**BEGIN_DOC roldx.doc version 1.6, 25 July 2000**



Roldx for the HP49G v.1.6 is a list browser that includes fast sequential and binary search routines, sorting, a 7 to 10 line display (any font), editing, printing, database selection from within the program, password encryption of individual entries, and viewing of entries in "full-screen" or in "headings only" mode, with repeatable scrolling-menu line display. Roldx is great for viewing crib sheets, notes, phone numbers and addresses, and other data, which can be password protected. Roldx can call a user-defined editor and sorting routine. Roldx is a library with ID number 1765, and distributed as "freeware". If you like it, please send a postcard or e-mail to

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Roldx has been tested on the HP49G with rom 1.16-1.17 and should work on all previous and future rom versions, but no guarantees or warranties are either made or implied.

**USE AT YOUR OWN RISK**

PLEASE BACK UP YOUR CALCULATOR'S MEMORY BEFORE USING THIS SOFTWARE. I am in no way responsible for any loss of data through the use or misuse of this program.

Changes from 1.5 to version 1.6:

1. Fixed a bug which caused overlapping highlighted text when a font size other than the system font (font 8) is used in headings only mode. Roldx should now be able to use any font size.

2. Fixed a bug which caused Roldx to crash if an entry with more than 10 lines is viewed and a font other than the system font (font 8) is used.

Changes from 1.4 to version 1.5:

1. Fixed a bug which caused overlapping highlighted text when the small font is set (flag –72 set), before Roldx is run.

3. Sped up the “top” and “bottom” display routines and added a “chirp” beep to them (can be turned off by setting beep off in the HP Modes menu).

4. Deleted the DBRDX database program, since there are now available faster list browsers, like Raymond Hellstern’s

Raymond.Hellstern@gmx.de “Lib Browser” library for the HP49G. get it at: http://www.hp48.bismarck.k12.nd.us/hp49/utils/misc/lb.zip or http://165.234.32.14/hp49/utils/misc/lb.zip

5. **The library is now distributed in “epack” format, to make it easier to install. Thanks to Cyrille Berger (mailto:cberger@mail.com) for this program. (http://www.planethp.fr.st/)**

Changes from 1.3 to version 1.4:

1. Speeded up scrolling, scrolling is now much faster and smoother.

6. Fixed a bug which caused display of previous entries when fewer than 7 entries are present in an item.

7. Added progress bar to “find” routine (thanks to David Haguenauer, hsamplon@lemel.fr )

8. Added ability to use the small font (same as system flag –72 set), use the / (divide) key to toggle. Small font is now also accessible when in the status menu.

9. Changed routines that display “end” and “top” of file to avoid long delay.

10. Modified this document and added HP49G fonts by Ted Kerber.

Changes from 1.2 to version 1.3:

1. Fixed a bug which caused display of previous line when in no-menu mode and fewer than 8 entries are present.

2. Made some corrections to this document.

Changes from 1.1 to version 1.2:

1. Fixed bug which caused re-display of previous data on empty line when in headings-only mode and fewer than 7 entries are present.

2. Program is slightly smaller and faster due to use of REPEATERCH system-rpl in place of my own routine.

3. Doc now distributed as PDF file, and source code removed from distribution file. Source code is available upon request.

Changes from 1.0 to version 1.1:

1. Fixed bad bug with sort program and added sort to libs menu so that sortR can be used independently.

Roldx is written in System-RPL for speed and compactness. Thanks must go to the following people for their contributions to this program: Glenn Robertson, for the binary search routine and for his encouragement, Simone Rapisarda, for the Coder program, Joe Horn, for the sorting algorithm, Detlef Mueller, for RPL48 (Great!), Raymond Hellstern, for LIB, J. Y. Avenard, for Stringwriter, Cyrille Berger, for ePack, David Haguenauer, for the progress bar routine, and many thanks to the ACO and the HP49G community on comp.sys.HP48.

Roldx has the ability to view only the "headings" of up to 10 entries at once (by "heading" I mean the first line, but any line number can be selected to be the heading line – see below), password encryption of individual items, sorting, database selection, editing, and a scrolling-menu display. The database structure is "free form" in the sense that you can store anything you like on any line, an "item" being a collection of fields in a list (A Roldx “database” is a list of lists, each inner list is an “item”, each “item” can have up to 10 “fields”, each of which is usually a line of text). Up to 8 fields of 22 characters each can be displayed when using the medium font, or up to 11 lines with the small font, depending on whether the menu is visible or not. I find this to be adequate room to store crib sheets, names, addresses, phone, fax, PIM numbers (password encrypted), and email addresses.

To install the library, first transfer the binary file **epackRDX** to The HP49G using HPCOMM, in binary transfer mode on both the HP49G and the host PC. Decide which port you want to store the library in. Port 0 doesn't get backed up when you use the Archive command, so you might want to use port 1 or port 2 (flash rom), which is not subject to memory loss. Enter the number of the port (e.g.: 2) and then execute **epackRDX**. Then force a warm start (ON-C). Now press the LIBRARY key (right-shift LIB on the HP49G), and keep pressing NXT until you see ROLDX on the menu. If you don't see it, it hasn't been installed properly - try again.

To uninstall the program, enter 1765 on the stack and use the DETACH command (from the CAT menu), then PURGE the library (by entering :port#:1765 PURGE.

To run the program, make sure that you have switched to the directory where you wish to keep your data. Note: Roldx "auto-attaches" at start-up, and is therefore available in any directory, including the home directory. However, I recommend that you *not* store your data in the home directory, for reasons cited below.

If you've managed to install Roldx correctly, then go to the directory that you wish to run Roldx from. (See below for a small program to automate this).

NOTE: If you have a database list that you've been using from an older version of Roldx, copy it to that directory. Otherwise, it is best to start the first time with a directory with no lists in it at all. Also note that, if you are transferring a database list from an HP48 or HP48 file on the PC, you must transfer it in ASCII mode in HPCOMM.

Now press ROLDX from the library menu to start the program.

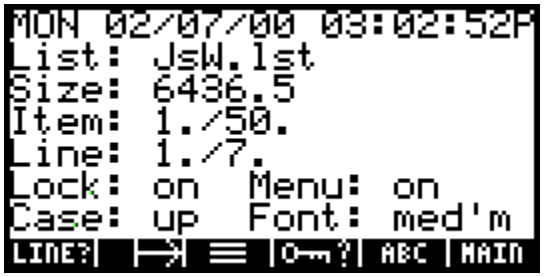
If this is the first time you're running Roldx you will get the message:

```
"Invalid rdPAR
 Press any key".
```

**Don't panic** - press any key and Roldx will go into data-base selection mode. Select a list from the menu by using the arrow keys to highlight it, then press ENTER (or ATTN or backspace). If Roldx couldn't find a valid list then it created its own called List1. (You can later delete this list if you made your own). You will now be placed in "Headings only" mode. Press ENTER to see the full screen. You can't delete the first item if there are no others, but you can edit it - or you can exit the program, put the list on the stack, and edit it using the normal HP49G editor. If you don't see a menu line, press * to get to the main menu, at which point you will see the following menu items:

find — FIND text prompted for. If one character only, only the 1st character of the line selected is checked for a match. If more than one character, a match is sought in any position. Only the line number ( as set in the status menu –see below) is searched. Case is ignored (lowercase text is temporarily converted to uppercase). NOTE: If lock mode is "on" (flag 39 clear) then password-protected items *won't* be found. Note: the text from the last search is stored in rdPAR and used as the default input line. Press ON once to clear the command line and start fresh. Pressing ON again will abort data-entry and return to the current viewing mode. You can also interrupt an active search by pressing ON.

status — find out about and change settings. Brings up the following menu:




The first menu key prompts you for the line number to search, and display if in headings mode, and then prompts for the number of fields to enter when adding items. If you enter a number larger than 10 or smaller than 1 for the number of the line to search/display, Roldx will report an error and go back to the status menu without changing the value. If you enter any number larger than 1, Roldx may look odd when in headings-only mode, since many of the entries might be blank. After the "lines?" prompt, you are prompted for the number of fields, which should also be in the range of 1 to 10 (7 is the default). Note: you are not limited to 10 fields - your data may contain as many as you like, provided that you create them outside of Roldx and then insert them. This value only affects the number of fields to be entered for new items within Roldx itself.

The second key changes whether the database is searched from the top or from the current item to the end:

|----> search from beginning
.|---> search from current entry

The third menu key changes whether one line of each item ("headings-only" mode), or all lines of the current item are displayed (full-screen mode).

The fourth menu key (picture above is supposed to look like a key) toggles lock mode. When toggling it "off" you will be prompted for the password. There is no "wrong" password, but your data will be garbled unless you use the same one you used when you encoded it. The fifth menu key selects whether, when adding or editing an entry, lower case or upper case mode is initially. The last menu key (main) returns you to the main menu. You can also use backspace, or ON.

help — brings up help/about screens

→stk — puts the current item on the stack. Left-shift →stk puts only the first field from that item left on the stack. If the item is encoded (password protected), it is *not* decoded when placed on the stack, so you can use →stk to move your items around (Don't use Left-shift →stk to try to move items, because stk← expects a list).

stk← — insert an item from the stack. If it is not a list, an error is generated. Inserts *before* the current item.

exit — quit the program. EXIT can also be initiated by pressing the backspace key or the ON (ATTN) key, no matter which menu page is showing. To get to page two of the main menu, press the NEXT key (PREV takes you back to page one of course.).

When in page two of the menu, the following items are presented:

Bfind — Binary search - only the first character of the text entered is used, and only the first character of the first line of each entry is searched (or whatever line number is selected in the status menu). The file MUST be in alpha sorted order for this to work properly (see SORT below). If you consistently get to items which you didn't want, then the file is probably not sorted. This routine is also always available from the EEX key, no matter which menu page is showing. See FIND above concerning text entry.

Suggestion: try entering more than one character to Bfind, e.g. "ABC". Bfind will find the first item beginning with "A" (assuming one exists). Then use Find, starting from the current position, and searching for the actual text "ABC".

add — add an item *before* the current item. This routine is also always available from the + key, no matter which menu page is showing.

del — delete the current item. You can't delete 1 of 1 from within Roldx, but of course you can at the operating

system level. This routine is also always available from the minus (-) key, and the DEL key, no matter which menu page is showing.

**edit** all lines must be processed, an empty string is OK. Pressing the ATTN (ON) key once clears the line, pressing it a second time exits edit mode and discarding all input, with the message "interrupted". This routine is always available from the +/- key, no matter which menu page is showing.

WARNING: whatever you EDIT gets turned into a string, so *don't* edit or sort lists such as IOPAR or PPAR that are needed by other programs or the operating system!

In the following, LS means left shift (blue) key, and RS means right shift (red) key:

LS **edit** from the menu, or left-shift +/- from the keyboard, tries to invoke QED (the case must match) which must either be in the current directory of in the home directory. WARNING: If a program called "QED" is found in the current directory or above, it will be run, even if it is not an editor program. *Don't* label any programs "QED" that are in the current Roldx directory or in the home directory unless it contains an editor program. It's possible that you could have an entirely different program stored in a variable called QED. If you do, then make sure it's not in your home or current directory, as noted above. If you have a program called QED which is either of the following: < >> or << QED >> , then Roldx will go into an infinite loop and you will have to press on-C to recover.

Don't set up QED to leave a return code number on the stack, and don't exit with keys that leave a return code. Doing so will exit the editor with the error message "User editor not found" and leave the data unchanged.

RS **edit** Invokes the HP49G's native (built-in) editor. This can be useful for formatting text, searching and replacing, etc. But be very careful not to remove or add any list delimiters { or } - doing so will make Roldx malfunction.

If you exit the editor by pressing left shift ENTER, or exit the HP editor by pressing ON (cancel), or you entirely clear the current item, Roldx will NOT update the database with that item.

WARNING: The HP editor does not understand Roldx's data encryption format, so don't try to edit password protected items with the built-in editor. If you do so, the item will be rendered unintelligible.

**print** print current item to the current printer. This routine is always available EEX key, no matter which menu page is showing.

**data** start the data base selection program. Roldx searches for all lists in the current directory.

Move the selection bar to the list you want using the arrow keys.

NOTE: When the data selection program is exited using ON or backspace or the MAIN menu key, whatever list was highlighted becomes the current database - there is no "quit and don't save" mode.

sort — sorts the selected list into alphabetical order (case is ignored) and then selects that list, returning to the main program. See USORT below.

In addition to the menu keys above, the following key-presses are supported: ("with repeat" means you can hold down that key to scroll continuously):

 or  — next item, with repeat.

 or  — previous item, with repeat

LS  or LS  — next 7th (or 8th) item

LS  or LS  — previous 7th (or 8th) item

RS  or RS  — go to last item

RS  or RS  — go to first (top) item

ENTER — switch between "headings-only" and "full-screen" modes

RS ON — pauses the program and turns the HP49G off, turning password protection (lock mode) back on in the process. (This is to prevent someone from accessing your password and data after the machine has been turned off and back on again, since you might forget that you have left the machine "unlocked".

* — Toggle the menu line on or off.

/ — Toggle between small font and medium font (small font is the same as system flag –72 set).

EEX — Same as PRINT

X — Same as FIND

alpha — Same as BFIND

1/X — User-edit (invokes QED)

+/- — edit

RS +/-  System editor.

backspace  Quit Roldx.

NXT  Next Menu page.

LS NXT  Previous Menu page

To exit the program, press the backspace key, or the ON key, or EXIT from the main menu.

The settings of user flags 32 through 39 are as follows. (Use the STATUS menu key to enter status mode and change the settings). Note that the flags will only have an effect if DBRDX is invoked (no rdPAR) or if ROLDX was invoked with an invalid or missing rdPAR. Otherwise, Roldx use the flag settings saved in rdPAR:

Flag -72  if clear, Roldx displays text in the medium (5x7) font. If set, it uses the small (3x5) font (used to be user flag 31, now a system flag as of version 1.5)

Flag 32  if clear, the menu line is displayed, plus (up to) 7 or 10 lines of text. If set, the menu line is not displayed, allowing 8 to 11 lines of text. Note: when entering text using Roldx's editor, you can only enter as many fields as you have selected using the LINE menu key in the status menu (see above) but only up to 10 lines will display.

Flag 33  if clear, the FIND command searches from the current position in the list, if set, it searches from the beginning, which can be fairly slow for large databases. Note that only the line number in rdLINE is searched (searching all lines would be too slow - perhaps a future version will overcome this). The search mode used is sequential, rather than binary. BFIND ignores this flag.

Flag 34  if clear, display all lines of each item (full-screen mode), if set, display only one line of each item (headings-only mode). Headings-only mode is useful for quickly scrolling through the file. With flag 34 set, the line displayed for each item is the value of rdLINE.

Flag 35  temporary flag, set when in data program only.

Flag 36  temporary flag internal to Roldx.

Flag 37  used to toggle between 1st and 2nd main menu pages, clear at start-up for menu page one.

Flag 38  alpha mode lower case when set, upper-case when clear. Affects input of text.

Flag 39  when clear, lock mode is on and individual items which are password protected will appear garbled. When set (this must be done from the status menu, and the password given), the items will be readable only if the password given was the correct one, otherwise they will appear garbled.

Flag 40  set for QED edit, clear for internal editor (not available to the user).

Flag 41 clear for internal < sort, set for USORT (not available to the user).

When Roldx is first started with an invalid or missing rdPAR, it automatically scans the current directory for lists, and creates "List1". (List1 can be added to or deleted if you have selected another). If you invoke Roldx from your HOME directory, or another directory containing lists like IOPAR, PPAR, and others used by the operating system, you might inadvertently alter them. For this reason, I recommend that you make a special directory to store your data, and use the following program to access it. You can store this program in your HOME directory, and call it something like Rldx (note lower case letters) to distinguish it from the ROLDX command:

```
%%HP: T(3)A(D)F(.);
\<< PATH \-> p
\<< HOME mydirROLDX p EVAL
\>>\>>
```

The above example switches to a directory named "mydir" (edit as needed) and, when done, switches back to the current directory. The following programs are supplied with Roldx and are accessible from the library menu:

**DBRDX** has been deleted (see change notes above.

**SortR**, which is based on a program by Joe Horn, expects a list and sorts it into non-case-sensitive alpha order. NOTE: sortR does NOT decode password-protected items when sorting, since this would slow it down to a crawl. If you sort a file with password-protected items, they will all wind up at the beginning of the file. You can move them around with →STK and STK← as noted below.
SortR will use a user-supplied sorting algorithm if one called USORT (case must match) is found in either the current or home directory. **USORT** must take exactly two arguments off the stack and leave one real number, 0 (false) or positive number (true). Failure to do this will default back to the internal sort. The following USORT is equivalent to the internal sort (but slightly slower):

```
<< < >>>
```

To sort in ascending order, USORT could do this:

```
<< > >>
```

You can experiment with more complicated methods, as long as your program can compare two strings and return a number for true or false.

**Coder**, written by Simone Rapisarda, works as follows: Put a string to encode or decode in level 2, password string in level one, press CODER. If the string to decode is longer than the password, the password is repeatedly concatenated to itself until its length is equal to or exceeds the string length. The two strings are then XOR'd, in system-RPL. Simple, but effective.

**UC$** translates the letters a-z to A-Z. It needs a string for input.

**Chp** makes a pitched chirp sound.

You can edit each item outside of the ROLDX program by using →STK , then edit it with the normal HP49G object editor, then run ROLDX again and use STK← . If the stack does not contain a list, an error will be generated. To move an entry from within Roldx, execute →STK, DEL, (move to the item you want it inserted before), then STK←. The data format makes it fairly easy to transfer data to a PC and edit it there - you must use ASCII mode to transfer it, with character translation on number 3.

Note: the HP49G comes with a built in editor that is actually fast enough to edit a large list, even a Roldx database with hundreds of entries. It even has the ability to search and replace, as well as assign font attributes. This could be useful for editing Roldx databases, however, it should be used very carefully. In particular, if you accidentally delete or add a list delimiter “{“ or “}”, Roldx will not function correctly.

Roldx only uses supported entry points, and therefore should be compatible with future rom updates. Roldx uses very little memory when viewing lists, but when editing lists, it needs slightly more ram than twice the size of the list in bytes.

Again, please remember to back up your data before using Roldx.

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