

# **PaIDRAW 1.00**

for HP100/200LX palmtops

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*Revised by Bill Sprague*

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# 1. Introduction

PalDRAW is an application specifically designed to work in HP100/200LX palmtops but can be run in other compatible palmtops, such as the HP1000LX OEM. The goal of the developers of PalDRAW is give to the user an effective tool for drawing sketches (on the fly), schematics, and serious final designs in the HP100/200LX palmtops series. PalDRAW can be used to develop original designs or to view and modify any drawing created in applications supporting the DXF standard interchange format, including native CAD applications like AutoCAD.

## 2. Installation

You will find these ZIP files in HPHAND CIS forum:

- \* PD100-EN.ZIP. English international version.
- \* PD100-SP.ZIP. Spanish version.
- \* PD100-FR.ZIP. French version.
- \* PD100-GE.ZIP. German version.

Decompressing the main ZIP file will produce the following files:

README.DOC	Important late hour information
MANUAL.TXT	ASCII plain text manual
MANUAL.WRI	Microsoft Windows Write text manual
REGISTER.DOC	Information about registering PalDRAW
FILE_ID.DIZ	BBS file information
LICENSE.DOC	Terms of use PalDRAW
DRW2DXF.EXE	Application to translate DRW into DXF.
DXF2DRW.EXE	Application to translate DXF into DRW.
PD.ZIP	ZIP program file to copy in the palmtop.

Be sure to read latest information in the README.DOC file before performing any operation. Further, you must read the license agreement in the LICENSE.DOC file before use PalDRAW. Executing the application indicates to us your acceptance of this license agreement.

When you have read the LICENSE and README files, copy the PD.ZIP file to root directory of the palmtop's C: drive. PCMCIA flashcard, or SRAM. Once this is done, decompress the file using the format:

```
PKUNZIP -d PD.ZIP
```

Do not forget the -d option. This command creates a \PD directory along with needed subdirectories. Once you've decompressed the PD.ZIP file, you can delete it to save disk space.

## 3. Use in the palmtop

This release of PalDRAW can only be executed in the palmtop and not in a Desktop PC. Future releases will have a Desktop PC application viewer and printer modules, compatible with your palmtop PalDRAW.

Now, assuming you have installed PalDRAW in the C:\PD main directory, you will see the following tree structure:

C:\PD	Main directory program.
C:\PD\DRAW	Default location for drawing files.
C:\PD\BLOCKS	Location for vectorial block files.
C:\PD\ICONS	Icons ICN files directory.

The main PalDRAW program is now installed in the C:\PD (or PCMCIA) directory. To load it simply type:

```
PD
```

at the C:>\PD prompt and you are in PalDRAW.

If you wish to include PaIDRAW in your system manager, add it with the complete path

```
C:\PD\PD.EXE | 300
```

and use the PD.ICON icon given, or any another you desire.

PaIDRAW needs at least 250KB of free RAM to work well, but this size must be increased if you are developing or editing larger drawings.

PaIDRAW has the feel of HP100/200LX ROM based applications. You can use menus, function keys and more. This interface is made possible thanks to the PAL library, from the PAL Group.

## 4. File menu

The FILE menu can be activated by pressing the [Menu], or [Spacebar] keys on your palmtop. Both keys perform the same function in PaIDRAW. Displaying this menu, gives you access to the commands explained below.

### 4.1 New

This command creates a new file. You can use the Ctrl+F9 key combination (like appears at the right). By default, the new file created in the C:\PD\DRAWWS subdirectory and given the name "UNNAMED.DRW".

### 4.2 Open

This command restores an existing file for editing. By default, PaIDRAW uses the C:\PD\DRAWWS data path, as the default destination of yours drawings. If no extension is given, PaIDRAW defaults to \*.DRW. When you specify the desired file (i.e. COLUMBIA) you can use F10 to accept or F9 to cancel the selection. Generally speaking, PaIDRAW not present the "OK", "Cancel" or "Help" button in each dialog box to save memory usage and screen space. This options are accessible by using functions keys, with standard built-in ROM palmtop applications. We think you will find this procedure more productive after but a few minutes using PaIDRAW.

### 4.3 Save

Save your current drawing in the current file name.

### 4.4 Save as

You can save your drawing using another file name with this option.

### 4.5 Register

PaIDRAW is a Shareware application. The developers need your support to improve and maintain the application. Use this option to get information about registration, and to personalize your copy of PaIDRAW and to add your personal registration code when you receive it.

### 4.6 BMP Export

This option saves the screen contents as a Microsoft Windows \*.BMP file. Originally, PaIDRAW supported PCX, but the royalty payment required to include LZW compression format in the application has made it impossible to include this feature and keep the registration price low. You can convert the BMP format to PCX or any other with any conversion graphics application such as "Alchemy". Future releases of PaIDRAW may support additional graphics formats.

### 4.7 Quit

Use this option to terminate the application. If you've modified your drawing, PaIDRAW will ask you to

save any changes you've made during the current session.

## **5. View menu**

You can choose different options for displaying in your drawing.

### **5.1 Zoom**

By using this menu option (or pressing Z key) you activate the Zoom dialog, which allows you to change the view scale value. If you activate the "Relative" toggle by highlighting (Tab to it) it and pressing the [Spacebar], the value you choose will multiply the actual zoom value. In other case, the value is the absolute visualization scale.

The concept of view scale can be more easily understood by knowing that 1 drawing unit equals 1 pixel in scale (zoom) 1. Therefore, increasing this value to 2, then you have 2 pixels each 1 drawing unit, and so on.

### **5.2 Zoom +50%**

Doubles the view scale value. (It's like using Zoom 2 relative).

### **5.3 Zoom -50%**

Divides the view scale by two. (It's like using Zoom 0.5 relative).

### **5.4 Redraw**

When you create or modify any entity in your drawing, the respective graphic representation will change too. Manually using the redrawing process may occasionally become necessary. PalDRAW will automatically redraw in many cases, but in some circumstances you must do this manually (for instance, when you draw in Quick mode).

### **5.5 Regen**

The regenerating process is very much slower than the redrawing. Normally, you won't need regenerate manually. PalDRAW will regenerate when necessary such as when loading a draw from disk, or when changing the actual Zoom.

## **6. Edit menu**

In this menu you can see the different tools PalDRAW provides for creating modifying a drawing entity. These commands can be used with only one entity at time. This constraint was used to give better speed and search performance. Future releases of PalDRAW will improve these options. An "Undo" command (Yes, we know you need it - so do we) will be added in a future release.

### **6.1 Change**

You can change the significant values of any entity.

### **6.2 Delete**

Erases an entity from the drawing. This is currently an unrecoverable action.

### **6.3 Copy**

You can create another entity from any in the drawing, and insert it in any new position.

### **6.4 Move**

You can change the position of any entity.

## 7. Create Menu and Data Dialog

In this menu, you can see and select all of the tools available in PalDRAW 1.0 for creation of drawing entities along with their keyboard equivalents. Upon selection of an entity tool, note the change in the "F Key" menu. The "Redraw" option is gone and the "Save" option has been replaced with the "Data" option. Pressing the F2 key brings up a Data Dialog in which you can specify the characteristics of the entity being placed. You will find that use of this Data Dialog will be a great aid in creation of Arcs and Circles.

### 7.1 Circle

You must to supply the center point and the radius. You do this manually using the cursor keys (with or without Grid" assist) or you can activate the Data Dialog (As noted in 7.0 above) before ending the circle creation so you can specify numerical values for the center coordinates, and radius, and change the fill status.

The global fill status can be changed in the Option menu.

### 7.2 Arc

You can draw an arc of a circle, by specifying the initial and final angle along with the center coordinates in the Data Dialog. The angular convention is counter-clock wise positive and expressed in degrees.

### 7.3 Line

In PalDRAW, a line is defined with an initial and final point. You do this manually using the cursor keys (with or without Grid" assist) or you can activate the Data Dialog (As noted in 7.0 above) to specify the beginning and ending coordinates.

### 7.4 Text

You can insert a vectorial text in the drawing. The text height can be changed activating the Data Dialog before ending the entity creation and specifying the height in drawing units. A single text entity is limited to 100 characters. Future PalDRAW releases will allow use of more fonts types, and allow for more flexibility in justification and positioning.

### 7.5 Icon

This option allows you to place icons in your drawing in much the same way as you would place symbols in a desktop CADD application. Icons are images created as \*.ICN files, like the standard icons from the System Manager located in your palmtop. You can use the icon editor, D:\BIN\ICN200LX.EXE, located in your D: ROM disk or a graphic converter called BMP2ICN.EXE (from Dan Pinson danp@cv.hp.com, and available in HPHAND Compuserve) to create or modify \*.ICN files. Using these programs, you can edit icons with this application, or use any available in HPHAND in CompuServe. The data path for the icons is C:\PD\ICONS. The icons visible in window which is activated by selecting "Icon" are located in that subdirectory. Some useful ICN icons with PalDRAW and you can add as many you desire to the window simply by copying them to the C:\PD\ICONS directory.

### 7.6 Insert Block

Insertable blocks are blocks references defined in the drawing. Blocks are entity groups, saved memory and available for use in future drawings. You can insert blocks in any point in your drawing, giving scale values (either symmetric or asymmetric).

This release of PalDRAW supports neither nested blocks (blocks inside blocks) or rotation values. You will see these features included in release 1.1 or 1.2. Another useful tool you will see soon is "Block Attribute", in release 1.1.

The block definitions appears in the C:\PD\BLOCKS directory, with \*.DRW extension. If you like to

explore, you can see the block files are actually drawing files. PaIDRAW gives you a representative ICN icon to the block, to display it in the selection window. If a block does not have an icon, the default C:\PD\DEFAULT.ICN will be used.

You must know while blocks save memory (specially in large draws) avoiding copies of the same entities in a draw, they add to the time required to display the drawing. The graphics engine will need to calculate the projection any time it is required to regenerate (but not redraw) entity blocks.

## **7.7 Define block**

Using this option, you can create a new block definition. PaIDRAW will ask you for an insertion point, then the entities you want, then the block name. This name is limited like any MS-DOS file name (8 chars and no special characters). PaIDRAW will define the new block with that name and DRW extension in the C:\PD\BLOCKS directory, and takes a ICN image (like a photograph) saving it with the same name in the same directory.

## **8. Option menu**

You can choose many status options of PaIDRAW here.

### **8.1 Fill global**

With this option you can select the Global fill value for circles. This option is a toggle and, if it's activated, it has an asterisk "\*" before it. This global value establishes the initial toggle status when creating a circle.

### **8.2 Grid**

It indicates if the grid will be visible or not. If you note the grid is activated but not visible, it would be the actual Zoom value is cannot to be seen using grid value.

### **8.3 Snap**

This switch restricts the cursor movement to grid positions.

### **8.4 Quick mode**

When you activate this toggle, PaIDRAW will perform some operations faster but in Draft mode. For instance, it will not redraw after editing entities, will draw icons like a box, and won't fill circles, etc.

### **8.5 Cursor**

You control the display status of the graphic cursor in the screen, when giving coordinate points. The graphic coordinate cursor is a parallel intersection with X-X, Y-Y axes.

### **8.6 Coordinates**

This toggles to show or hide the coordinate numerical value near the cursor position. In PaIDRAW 1.0, only 2 decimal positions can be displayed. Future releases will allow you to customize this option. Hiding the cursor and the coordinates will accelerate the cursor movement.

### **8.7 Grid values**

This option allows you to choose the spacing for consecutive points in the grid to the X-X and Y-Y axes. Different values to X-X and Y-Y give an asymmetric grid. You can change the visibility and Snap status from here also.

### **8.8 Preferences**

You can change two different options:

\* **Autosave:** If you choose to end the PalDRAW session and you haven't saved the drawing latest changes, PalDRAW will automatically save the drawing to C:\PD\DRAWINGS\AUTOSAVE.DRW if this option is selected.

\* **Grid in lines:** By selecting this toggle, PalDRAW will use intersecting lines to draw the grid in the screen. Otherwise, the grid will be little crosses.

## 9. Cursor movement

A big limitation in the HP100/200LX palmtop's ability to manage a graphic application is the lack of a pointing device, such as a mouse or an integrated trackball. This disadvantage is minimized with powerful tools available in PalDRAW to move the cursor in the screen.

\* **Arrow keys:** You can move the cursor to the left, right, up or down from the actual position, using a grid step (if Snap is activated) or a pixel step (if Snap is not).

\* **Cursor position records:** You can save 9 different cursor positions in your drawing, for a very fast access to those any time. To save the actual cursor position in a number given, said 3, you must to move the cursor to the desired position, then press Shift+3 (use Shift+Number). You can then jump to this position simply by pressing the 3 key (use the Number key).

\* **Historical point list:** When you are drawing, and marking different points in the draw, PalDRAW will store each different position sequentially. These recorded points will be available as long as you don't exit the drawing. You will lose the historical point list when you open/create a drawing. To move around to points on the historical list, use TAB to go in a direction, and Shift+TAB to go in the opposite, when the cursor is available.

\* **Offset multiplier:** If you wish to move the cursor a large distance from your current position, it's not necessary repeatedly press the arrow key. Using the '\*' (times, asterisk) key, you can specify an integer number representing the multiplier factor, then press the arrow key to move in that direction. If you have the Snap activated, that will be the grid steps number in the pressed arrow key direction. If you have not the Snap, then will be the offset in screen pixels. In that case, you must to know the screen have, in PalDRAW, 640 horizontal pixels and 180 vertical.

We are currently investigating different ways of moving the cursor. If you know, think, or dream with some one, please, send us a note.

When you move the cursor with any method, you cannot access outside the actual windows limit. This avoid PalDRAW redraws unnecessarily when you move the cursor.

To pan or move the window position (relative to the draw extents), you can use the following methods:

\* **Moving the window 50%:** By using the Fn+Arrow key combination, you can move the window in that direction a distance equal to 50% of the window size.

\* **Fine movement of window:** By using Ctrl+Arrow keys you can move the window in that direction a distance equal to 15% of the window size.

## 10. Status Line

The top line on the screen is the Status Line. PalDRAW gives you some important information on that line. The Status Line is divided in 5 parts, divided by a vertical line separator:

**Section 1-** Shows the program name and version number.

**Section 2-** Shows the file name and type of the drawing. An asterisk '\*' after the file name, indicates you have made changes in your drawing without saving them.

**Section 3-** Calculation status. This can presents the calculation status:

\* **r.** PalDRAW is redrawing. You can break the process pressing any key.

\* **R.** The redrawing process have been interrupted because you've pressed a key. The entities represented in the screen will be incomplete.



\* **g**. PalDRAW is regenerating. The process can be interrupted by pressing any key, but the application will continue the regeneration when it has an opportunity.

\* **G**. The regenerating process have been stopped. It's not a stable status and PalDRAW will continue the regeneration when it has an opportunity.

\* **Empty (none)**. All redraw and regeneration processes have been concluded.

All this information is shown to give you an indicate when the application has completed a process in large drawing.

**Section 4-** Shows the available RAM memory available for to data storage, in bytes. Since each new entity requires about 50 bytes of that memory, and PalDRAW needs some to store temporary objects, a value of 15000 is dangerous. If you notice this condition, just quit the application, give PalDRAW more available memory, and reload it.

**Section 5-** User name. Shows your user name when you are a happy registered user, or UNREGISTERED if you are not.

## 10.1 Function keys bottom line

Just as the bottom line in the palmtop's built-in ROM applications indicates the function key's status; in PalDRAW, that line indicates the status of the nine PalDRAW function keys which are: Help (F1), Save (F2), Open (F3), Snap (F4), Cursor (F5), Coordinates (F6), Grid (F7) Redraw (F8), and Quit (F9). As has been explained in 8.2, 8.3, 8.5 & 8.6 above, F4-F7 function keys toggle the status between ON and OFF. Note as you press the function key the "soft keys" change from upper to lower case or vice versa. Upper case indicates that the function is enabled while lower case indicates that the function is disabled.

## 11. Special Notes

### 11.1 Automatic Grid and Snap Management

When you zoom the drawing, you can choose values which are higher than the minimum grid step. Under those circumstances the graphic cursor would normally lock but PalDRAW automatically deactivates the Snap if it was activated prior to the Zoom. You can activate the grid snap manually (F4), but you must to choose a larger Zoom or set the grid step for a value higher.

When the Zoom is very small relative to a grid value, PalDRAW won't show the grid, thereby avoiding a very confused point pattern on the screen.

The grid will be visible automatically when you decrease the Zoom to a value small enough to show the grid without a confusing interface.

### 11.2 Regenerating and Redrawing

When you see strange things in the screen, you should to probably redraw (F8) manually. It is not necessary to manually activate the regeneration process (Ctrl+F8), since it takes long time to calculate the 2D integer projections of all of the drawing entities.

Because PalDRAW regenerates when changing the Zoom value, avoid use Zoom as much as is possible in large drawings.

### 11.3 DXF support. DRW2DXF and DXF2DRW applications

You will see two different applications in PalDRAW 1.00 provided to support DXF standard file interchange format. You can copy to them to your palmtop, but probably you will prefer maintain these in your PC Desktop, to save palmtop disk space, especially since the DXF format generates very large files.

DRW2DXF converts any DRW native PalDRAW file into DXF format. You must to give the complete path for both source and target files. Actually, only Circles, Arcs, Text, Lines and inserted Block definitions will be converted. Other entities (likes ICN images) which have no DXF equivalent. All entities will be placed in the 0 layer, with the Z coordinate fixed to 0.0.

DXF2DRW converts any compatible DXF file to the native DRW PalDRAW format. Only circles, arcs, text and lines will be converted. Blocks and insertion blocks are not supported yet. If it is important to you to have your entire drawing converted to PalDRAW format, explode all of your blocks while you are in

your desktop CADD program and then convert the file to DXF format.

You can start either of these little programs with no parameters to obtain more information.

Remember, use a totally empty new drawing (probably without prototype) in AutoCAD to restore entities as in your original PalDRAW drawing.

You can use the DXF file format to include your drawings in your favorite Word Processor or Auto Edition software. Remember you have the BMP image of a DRW file if you want, too.

## 11.4 DRW File format

The DRW PalDRAW drawing file is an ASCII file. If you are a programmer, and you want to know the DRW syntax, you can contact us at the e-mail address indicated below, or download this information from the HPHAND forum on CompuServe, in the 'Palmtop Programmers' library.

My Internet address is 100657.1030@Compuserve.com

## 11.5 Bugs

Software bugs? :-)

If you find a bug in the current PalDRAW release, please notify us by e-mail. User response will yield a more useful code in future releases.

In your note, please include all necessary information to reproduce the bug. We can then debug it and in turn give you a more reliable release.

## 11.6 Future Improvements

PalDRAW is an application resulting from the work of a very experienced team of CAD & Graphics programmers.

A very exhaustive initial study has been necessary to determine the performance limitations and strengths of the palmtop and its graphics/speed/memory. A very large number of successive adaptations were applied, mainly in the graphics library memory usage and the floating point mathematics. The resulting application is compact (less than 100Kb !!!), fast but with more than one month delayed from the initial launch date. Anyway, some performance enhancements have been passed over for 1.0 and will be implemented in the 1.1 and 1.2 releases. Registered users will receive those releases absolutely free!

We think PalDRAW can be improved in the next areas:

- \* More supported entities, like polylines, text variable attributes in blocks, polygons, any size bitmaps (plus the actual ICN fixed icons). Some those have been developed in the design phase, but too close the current release to be included.
- \* Nested blocks. Rotation in inserted blocks.
- \* Line types, shapes and thickness.
- \* HP-GL vectorial format import/export.
- \* A viewer & printer application to support DRW format in PC Desktops.
- \* Data compression support and passwords in files.
- \* A more powerful graphics library (We are testing a library 6 times faster than the BGI Borland. Many changes will be applied to restrict the large memory usage of it to made it useable.)
- \* Display list, a tool to accelerate graphics efficiently, but using more memory.
- \* Different text styles.
- \* More and better edit commands.
- \* New and imaginative cursor movement ways, and more Zoom methods, like window, extents and previous.
- \* Layer support.
- \* Prototyping.
- \* Better DXF support. More bitmap file formats supported.

We want make all of those improvements, giving PalDRAW around the actual reasonable cost. To do

this, we need your support. Registering PalDRAW you invest in a better application.

Any suggestions will be appreciated.

## **12. Registering, License agreement and Special thanks.**

### **12.1 Disclaimer - License Agreement**

Users of PalDRAW must accept this disclaimer of warranty: "PalDRAW is supplied as is. The author disclaims all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The author assumes no liability for damages, direct or consequential, which may result from the use of PalDRAW."

PalDRAW is a "shareware program" and is provided at no charge to the user for evaluation. Feel free to share it with your friends, but please do not give it away altered or as part of another system. The essence of "user-supported" software is to provide personal computer users with quality software without high prices, and yet to provide incentive for programmers to continue to develop new products. If you find this program useful and find that you are using PalDRAW and continue to use PalDRAW after a reasonable trial period, you must make a registration payment of \$35 to Ariel Rocholl. The \$35 registration fee will license one copy for use in one palmtop computer at any one time. You must treat this software just like a personal private book.

Use the file "REGISTER.DOC" to register, or follow the instructions on the initial screen in the PalDRAW unregistered version. You will receive a personal code to activate PalDRAW registered release, but this code is private and non-shareable.

Commercial users of PalDRAW must register and pay for their copies of PalDRAW within 30 days of first use or their license will be withdrawn. Site-License arrangements may be made by contacting Ariel Rocholl.

### **12.2 Registering Your Copy of PalDRAW**

You can use the REGISTER.DOC file (which contains registration information) to register. You can register by CompuServe SWREG, or use your credit card, cash, or money order and call an 800 phone number in the US.

Any form of payment is equivalent and, when made, we send you a personal code which permits your use of PalDRAW for an indefinite time.

The PalDRAW release number will use a strict format:

PalDRAW V.NR

Where:

V is the global version number.

N is featured revision of the global V version number.

R is the bugs revision number respect V.N.

For instance, if you have the PalDRAW 1.00, where V=1, N=0 and R=0, the first bug revision will be 1.01, the second 1.02 and so on. When some performance enhancements are added, the 1.10 release will be launched (1.11 is the first bug revision of it), then the 1.20 and so on.

As you know the launch date of PalDRAW 1.00 given in the file PD-PRESS.ZIP (available in HPHAND CompuServe general HP100/200LX library) has passed. The initial feature list given in that file was extensive and we are making a serious effort to maintain those features (except the PCX format support maybe) absolutely free of charge to registered users of PalDRAW 1.0x (which we suppose you have been awaiting since the initial release). So, if you register PalDRAW before the 1.10 launch (around late February 1996) you will receive, free of charge:

PalDRAW 1.0x register code

PalDRAW 1.1x register code. Initial improved revision.

PalDRAW 1.2x register code. Second revision phase, to give you the PD-PRESS.ZIP features

(and more).

## 12.3 Special Thanks

I want to thank the special support, information and or development contribution to:

- \* **The Pal Group**, leaded by Gilles Kohl, given PAL library to develop HP100/200LX application with a nice interface. "Portions Copyright, 1995, The PAL Group"
- \* **Axel Rocholl**, for the present icons recompilation and debugging, and his beta tester support.
- \* **Bill Sprague**, for revising and giving nice style to my very bad English, so you can easily read the current manual and all the other text.
- \* **Tom Hollnburger**, Beta tester and the translation to the German PalDRAW release, including text, program messages and the present manual.
- \* **Tony D. Guzewicz**, Translating PalDRAW to French, including text, program messages and the present manual.

Thanks to the collaboration of Bill, Tom and Tony, you have four language international support at the same cost. In other cases, a dedicated translator would been used, thereby increasing the PalDRAW final price. I think any user will join me in giving give special thanks to these partners.

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