# *Super* ROM

## FOUR PROGRAMS IN ONE
## COMPLETELY INTEGRATED

**LUCID SPREADSHEET • WRITE ROM**

**DATA BASE • THOUGHT OUTLINER**

on Snap-in ROM

Portable Computer Support Group

214-351-0564

# Preface

## Amazing but true!

The typesetting for most of this manual was prepared using the Model 100, Super ROM and the Hewlett Packard Laser Jet Plus printer.

Other parts were prepared using the IBM PC and Word Perfect program.

**A.  Done on Model 100 with Super ROM:**

1.  This preface page.

2. The three "Intro to Super ROM" chapters

3. The ten THOUGHT manual chapters.

**B. Done using IBM PC and the Word Perfect program:**

1. The Database tutorial manual

2. The Database reference manual

*Take a look at the quality of the fonts, as well as the professional appearance of the copy. As amazing as it seems the Model 100 with Super ROM performed equally to the desktop computer.*

As you will discover Super ROM really is a very powerful piece of integrated software that gives your Model 100 or 200 capabilities that in many instances cannot be achieved on a  desktop.

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# SUPER ROM

## Overview

The SUPER ROM manual is to be used in
conjunction with the Lucid manual and the
Write ROM manuals. This book is comprised
of three books. The Overview tells why
Super ROM is so super as well as describing
enhancements to Write ROM and Lucid. The
THOUGHT and DATABASE manuals are complete
instructional books with both tutorial and
reference features.

# SUPER ROM OVERVIEW

## Chapter One

## Introduction

Super ROM consists of four modules, Write ROM, Lucid Spreadsheet, Relational Database and Thought Outliner.

Super Rom is however far more than merely four standalone programs. Super Rom is a fully integrated package that gives the Model 100 or 200 power that is comparable to (and in many respects surpasses) the best known integrated software on the desktop computers.

This term "integrated" has really become a buzz word in the software promotion game and has been misapplied more often than not. If software is really integrated it needs to meet several essential requirements.

> a. All the software needs to be "up" at the same time. This means that you can go from one application to another with a couple of keystrokes and then back again without losing anything.

> b. All the programs need to be able to have cross compatibility. This means that whatever work you generate or produce with one application needs to be able to be used on any other of the applications quickly and easily. To be truely integrated you need to be able to take the product of one application and use it as part of any other.

> c. All the programs need to have similar user interfaces. Key combinations for features and

functions in one application that are the same
or similar to another application need to be
consistent so that it is easy to go from one to
another.

The Model 100 itself broke new ground with its
user interface. The only problem was that the
built-in software just didn't go far enough.
The Model 100 almost met the requirements for
integration except the user needed more.
Missing was a powerful spreadsheet, a word
processor to enhance the built in TEXT program,
and a data base. All these are included in
Super ROM. We also included an outliner or idea
processor that is better than anything you can
get on a desktop.

**Cut and PASTE is the link**

What is most significant about Super ROM is that
now you have complete cross compatibility
between all applications with the same Copy, Cut
and PASTE functions that you are familiar with
in TEXT. With Super Rom you have the ability to
Copy, Cut and PASTE from any program and in any
direction: from a TEXT file to a Lucid
spreadsheet, from a Lucid spreadsheet to a TEXT
file, to and from a Thought outline to and from
a TEXT file or a spreadsheet. From any database
to any other applications work file. In fact it
will work in any combination you can think of.

Further you use the same Select, Cut, Copy and
PASTE key combinations that you are used to from
TEXT.

We want you to know that it was quite a feat for
us to achieve this Copy, Cut and PASTE cross
compatibility. We are quite proud of it. If you
were a previous Lucid owner you will remember
that while Lucid had a very strong capability in
being able to Copy, Cut and PASTE with

keystrokes like TEXT, it allowed you three possibilites 1) inside the same spreadsheet, 2) from one spreadsheet file to another, and 3) from a spreadsheet file to a TEXT file.

Now Super ROM's Lucid allows other possibilities: 4) You can Cut or Copy either hidden formulas or the top text (what's displayed), 5) You you can Cut, Copy and PASTE from a TEXT file into a Lucid worksheet, 6) You can PASTE that text as either formula or top text.

Sounds like a simple addition, but it is "oh so wonderful". This enhanced capability is paralleled in the Thought program. So now you can go in any direction beween Spreadsheet, Text file, Database or Thought outline. The product of any application can become a part of any other application.

In addition to completing the integration cycle it also allows ThinkTank outlines from desktop to be used instantly in Super ROM. This means that you can also take a a Thought outline and use it in ThinkTank, without having to use any conversion utilities. All you do is port the applications as text files and then cut and Paste them into the appropriate Super Rom file. Going back the other way is just as simple. Similarly Lotus spreadsheets have the same type of compatibility for top level (output) transfers. Formulas can be transfered as well, but some modifications by hand would be required.

Super Rom really makes the Model 100 or 200 a great computer. It is the logical evolution of an excellent concept.

Sophisticated computer users realize that the capability of a computer depends considerably

more on the software than the hardware. Adding
Super ROM power to your Model 100 is
conceptually equivalent to buying a new
generation laptop computer. Super Rom has pushed
forward the state of the art with startling
results. It is priced as low as $200.00 but adds
capability to your Model 100 that cannot be
found on software/hardware systems costing 100
times that amount.

The Super ROM modules are not only integrated
with each other, but with the built in software.
Any cell in a Lucid spreadsheet can contain an
entire TEXT file, limited only in size by the
Model 100's memory.

The same is true of the headings of Thought, the
outline processor. Thought has all the features
of the most advanced desktop outline processors
including cloning, dragging, hoisting, and so
on. As we said before any heading can contain an
entire TEXT file. There is no better way to keep
track of your plans and ideas.

The WRITE ROM module in Super ROM is the same
program that received a rating of excellent in
its Infoworld review. It includes facilities for
automatic sending of electronic mail using the
Model 100's built in modem. Its other features
are expounded upon in considerable detail in the
individual WRITE ROM manual.

The spreadsheet that you get in Super ROM is the
same one that reviewers have raved about for
over a year, except that it now has numerous
enhancements. We have already talked about the
greatly extended cut and paste capabilities.
There are also eleven new mathematical operators
and many new functions. The operators and
functions allow relational and logical
operations to achieve boolean values of true or
false. Lucid also now has the ability to find

any number or label in the spreadsheet at the touch
of a key, and the ability to sort by row or by
column.

Another wonderful feature to facilite ease of movement
between modules is that both Lucid and Thought remember
where in a spreadsheet or outline you were when you
left, and bring you exactly back to that point when you
resume. There are numerous other enhancements of Lucid
of which two of the handiest are the CTRL down arrow
function which takes you to the bottom right of the
currently used area of your spreadsheet, and the new
way the TAB key works. It works just like the Ctrl
right arrow combination to move across a row. TAB now
lets you rapidly make entries across a row with one key
ease, the same way down arrow lets you rapidly enter
figures down a column.

Unchanged in Lucid is the memory conserving sparse
matrix data structure, which since the introduction of
Lucid last year has been emulated by Lotus 1,2,3 and
Symphony.

Database afficionados will be impressed by the richness
of Lucid database's abilities combined with the
remarkable ease of use. You design both input screen
and reports using the text editor built in to the Model
100. The database makes both data entry and report
generation a snap. Features of the data entry system
known as "View" include:

a. Multiple views of the same data just like with
main frame systems. This means that for a single
record you are not limited to the size of the screen
for input, but can have as many pages per input form
as you wish allowing up to 127 fields per record.

b. Reference only fields allowing immediate on
screen retrieval of information during input,
with access to multiple files from a single

input form.

c. A function key to automatically duplicate a repeating field.

d. Search capabilities to pull up any record.

The report generator is similarly impressive. There is no limit on the number of files that can be accessed from a single report.

a. It has two levels of subtotal breaks.

b. Allows formatting with page headers and footers.

c. Is able to print up to four mailing labels across a page.

d. Features user designed output template in TEXT with no limit on the number of lines per record printed.

For example you could print an invoice with a six line header including a customer name and address from your customer file followed by any number of line items, one item per line, automatic page break (if all will not fit on a single form) including the totals carried forward automatically feeding to a new form for the next invoice.

The Model 100 looks like a toy. But during its three year evolution software support has continued to make it the laptop choice for computer industry insiders. Super ROM represents the culmination of this evolution providing serious users with a set of serious tools to amplify their business potential.

# SUPER ROM

## Chapter two

## Super ROM Installation

## I. Remove the little back cover.

> A. Make sure that you have a backup copy of
> all the important files in your machine.
> Normally you will not lose any data when
> installing your SUPER ROM, but it is  best to
> be safe.

> B. Turn your Model 100 off (the switch on the
> side, NOT the memory power on the bottom).

> C. Turn it over on a flat surface, and pry
> off the cover in the center at the bottom.
> You can use a screwdriver or pocket knife, or
> a quarter will do.

## II. There are two sockets under the cover.

> A. One is a long, flat one with two parallel
> sets of holes. This is the system bus.

> B. The other is nearer the edge of the
> computer. It is a raised black socket with a
> row of silver contacts down the inside of
> each edge. This is the option ROM socket.

> C. Note that at one end of the socket there
> are two notches, and at the other end there
> is only one in the center.  Noticing these
> notches is important to be sure the SUPER ROM

## III.  Pressing the ROM in place.

A. Take the SUPER ROM and inspect it. You will notice that at one end there is a tiny little finger that projects, and that at the other end the circuit board overlaps slightly.

B. You install the ROM with the label facing toward you with the label reading in the same direction as the Model 100 serial label, and little finger fitting into the single notch side of the socket . (This "finger and notch" will prevent you from installing it in the wrong direction.)

*C. Press the SUPER ROM into the socket firmly with both thumbs.*

D. Don't replace the cover yet, turn the computer so you can see the screen.

E. Switch the computer on.

## IV. If you don't see the Main Menu:

A.  If you don't see the M-100 Main Menu switch the Model 100 off again, remove the SUPER ROM.

B.  Reinstall it carefully following the instructions above. This time press more firmly with both thumbs until it seats all the way.

## V. Starting SUPER ROM:

A.  When you see the Main Menu, place the widebar cursor on BASIC and press ENTER.

B. When you see the Ok prompt, type in the following,

*M100*     **CALL 63012**

*T200*   *CALL 27801,,0*

*C. Press ENTER. After a moment you should see the PCSG Copyright notice and the SUPER ROM menu with this screen:*

**TRS-80 Model 100 Software**
**Copr. 1985 PCSG  (V000)**

        **F1 == Lucid**
        **F2 == Write ROM**
        **F3 == Thought**
        **F4 == Lucid Data**

If you don't, switch off the computer, remove the SUPER ROM, and reinstall it carefullly following the instructions above.

# VI.  Super is now like a built in.

A. When you see the Copyright notice of SUPER ROM, press F8 to return to the Main Menu.

B. You will see SUPER appear just like the built-in programs.

*C. NOTE: This CALL 63012 is only necessary once, just to tell your computer that there is a ROM present, unless you ever cold start your machine.*

# VII. Accessing SUPER ROM

A. You will access SUPER ROM just by placing the wide bar cursor on the name SUPER and pressing ENTER.

B. Press the function key for the program you want. F8 exits any of the four and takes you to the Main Menu.

> NOTE: We considered and rejected the concept of having the four programs exit you back to the SUPER ROM menu instead of to the Main Menu.
>
> In a nutshell, the reason is that you will primarily be exiting from one program to use the select and copy function in order to paste into another application. Therefore you will want to exit from an application and go immediately into another. Lucid worksheets and Thought outlines when accessed from the Main Menu take you directly into SUPER ROM. This approach saved you keystrokes. More on this in the next chapter.

C. Read the previous section about how the programs are integrated then study the appropriate manual for each program for operating instructions.

## VIII. That's all there is to it.

You can replace the cover on the little opening on the back of the Model 100.

# IX. SOME MORE HINTS

A. Make sure your Model 100 is turned off before installing the SUPER ROM.

Turn off the power switch on the side, NOT
the main memory power switch on the bottom.

B. Remove the door on the bottom of the Model
100 with a key or quarter.

C. The SUPER ROM comes to you in its correct
form. Do not attempt to remove the spacer on
the bottom of the SUPER ROM, as it is
important. The ribbon is used to remove the
ROM from the socket.

D. The SUPER ROM will only go in one way. The
first time you install a SUPER ROM , you will
have to press hard. Press on the two ends of
the SUPER ROM with both thumbs.

Do not press on the center of the SUPER ROM,
as there is a little window that could be
broken if you press there.

E. Fold the two ends of the ribbon down if
necessary when you replace the
door.

## X. OTHER ROMs

A. If you use other ROMs from PCSG (like
Disk+ file transfer program, Business
Analyst, Typing Teacher or Easy Mail), the
SUPER ROM name on the menu will not change
when you change ROMs until you select the ROM
program by pressing ENTER on the SUPER ROM
name.

B. Although the old ROM's name, in this case
SUPER ROM was on the menu, you will find
yourself running the new ROM you just
installed, and when you exit back to the main
menu, the name will have changed to the
correct one automatically.

## XI. The 6 ROM bank

A. PCSG in conjunction with Cryptronics, Inc. of Fountain Valley, California has developed and now markets the 6 ROM bank.

B. This ingenious device allows you to have up to six ROM's installed at once. It also has a built-in Nicad battery that gives you up to 30 hours of Model 100 power with only six hours of charging time.

C. You can have your SUPER ROM plus five additional ROMS. You can order the 6 ROM Bank directly from PCSG.

# XII. Removing SUPER ROM

A. The SUPER ROM removes easily using the ribbon. The ribbon is provided so that you can grasp it on each end and pull it out steadily and evenly.

B. If you wish to remove the SUPER ROM and not replace it with another ROM, you will have to remove the name from the main menu before taking out the SUPER ROM.

C. Go into BASIC, and type the following:

*M100*   **CALL 63012,0,1**
*T200*   *CALL 27801,, 256*

This will remove the SUPER name from the menu, and you can now simply take out the SUPER ROM.

# SUPER ROM OVERVIEW

## Chapter three

## ENHANCEMENTS – Write ROM & Lucid

## I. Summary of changes to Write Rom

### A. Search and Replace

1. We have improved the prompts for this function. As you recall search and replace is utilized by pressing F1 (Rplc) from the Write ROM main level. Screen now says:

**Srch for [F8]]**

followed by

**Rplc with [F8]**

2. The additional "for" and "with" make it easier to follow when doing a search and replace.

### B. If you have no document files in RAM

1. If you accessed the old version of Write ROM and had no documents in RAM, you had to create one using the F3 (New) function in order to exit the program.

2. Now if you go into Write ROM or any of the other programs you can just exit with F8 irrespective of whether you have any files present.

### C. Footer or Header not margin sensitive

1. The old Write ROM would not permit headers

or footers in excess of your margin settings, this could cause a header or footer to be truncated (or chopped off) if a margin setting shorter than the header or footer was in effect.

2.   The new version in Super ROM allows them up to an 80 character header or footer irrespective of any margin settings global or temporary.

# II. LUCID Spreadsheet improvements

The new LUCID data interfaces so completely with LUCID that you could regard all of those features as LUCID improvements. Hovever, there are several changes that the previous user of the LUCID spreadsheet will recognize as obvious enhancements to the old LUCID.

## A. Cursor movement:

1. The TAB key now allows you to move the cursor to the right a cell at a time. As you recall when you typed in information into a cell pressing Down arrow took you out of edit mode, recorded the data and moved you to the cell below.

2. Likewise up arrow worked the same way. If you were rapidly entering data in any of those directions you had no problem, but if you wish to enter data rapidly across a row to the right is was a different story. Some folks found it inconvenient to have to do a CTRL Right arrow to accomplish what those other arrow keys did. Right arrow by itself moved inside the edit window in the right hand direction.

3. Now TAB acts just like CTRL right arrow. You can very quickly and conveniently build a row of data using the TAB key to move you to the cell to the right.

4. CTRL down arrow -

CTRL down arrow now takes you to the bottom right hand corner of your current worksheet. This is a great improvement for the printing sequence, because you can now just print your complete worksheet without having to search for

the far corner.

CTRL down arrow is of course effective anytime
you need cursor movement for any propose,
either defining a block, or moving your work
cursor to a new position.

### B. Find

1. Formerly a function of an optional RAM
loaded utility, LUCID now has built in an
excellent find function like you are used to in
TEXT.

2. You can find any "string" of characters
either letters or numbers. This excellent
feature will move the cursor to each occurence
of the search "string" in any displaying cell
whether typed in or an answer calculated from a
formula.

3. This feature is discussed in the reference
section immediately following.

### C. Sort

1. Also previously a feature available only as
a RAM loaded utility, Super ROM LUCID now has
Sort built right in. You can sort by row or by
column any block that you specify and it sorts
both alphabetically and numerically.

2. This feature is discussed in the reference
section immediately following.

### D. PASTE from a TEXT file.

1. LUCID now allows you to PASTE any
information from any TEXT file right into any
LUCID worksheet. Previously you could cut from
LUCID and PASTE into any text file as well as
another LUCID worksheet file, but you couldn't

cut or copy from a TEXT file back into LUCID.

2. Now you have unlimited Copy, Cut and PASTE in any direction from any application to any other.

**E. Screen doesn't blink when selecting-**

1. With the old version of LUCID the screen blinked with each cell as you moved across, when you were selecting a block of your spreadsheet with the F7 (Sel) "select" function. It was annoying to say the least.

2. The new Super ROM LUCID gives a steady screen as you block out your selection.

**F.  Access TEXT**

1. Although this is a feature discussed in the DATABASE manual it should be mentioned here as an enhancement fo LUCID because you don't need to understand the Database to use it with LUCID.

2. You can access any TEXT file dirctly from a LUCID cell.

3. Just type a six letter filename in a cell with a ".DO" extension.  With the cursor resting on that or any cell containing a ".DO" filename, press F6 (Data), then F6 (Text).

4. You will find yourself in the Model 100's built in text editor editing its text file. If the file doesn't exist already, it will be created.  When you press F8 you go right back into LUCID.

## G. New cut & PASTE

1. Now get "cell display" or "cell contents"

   a. You can now copy or cut and PASTE your choice of either the "top" (what is showing on the screen) or the formula (actual cell contents).

   b. This new feature lets you create new worksheets with the results (or displayed values) where previously you could only paste cell contents.

2. How it works

   a. When you press the PASTE key in LUCID spreadsheet the bottom line now says,

Fmla Text                    Exit
 1    2   3   4   5   6   7   8

   b. This allows you access to both the Lucid PASTE buffer and the PASTE buffer used by the built in TEXT program. Pressing F2 (Text) pastes into the spreadsheet what was showing on the screen when you last did a cut or copy whether in Lucid, TEXT, or Thought.

   c. For example, suppose you had the formula +A1+B1 in a cell and the result that showed on the screen was 12. If you cut that cell from your spreadsheet the formula would go into the LUCID formula paste buffer and the number 12 would go into the TEXT PASTE buffer. After pressing PASTE you could choose to PASTE in the number 12 rather than the formula simply by pressing F2 (Text) rather than F1 (Fmla).

d. Pressing F1 (Fmla) always gives the same result as pressing PASTE formerly did in the old Lucid.

*Note: F2 (Text) only pastes what was blanked out in reverse video. If you had a label long enough to spill over into adjacent cell, and you selected only the first cell, pressing F2 (Text) after PASTE would only paste what showed on the screen in reverse video. To paste the entire label with the Text option, select it so that the whole label was picked out in reverse video. Or you could select the cell containing the beginning of the label and use the Fmla option when pasting.*

## H. Converting old Lucid files to new.

1. Although this is not an enhancement it is important that we discuss how you can convert old Lucid files to run with the new Super ROM Lucid.

2. Old Lucid files are automatically converted to Super ROM files. Simply access them from Super ROM main menu.

*WARNING: If you access an unconverted old Lucid file from the Main Menu by putting the wide bar cursor over it and pressing ENTER you could cold start your machine.*

Remember: Be sure all old Lucid files are accessed the first time through Super Rom. Press F1 for Lucid. Type the old Lucid filename. It will be converted automatically.

3. From then on you can access it directly from the Main Menu like any other. It is now a Super ROM Lucid file.

## I. Lucid remembers where you were

Often you will exit from a spreadsheet and go into another application like a THOUGHT outline . In the former version of Lucid when you re-entered you were always at the upper left corner. Now when you re-enter you are back exactly at the cell location where you left it. In true integrated fashion this same feature is found on the Database and Thought files.

## J. Upgrades to the global format feature.

1. To change the format of all currently existing entries you need to specify a range of A1:DV249 rather than A1:DV253. This is because rows beyond 249 are now reserved for internal use of Lucid Data.

2. The method of specifying the default format of newly created cells has been enhanced to allow each column to be formatted independently. To do this you simply format a dummy value in row 250 of the column you want formatted. When you create a new cell, Lucid looks at row 250 of the column you are in. If there is anything there, Lucid formats the new cell with the contents of row 250 as a pattern. If the cell in row 250 is empty, Lucid simply uses the standard (two decimal place) default format.

   For example, if you want the values in column C to be integers and the values in column D to be in the dollar format, you would:

   a. Go to cell C250 and type a 0 (zero) and press Enter. It shows on the screen like this:

                0.00                *(dummy value)*

   b. With the cursor on cell C250 press F7 (Sel), then ENTER, then F1 (Disp), then F2 (#.##). The screen says:

                Decimal places:2

   c. Backspace out the 2 and type 0, then press

ENTER, and F8 (Exit). Now any new entries in column C will appear with no decimal places.

d.  Go to cell D250 and type in a 0 (zero, the dummy value), and ENTER. Again the screen will show:

    0.00                    *(dummy value)*

e.  With the cursor on cell D250 press F7 (Scl), then ENTER, then F1 (Disp), then F5 ($###) and F8 (Exit). Now any new entries in column D will appear in the dollar format.

## III. Lucid Find

### A. Description

1.  The Find function allows you to type in a
    search word or characters. When you press
    ENTER, "Find" will automatically move you
    to a cell where a search word is located.

2.  The search area is always to the right and
    below the cursor location at the time the
    Find function is invoked.

### B. Using the Find function

1.  Press '>' (Goto). The bottom line clears
    and says:

    Goto: A1 (or another cellref)

2.  Backspace out the cell reference.

3.  Now you can type in any characters that you
    wish to search for and then press ENTER.

4.  Here is what happens:

    a.  If that word, phrase or characters that
        you typed are below or to the right of
        the Lucid cursor you will go immediately
        to the first cell where the characters
        occured.

    b.  After you are moved to the new location,
        the lower left of the screen  will say:

More
1

c. If this is the occurence you were
seeking, simply press F8 (Exit). If you
wish to find another occurence of the
search characters  press F1 (More). If
another occurence of the characters is
below or  to the right of the last
occurence (the new Lucid cursor
location)  you will move to the cell
with the second occurence. The Lucid
cursor will now be resting on that
location. The lower left will say :

More
1

d. If you wish to find still more occur-
ences you can repeat the sequence
described in "c." above. If there are no
further occurences  the lower left of
the screen will say:

No match

# IV. Lucid Sort

## A. Description

1.  The sort allows you to sort any range or cells by either row or column.

2.  If you are sorting a range of multiple rows or columns, it allows you designate the key cell across the columns or down the rows that you wish as the sort on.

3.  You can designate a sort to be in either ascending or descending order.

## B. Quick View guide to Sort.

*Quick View steps. Detailed reference follows.*

1.  Select the range you wish to sort using F7 (Sel).

2.  After selecting the range, the bottom line of the screen will show:

| Disp | Wdth | Ptct | Unpt | Copy | Cut | Sort | Exit |
|------|------|------|------|------|-----|------|------|
| 1    | 2    | 3    | 4    | 5    | 6   | 7    | 8    |

3.  Press F7 (Sort). The bottom line of the screen will show:

| Row | Col | Asc | Desc | Key | Go | | Exit |
|-----|-----|-----|------|-----|-----|-----|------|
| 1   | 2   | 3   | 4    | 5   | 6   | 7   | 8    |

4.  Choose to sort by F1 (Row) or F2 (Col).

If you want the rows rearranged type F1 (Row). Columns rearranged, F2 (Col).

5. Choose the key cell if you are sorting a range of multiple columns and rows. Press F5 (Key). Type in the key cell you want the range sorted on. If you are sorting by columns the key cell can be any of the corresponding cells across the columns where you want the sort to be effected. If by rows the key cell can be any of the corresponding cells up or down where you want the sort to occur.

6. Choose whether sort is to be in ascending, F3 (Asc) or descending order, F4 (Desc).

7. Press F6 (Go) to effect the sort.

## C. Detailed reference for Sort.

### 1. Select the range to sort.

a.   You can sort

>   i. single row
>   ii. a single column
>   iii. multiple rows and columns

b.   You must define the range to sort in the same fashion as you define the range in Lucid for copy or cut or printing.

c.   When you are using Lucid and are at the main level of function keys the screen appears like this (row and columns can differ);

```
Edit Calc File Ins  Del  Data Sel  Exit
  1    2    3    4    5    6    7     8
```

Press F7 (Sel).  Screen says:

>   Range Al:Al    (or wherever the cursor is located)

d.   You have two choices:

(1)   First option. Press F1 (Edit) and type in the range you wish to sort.

Example

>   Range A4:G20

Then press ENTER

(2) Second option. Press the period to cause
the cursor to stretch over the range you
want when you move the arrow keys
appropriately. While you are stretching
the cursor the area being designated
will show in reverse video and the range
in the lower left will change
accordingly to reflect the area being
blocked.

Press ENTER when the total area you wish
to sort is defined in reverse video.


e. The function keys now return to these:

```
Disp Wdth Ptct Unpt Copy Cut  Sort Exit
 1    2    3    4    5   6    7    8
```

f.  Press F7 (Sort). The bottom line clears and
says:

```
Row  Col  Asc  Desc Key  Go        Exit
 1    2    3    4    5    6    7    8
```

g.  The area you blocked out for sorting
remains shown on the screen in reverse and
the arrow keys no longer allow you any
movement.


**2. Choose to sort by F1 (Row) or F2 (Col).**

This means do you want the rows or the
columns to be arranged in a different
order?

    a. If you are sorting a single row you would sort by column, F2 (Col).

    b. If you are sorting a single column you would sort by row, F1 (Row).

    c. If you are sorting multiple rows and columns you will choose which you want arranged differently.

*Note that the default is by row, F1 (Row) appears in reverse video when you access the sort function key labels. If you press F2 (Col) it will show in reverse and the F1 (Row) label will show in regular print.*

**3. Decide the key cell you want to sort on.**

This is for sorting multiple rows or columns.

    a.   Note about single rows or columns:

       If you are sorting a single row or a single column the key cell must be any cell in that row or column. The default key cell is whatever the cursor is on. If you are sorting a row or column distant from your cursor location you will have to designate a key cell in the range of row or column you are sorting in order for the sort to take place.

    b.   Choosing the key cell for a multiple row and column sort.

       Procedure:

(1) Press F5 (Key), screen says,

        Key cellref: A4   (or whatever cell
                             cursor is on)

(2)    Backspace and type in any cell
reference in the row or  column
where you want the sort to occur.

(3)    If you are sorting by columns pick
any cell in the row where  you want
the sort to occur. If by rows, and
cell in the column where you want
the sort to occur.

## 4. Choose an Ascending or Descending order

Lucid sorts in 'Standard ASCII' order,
ignoring the case of letters and putting
blank cells before numbers and numbers
before character strings (labels).

Ascending order would mean that the number
1 came before the number 9, and the letter
A comes before the letter Z.  Descending
order would mean the opposite.

Note that if you have entered a number as a
label (for example a zip code or phone
number), it may appear to be sorted out of
order.  This is normal.  For example the
label 100 would be considered by Lucid to
be smaller than the label 24, since 1 is
smaller than 2,  and Lucid would view it as
a similar case to BAA being less than CE.
The fact that there is a third character in
the first label (100) would would not

change the fact that the intial character
was less.

Of course, if both the 100 and the 75 were
entered as numbers (without a leading '),
the 100 would correctly be considered
larger than the 75.

# D. Examples

1.  Consider the following range of cells:

|     | A               | B        | C       | D       |
| --- | --------------- | -------- | ------- | ------- |
| 001 | Name            | Addition | Percent | Cost    |
| 002 |                 | Order    | by wt.  | per lb  |
| 003 | SL Sulfate      | 2        | 10      | .84     |
| 004 | Stearic Acid    | 5        | 4       | 1.15    |
| 005 | Propylene Glycol| 3        | 2       | .67     |
| 006 | Water           | 1        | 75      | .01     |
| 007 | Mineral Oil     | 4        | 8       | .81     |
| 008 | TE Amine        | 6        | 1       | 1.84    |

2.  The following procedure examples will sort
    this range:

    a.  In ascending order by name.
    b.  In ascending order by addition order.
    c.  In descending order by cost per pound.
    d.  In ascending order by heading.

a. In ascending order by name.

    i)   Press F7 (Sel).       Press F1 (Edit)
        Backspace and type range to read:

          Range A3:D8
          *(you don't want to sort the headings)*

      Press ENTER.

    ii)      Press F7 (Sort)

    iii)     Leave F1 (Row) in reverse (the default)

    iv)     Leave F3 (Asc) in reverse (the default)

    v)      Press F5 (Key)

    vi)     Backspace and type to read:

          Key cellref: A3
          *(could be any cell in column A)*

    vii)    Press F6 (Go)

    viii)   Sort occurs and results look like this:

|     | A | B | C | D |
|-----|-----------------|------------------|----------------|----------|
| 001 | Name | Addition | Percent | Cost |
| 002 |  | Order | by wt. | per lb |
| 003 | Mineral Oil | 4 | 8 | .81 |
| 004 | Propylene Glycol | 3 | 2 | .67 |
| 005 | SL Sulfate | 2 | 10 | .84 |
| 006 | Stearic Acid | 5 | 4 | 1.15 |
| 007 | TE Amine | 6 | 1 | 1.84 |
| 008 | Water | 1 | 75 | .01 |

**b.** **In ascending order by addition order.**

    i)    Press F7 (Sel). Press F1 (Edit)
           Backspace and type range to read:

                Range A3:D8
                *(you don't want to sort the headings)*

           Press ENTER.

    ii)      Press F7 (Sort)

    iii)     Leave F1 (Row) in reverse (the default)

    iv)     Leave F3 (Asc) in reverse (the default)

    v)      Press F5 (Key)

    vi)     Backspace and type to read:

                Key cellref: B3
                *(could be any cell in column B)*

    vii)    Press F6 (Go)

    viii)   Sort occurs and results look like this:

| | A | B | C | D |
|---|---|---|---|---|
| 001 | Name | Addition | Percent | Cost |
| 002 | | Order | by wt. | per lb |
| 003 | Water | 1 | 75 | .01 |
| 004 | SL Sulfate | 2 | 10 | .84 |
| 005 | Propylene Glycol | 3 | 2 | .67 |
| 006 | Mineral Oil | 4 | 8 | .81 |
| 007 | Stearic Acid | 5 | 4 | 1.15 |
| 008 | TE Amine | 6 | 1 | 1.84 |

c. **In descending order by cost per pound.**

   i)   Press F7 (Sel). Press F1 (Edit)
       Backspace and type range to read:

         Range A3:D8
         *(you don't want to sort the headings)*

       Press ENTER.

   ii)     Press F7 (Sort)

   iii)    Leave F1 (Row) in reverse (the default)

   iv)    Press F4 (Desc). Desc shows in reverse.

   v)     Press F5 (Key)

   vi)    Backspace and type to read:

         Key cellref: D3
         *(could be any cell in column D)*

   vii)   Press F6 (Go)

   viii)  Sort occurs and results look like this:

| | A | B | C | D |
|-----|-----------------|------------------|-----------|---------|
| | | | | |
| 001 | Name | Addition | Percent | Cost |
| 002 | | Order | by wt. | per lb |
| 003 | TE Amine | 6 | 1 | 1.84 |
| 004 | Stearic Acid | 5 | 4 | 1.15 |
| 005 | SL Sulfate | 2 | 10 | .84 |
| 006 | Mineral Oil | 4 | 8 | .81 |
| 007 | Propylene Glycol | 3 | 2 | .67 |
| 008 | Water | 1 | 75 | .01 |

**d.   In ascending order by heading.**

   i)   Press F7 (Sel). Press F1 (Edit)
        Backspace and type range to read:

           Range A1:D8
           *(you want to sort the headings this time)*

        Press ENTER.

   ii)      Press F7 (Sort)

   iii)     Press F2 (Col). It shows in reverse.

   iv)      Press F3 (Asc). It shows in reverse.

   v)       Press F5 (Key)

   vi)      Backspace and type to read:

            Key cellref: A1
            *(could be any cell in row 1)*

   vii)     Press F6 (Go)

   viii)    Sort occurs and results look like this:

```
      A                  B          C          D
001   Addition           Cost       Name       Percent
002   Order              per lb                 by wt.
003                  6        1.84  TE Amine        1
004                  5        1.15  Stearic A       4
005                  2         .84  SL Sulfat      10
006                  4         .81  Mineral O       8
007                  3         .67  Propylene       2
008                  1         .01  Water          75
```