF IT**

- Any scratch, dirt or finger mark will degrade the reading quality.
- To clean, use a soft cloth with soap and water. Any plastic lens cleaner will also do the job.

USE OF THE CRADLE

For information about the installation and configuration of all different types of cradle available for CE8000 Series unit, please refer to the document named TB40-A.

The tb46-a.pdf document content information about:

	Office cradle
CBCE840-1	Charge & Communication: USB (slave)
CBCE840-2	Charge & communication: Serial (RS232) & USB (slave)
CBCE840-3	Charge & communication: Serial (RS232) & Ethernet
	Vehicle cradle
CBCE840V-1	Charging only
CBCE840V-2	Charge & Communication: Serial (RS232)
CBCE840V-3	Charge & Communication: 4 x serial ports (RS232)

No more information where available at the time this document was printed

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EXTERNAL COMPACT FLASH ADAPTER

No information where available at the time this document was printed

MAINTENANCE

The CE8000 Series units are reliable instruments and require little maintenance. Only occasional replacement of the battery and strap is required.

It is important not to leave the CE8000 Series unit exposed to the sun for long periods of time since the airtight casing may accumulate sufficient heat to cause a malfunction.

NOTE: There are no user serviceable parts inside the CE8000 Series unit. Do not try to open the case. Any attempt to do so may affect the weatherproofing, damage the unit as well as void the warranty.

Main Battery maintenance

The high quality Lithium-Ion battery installed by DAP in your CE8000 Series unit is specified by the **battery manufacturer** to be rechargeable over 500 times. If you find that the batteries are not lasting for the normal period (at least 8 hours) after having been recharged, it may be time to change them. When used under normal conditions, the main battery should last, on average, from 12 to 24 months.

Backup Battery Maintenance

The CE8000 Series backup battery allows you to keep programs and data in the CE8000 memory for years without being replaced. Being rechargeable and protected against deep discharge, the backup battery will not need to be replaced during the expected lifetime of the CE8000 Series unit.

Cleaning

Use a normal soft cloth and mild soap to clean the CE8000 Series unit. Do not use abrasives as they may damage the finish.

Make certain that the battery compartment and PC-Card door are correctly closed before starting the cleaning operation.

Shipping The Unit

The CE8000 Series units have been designed to resist the vibration and shock that can occur during normal use of the product. However, if it is necessary to ship one of these units any long distance, the handling involved in land and air transportation can often subject these units to impact beyond that for which they where designed to withstand. It is therefore essential that the CE8000 Series units be properly packed in an adequate and appropriate manner before being shipped.

The packing box that DAP TECHNOLOGIES uses for shipping the CE8000 Series unit to its customers was designed for this very purpose and should, therefore, be set aside and kept in case reshipping becomes necessary.

Carrying Strap Maintenance

The carrying strap requires no specific maintenance. Use a normal soft cloth and mild soap to clean it.

It may be necessary to replace it from time to time due to wear.

List of User Replaceable Parts

There are few parts that the user can easily replace on the CE8000 Series unit. The following list shows parts that need to be replaced occasionally as they deteriorate with use.

Part Number	Description
DCCE800-Y (Yellow casing)	Lithium-ion battery pack
DCCE800-G (Grey casing)	Lithium-ion battery pack
DCCE801	Carrying strap (four per package)
DCCE500	Stylus / Pen (Minimum quantity of 5 units)

FIGURE 17
USER'S REPLACEABLE PARTS

STORAGE

Short Term

For a storage period of a few days or weeks it is recommended to keep the unit on charge. The main battery will fully charge and then the charger will go in idle mode. Data and programs will be preserved.

NOTE: If not on charge, you may lose your programs and data after a certain time.

The life duration of the backup battery depends on:

- The residual power of the main battery.
- The quantity of memory installed in the CE8000 Series unit. Memory is kept between 24 hours to 2 days.

NOTE: The backup battery capacity decreases greatly at temperatures below 0°C

The Storage Flash memory requires no power from the backup battery and all data will be always preserved.

Long Term

For a longer storage period, such as months, remove the battery from the unit and store the unit as long as you wish. The **battery manufacturer** recommends storing the battery partially charged.

It is a good practice to recharge the battery once a year for a couple of hours.

Before using the CE8000 Series unit again, keep it on a charger for a period of about 60 hours. This will assure you that the backup battery is fully charged. Otherwise, a 12-hour period on the charger will be enough to assure you sufficient protection especially if the unit is going to be recharged almost every other day. The backup battery will complete its charge during these periods.

NOTE: When charged, the CE8000 Series unit will restart as if it were new. Refer to section GETTING STARTED for starting procedures.

NOTE: It is preferable to store the unit at a temperature from 0°C (32°F) to 25°C (77°F).

TROUBLESHOOTING CHART

Problems	Possible Causes and Solutions
The screen is empty and the keyboard does not beep when a key is pressed.	The unit is possibly turned off. Press the key to restart it. (Refer to item "Turning The Unit On").
The unit does not turn on when pressing the key.	Batteries are possibly too low. Connect the unit to a charger. The unit should turn on after a few seconds and restart the operating system.
The PC Card does not connect in the PCMCIA socket.	The PC-Card is possibly inserted the wrong way. Refer to USE OF PC-CARD.
Display contrast is weak or display background very dark	The display contrast is incorrectly set. Use the contrast keys to adjust the display. Refer to "Display background and contrast, additional adjustments". The display cannot be adjusted correctly if the unit is used outside of its temperature limits.
The unit does not shutoff automatically or manually.	The unit is possibly connected to a charger or the shutoff feature is not set properly.

FIGURE 18
TROUBLESHOOTING CHARTS

OPERATING ENVIRONMENT

Operating Temperature

The recommended temperature range where the **CE8000 Series unit** may be used is from -20°C to +50°C (-4°F to +122°F).

A short exposure to temperatures lower or higher than these could possibly make the screen very dark or light until the unit returns within the suggested temperature range.

Long exposure to temperatures below -40°C (-40°F) may damage the screen. Prolonged exposure to temperatures above +60°C (+140°F) will damage the main battery and above +70°C may damage the unit (+158°F).

Rain And Water Resistance

The **CE8000 Series unit** will withstand exposure to rain without the ingress of water. It is designed to withstand occasional immersions. The unit floats, making it easy to retrieve when dropped in water.

These characteristics can be impaired if the battery compartment or the PC-Card doors are improperly closed or if their gaskets have deteriorated.

Resistance To Shock

The **CE8000 unit** is designed to withstand shock and accidental drops from up to 1.2 meters (4 feet) onto concrete within the fully specified temperature range.

The **CE8000LS unit** is designed to withstand shock and accidental drops from up to one meter (three feet) onto a hard surface within the fully specified temperature range.

It is obvious that these situations should be avoided as much as possible.

Electromagnetic Resistance

The **CE8000 Series unit** work perfectly well in most common environments involving electromagnetic fields such as when near power transmission lines, electric motors, transformers, compressors, low power RF transmitters, etc. Performance can be degraded when using a communication cable, a peripheral or a battery charger under these conditions.

ADVANCED USER INFORMATION

Where to find more information

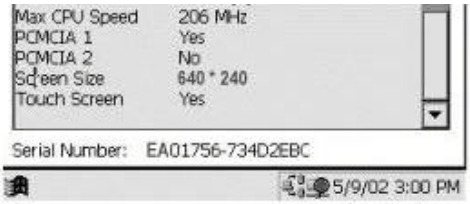
In the objective of giving you the most up-to-date information, advanced user information is available on the WEB.

Register your unit and get the latest information by following these simple steps:

- Locate and double-tap the Control Panel folder

- Locate the hardware applet

- Open the Hardware applet. Note the 16-digit number at the bottom of the display.



Then start your Internet browser and go to the following address

https://www.daptech.com

Do not forget the "**s**" in the address.

Locate and click the label Register a serial number.

Fill the short form and enter your 16-digit number as the access code.

A set of links will bring you toward the information you need.

NOTE: All these information are not a requirement for adequate use of the CE8000 Series unit.

Resetting the CE8000

There are some specific situations that can cause the CE8000 Series unit to crash or behave strangely. The most common causes are as listed below:

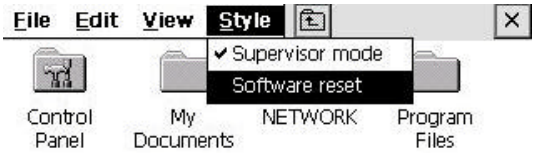
- Programming errors, specifically when trying a new application program.
- Missing, corrupted programs or data files.
- Operation of the unit outside the specified temperature range.
- Physical abuse. In such an instance, the physical cause will be observable by examining the unit or looking for plastic cracks or corrosion marks in the battery and PC-Card compartments.

They are two ways to reset the CE8000 Series unit

- By Software **(Supervisor mode required)**

To access the software reset you must enter the supervisor password. Go under the *Style menu*, choose *Supervisor Mode* and than enter the supervisor password.

After entering the supervisor password, you will now have access to the software reset option under the *Style* menu.



A reset password can be asked to complete the software reset correctly, contact your system integrator if such password is required.

- By Hardware

To do a hardware reset simultaneously press the B + O + S keys for a few seconds. A message box will be displayed while applications are closed and the unit will reset at the end of this process.

WARNING: **Never remove the battery to reset the unit. This can cause the corruption of the running applications and can also damage the data present in the Storage Flash.**

In all of these cases, contact your supervisor or the application program supplier. If the problem cannot be resolved, contact the equipment supplier or DAP TECHNOLOGIES. A reset of the unit may correct the problem or it may be necessary to return the unit to a DAP Service Center.