CONGRADULATIONS ON YOUR PURCHASE OF SUPER-CARD PLUS!!

We at Utilities Unlimited are very pleased with our **SUPER-CARD**. But, as the protection schemes change we do too. So now with **SUPER-CARD PLUS**, you can keep up with the protection race. Improved hardware and easier to use software, makes the SUPER-CARD PLUS the MOST powerful archival system ever created.

TO LOAD **SUPER-CARD PLUS** SOFTWARE:

Type LOAD":*",8,1   <Press RETURN>

The program will auto-load and a menu will appear. Those of you with eariler versions of the **SUPER-CARD** software will notice a change of the main menu.

The **GCR NIBBLER** is capable of copying most software without any changes. With some changes, you will be able to copy any program.

The **FAST NIBBLER** is a good nibbler that will copy light to medium protected disks, as well as data disks.

If you install and INDEX HOLE SENSOR in your 1540/1541 or 1541C (the sensor is built into ALL 1571's), you can EASILY backup anything. Use the **IHS NIBBLER**. Since the sensor is being used, no intellegent alogrithms are required. The bottom line is quick, easy, and reliable copies.

The **TRACK CLONER** is a program designed to figure out exactly what the protection is and copies it. TRACK TO TRACK SYNCRONIZATION is the one of the many advantages of this program.

To copy disks that are NOT protected, use the **DATA COPIER**. This program will copy a disk that has errors and convert them into normal data.

If you have a parallel cable installed in the SAME drive as **SUPER-CARD PLUS**, you can take advantage of the high speed data transfer that a parallel system offers. Select the **PARALLEL COPIER** only if you have a cable installed in the SAME drive.

Due to the erratic behavior on some disk drives, we have included a program to copy the RAPID-LOCK protection. After selecting the **RAPID-LOCK COPIER** option, follow the on-screen instructions.   *** NOTE *** Drive speed may have to be reset to 300 RPMS. Please see SOFTWARE ADJUSTMENT SHEET for information on how to copy the NEW RAPID-LOCK protection.

Some programs can not be duplicated because of hardware
limitations. Select the **PARAMETERS** menu. Follow the
instructions for the specific program that you are backing
up.

The **DISK SCANNER** is a handy tool for determining what copier
to use when copying a disk. Also, a comparison can be made
bewteen the copy and the original.

If you have two **SUPER-CARD PLUS** boards then you will need to
have one as drive #8 and one as drive #9. The **CHANGE DEVICE**
program allows you to software change your drives from
device #8 to device #9. If your drives are hardware
selected, then this step is not necessary. NOTE: It is
important to copy the disk on the drive you intend to use it
on. If you load all of your programs from drive #8, then
make a copy from drive #9 to drive #8 with the SOURCE disk in
drive #9, and the destination in drive #8.

After installing the **SUPER-CARD PLUS** board (and periodically
throughout its use) use the **SPEED CHECK** program. You will
need to check and set the drive speed so that it is as close
to 298.0 as possible. If the drive speed varies +/- .20 it
should function properly. DO NOT let the drive speed fall
below 297.5! If your drive speed varies more than +/- .20,
then you will NOT be able to backup ANY disk that has TRACK
TO TRACK SYCRONIZATION.

Before copying a program onto a blank disk, you should format
the disk. Use the **FAST FORMAT** program to make sure that the
disk is good quality and can be written to properly.

GCR NIBBLER

The new **GCR NIBBLER** is much better than any previous versions
in that the ease of use has been concentrated on. VERY FEW
alterations of the DENISTY LEVELS are necessary.

R)E-BOOT DISK   O)PTIONS
C)OPY   Q)UIT

Press 'R' to boot the disk that is currently in the drive.
If you wish to RE-BOOT the **SUPER-CARD PLUS** disk, it must be
in the drive when this option is selected.

When you press 'O', the screen colors will change to light
blue and you will now see the options menu.

To change the **FORMAT MODE**, press 'F' and at the prompt type
one of the 9 values and press RETURN.

ADJUSTMENT SYNCS is the number of syncs to start the track
with. The programs that this is necessary for are the POCKET
SERIES, such as POCKET WRITER, POCKET FILER, POCKET PLANNER,
and the new RAPID-LOCK.

NUMBER OF COPIES is just that....How many copies of a disk
you would like to make. **SUPER-CARD PLUS** will read the disk
once, and write the data as many times as specified in the
number of copies.

NOTE To exit the OPTIONS MENU, press the **RUN/STOP** key.

HOW TO COPY PROTECTED SOFTWARE

First of all, look at the SOFTWARE ADJUSTMENT SHEET and
see if the title you are trying to copy is listed. If it is,
follow the directions for it. If not, then copy the disk
with the default settings. If that does not work then use
the **DISK SCANNER** to compare the copy to the original. If
they match then chances are that the DENSITY LEVELS need to
be adjusted. Try increasing or decreasing each DENSITY LEVEL
by 05 bytes (hexadecimal). Remember, hexadecimal is base 16
counting which means numbers are counted like this:
0123456789 abcdef 10 11 12 13 14 15 16 17 18 19 1a 1b
1c....., ect.

You can also use the NON CBM (AUTO-GAP) on tracks that are
listed as NON-CBM with the **DISK SCANNER**. This generally will
work for all NON-CBM tracks. If not, try NON-CBM (COMPRESS).

HOW THE SOFTWARE WORKS

When using any of the CBM modes the software looks for the
the first sector of the track (sector 0). If the sector is
found, then the track is spooled into the **SUPER-CARD PLUS**
board. If the sector is not found, then the program defaults
to NON-CBM. In the NON-CBM mode, the software looks for a
series of bytes. The number of bytes is determined by the
TRACK GAP LENGTH. When the software finds the SAME byte "x"
number of times in a row, then it waits until there is no
more of the SAME bytes in a row. From that point, the track
is spooled into the **SUPER-CARD PLUS** board. If 'x' number of
bytes are not found, the TRACK GAP LENGTH is reduced by one
and the process is tried again. If the 'x' is equal to zero,
then the track is read anyway. This process keeps the **SUPER-**
CARD PLUS from looking up

```
S-TART TRACK:            01
E-ND TRACK:              38
G-AP FILLER BYTE:        FF
T-RACK GAP LENGTH:       12
F-ORMAT MODE:            04    (CBM-COMPRESS)
A-DJUSTMENT SYNCS:       00
N-UMBER OF COPIES:       01
1 DENSITY LEVEL 1:       1E38
2 DENSITY LEVEL 2:       1C08
3 DENSITY LEVEL 3:       1A18
4 DENSITY LEVEL 4:       1848
```

(NOTE: The above settings are the DEFAULT settings)

To change an option on the menu, select the highlighted
letter. For example, if you wanted to change the NUMBER OF
COPIES to three, you would press 'N' and at the prompt type
03 <Press RETURN>. You press 'N' because it is the
highlighted letter in the word NUMBER. To change one of the
four DENSITY LEVELS: If you wanted change DENSITY LEVEL 2 to
1BA0, press '2' and at the prompt type 1BA0 and press RETURN.

STARTING TRACK is the number to start the copy process.

ENDING TRACK is the last track number to copy.

GAP FILLER BYTE is the value of the byte to be written to the
disk in the 'track gap area'.

TRACK GAP LENGTH is the number of bytes in a row to look for
in the gap area. This data is used to determine the start of
the track in NON-CBM mode.

FORMAT MODE is how the disk is to be copied.

```
00 - NON-CBM (FIXED)
01 - NON-CBM (COMPRESS)
02 - NON-CBM (AUTO-GAP)
03 - CBM (FIXED)
04 - CBM (COMPRESS)
05 - CBM (AUTO-GAP)
06 - SPECIAL (FIXED)
07 - SPECIAL (COMPRESS)
08 - SPECIAL (AUTO-GAP)
```

The default setting is 04 (CBM-COMPRESS). This will copy

When using the **SPECIAL** mode, the software looks for the header that is typed in the OPTIONS MENU. If that header is found, then the data is spooled into the **SUPER-CARD PLUS** board. If the header is not found, then the program defaults to the CBM mode.

The three track length determiners are **FIXED, COMPRESS, AUTO-GAP.**

The **FIXED** modes makes the track length whatever the DENSITY LEVELS are set at.

The **COMPRESS** mode looks at the buffer and starts looking (backwards) for the start-of-track (data at the beginning of the buffer). If the data is found, then the location (minus $20 for drive speed variation) is marked as the end-of-track.

The **AUTO-GAP** mode looks for a series of bytes that are the SAME. The number of bytes is determined by TRACK GAP LENGTH. If the series of bytes are not found the program defaults the **COMPRESS** mode.

FAST NIBBLER

The **FAST NIBBLER** will copy programs with different densitys. The density detect can be turned on by selecting the option and typing 01 at the prompt. Type 00 to turn off the AUTO DETECT.

RAM EXPANDER SUPPORT

The **SUPER-CARD PLUS** supports the 512K, 256K, and 128K ram expanders. You must have a CBM 1700, 1764, or 1750 to take advantage of the RAM EXPANDER SUPPORT.

PARALLEL SUPPORT

If you own a cable copier from DATEL or V.G. Data Shack, you can copy disks with the parallel system. You must have **SUPER-CARD PLUS** and the parallel cable in the **same** drive.

SUPER CARD PLUS INSTALLATION

Read the ENTIRE INSTALLATION INSTRUCTIONS BEFORE you attempt to do ANYTHING. Use care, take your time, pay CLOSE attention, and if you have ANY questions, CALL US FOR HELP IF YOU NEED IT! It is not hard to install if you are just CAREFUL. Also, EVERY SUPER CARD PLUS is pre-tested BEFORE it's shipped, so we KNOW it is working when it was shipped. WE WILL NOT BE RESPONSIBLE FOR ANY DAMAGE YOU MAY DO TO YOUR DRIVE. IF YOU NEED HELP, THE TECHNICAL STAFF IS AVAILABLE ON THURSDAYS AND FRIDAYS FROM 10:00 AM TO 3:00 PM.

INTRODUCTION

Installation of your SUPER CARD PLUS will be an easy process if these instructions are followed EXACTLY. The illustrations included should help clarify the details of the installation, so PLEASE REFER TO THEM WHEN INSTRUCTED AND WHENEVER A PROBLEM ARISES. Proper operation of the SUPER CARD PLUS requires that your disk drive be at peak performance. This includes good track alignment, accurate rotational speed, and a clean, demagnetized READ/WRITE head. All of these factors are critical when copying a heavily protected diskette. The original should LOAD properly on the drive you intend to copy it with.

WARNING! IMPROPER INSTALLATION OF THE SUPER CARD PLUS COULD RESULT IN PERMANENT DAMAGE TO YOUR DISK DRIVE. PLEASE follow ALL steps carefully, and DOUBLE CHECK your work. You should also be aware that if your disk drive is STILL under warranty, the warranty WILL be voided by the installation of the SUPER CARD PLUS.

TYPES OF DRIVES

SUPER CARD PLUS is designed to fit ALL disk drives except the MSD and the 1581 disk drive. There are THREE different size circuit boards (for Commodore disk drives) that were used in the 1540/1541/1541C disk drives. The 1541-II's and the 1571's circuit boards are also different from all of the other drives.

INSTALLATION PROCEDURE

1. TURN OFF ALL POWER! Drives, computer, printer, etc.

2. DISCONNECT ALL CABLES! Connected to your disk drive.

3. TAKE IT APART! Turn the drive UPSIDE DOWN on a soft surface, such as a towel. Using a Phillips screwdriver, completely loosen ALL of screws located in the recesses of the bottom of the case.

4. WITH GREAT CARE, while holding the case together with your hands, and watching for the screws to fall out, turn the drive RIGHT SIDE UP. Lift off the top and set it and the screws aside. Remove the two screws that hold the perforated metal RFI shield (IT COVERS THE TOP OF THE PRINTED CIRCUIT BOARD) and remove it. (NOT ON ALL MODELS).

5. If you have a 1541, check your board size with a ruler, and measure the length of your circuit board. There are THREE sizes: SHORT - 7", MEDIUM -9", LONG - 12". This is VERY important, each board is labeled differently. If you are installing the SUPER CARD PLUS into a 1571 or 1541-II disk drive then proceed to the section of the instructions for these drives.