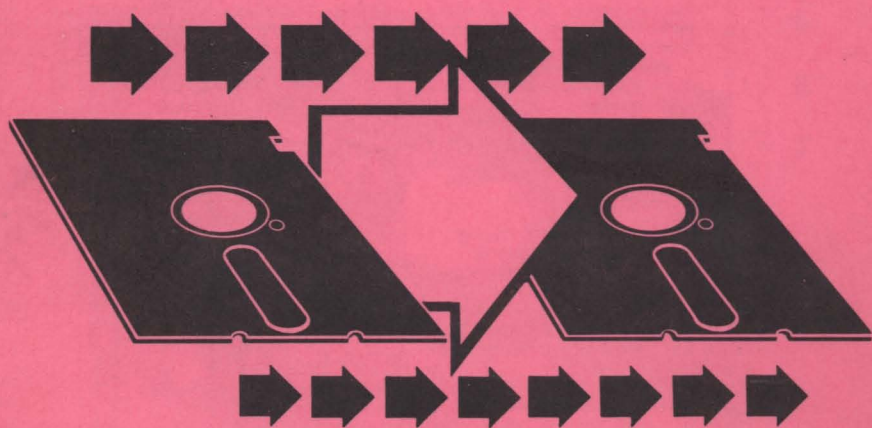




DISDUP

T.M.

DISK SECTOR COPYING PROGRAM



SOFTWARE for the
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Section 1.0 INTRODUCTION

1.1 DISDUP is a disk based machine language program that allows sector level copying of most ATARI 400/800/1200* disks. If your original diskette should become unusable for any reason, simply send it back to us for a replacement. Please include a note or letter which explains your problem. Replacements will be made free of charge during the first 60 days after the purchase. Replacements after 60 days will be subject to a \$5.00 service charge. We will usually ship a replacement within three working days after receipt of the defective unit.

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Section 2.0 **LOADING INSTRUCTIONS**

2.1 Remove any cartridge from the computer. If the computer is ON, then turn it OFF. Also turn OFF all peripheral devices such as the Interface Module.

2.2 Turn your disk drive (number 1) ON and wait for the busy light to turn off. Open the door on the disk drive and gently insert the DISDUP diskette with the label side UP. Close the door on the disk drive.

2.3 Turn the computer ON. DISDUP will automatically load and run ("boot"). You will know you have a successful load when the opening credits appear.

2.4 Remove the DISDUP diskette from the disk drive and put it away.

2.5 If the program fails to load properly, then one of the following paragraphs may help you.

2.5.1 Check for the presence of a cartridge in the computer. DISDUP is designed to "crash" if any cartridges are in the computer. Remove any cartridges.

2.5.2 Turn everything OFF and repeat the boot procedure.

2.5.3 Check your power and data cable connections. This is unlikely cause of loading problems, but it does occur occasionally. Make sure all connections are firm.

2.5.4 Run a diagnostic program on your disk drive. Some of the older drives have speed control problems. If the speed of your disk drive is less than 284 or greater than 292 RPM's, then you should have your drive serviced.

2.5.5 If all else fails, try booting DISDUP using a friend's disk drive. If you still have no success, send the diskette back to us for a replacement.

2.6 The minimum hardware required for use of DISDUP is:

- (1) ATARI 400/800/1200
- (2) At least 16K RAM
- (3) ATARI 810 Disk Drive

Section 3.0 **GENERAL INFORMATION**

3.1 DISDUP occupies a little less than 3K bytes of RAM.

3.2 No joysticks or other special controllers are required.

3.3 DISDUP allows you to copy all of the information on unprotected ATARI compatible diskettes. Copies are made on the sector level. DISDUP will *not* "copy" protected software.

3.4 A diskette is a place to store information, which may be a program or data. A disk is round and is divided into tracks, with each track divided into 18 sectors. To visualize these divisions, think of the tracks as "rings" on the disk, much like the growth

rings on a tree, and the sectors as "slices" of a pie, with each pie-slice dividing the disk from the center to the edge of the disk. This is what a diskette looks like to the computer.

3.5 DISDUP supports sector level copying of disk information. Sectors may be copied individually or in groups. A single sector, a range of sectors, a list of sectors, or all sectors may be copied.

3.6 Sectors which cannot be read from and sectors which cannot be written to are displayed on the screen and may optionally be listed on a printer.

3.7 Sectors which have been "zeroed" may be excluded from your copy to speed processing.

3.8 Copies may be made with or without a read verify.

3.9 DISDUP is an *information* copier intended for use by intermediate to advanced users. Although neophyte computerists can use DISDUP for their everyday copying needs, full exercise of DISDUP's capabilities will require some expertise on the part of the user.

Section 4.0 **DETAILED OPERATING INSTRUCTIONS**

If you are a beginner or novice at computer programming, skip to Section 7.0 which is a simplified summary of these operating instructions which will suffice for simple copying. However, to obtain working copies of most programs will require some advanced programming knowledge. The following detailed operating instructions will be of some use in those cases. DISDUP is a very useful tool, but we assume that you will have the knowledge and wisdom for properly using it.

4.1 Upon booting the DISDUP diskette, opening credits will appear, the computer will "beep" twice, and a message will appear which says "*** TURN ON PRINTER NOW FOR HARDCOPY ***". At this point you must turn your printer on if you desire hardcopy listing of "bad" sectors. This message will appear again only if you re-initialize DISDUP by pressing the SYSTEM RESET button.

4.2 After initializing DISDUP the last message displayed on the screen is "PRESS START TO COPY, SELECT TO FORMAT". If the destination diskette is already formatted, then skip to paragraph 4.3. Pressing the SELECT button will cause the computer to display the message "DISK TO FORMAT". You should enter a number from 1 to 4 indicating which drive the diskette is in. When you have entered a number and have pressed the RETURN, the computer will display "PRESS START TO FORMAT". Pressing the BREAK key at any time will cancel the request to format. If you elect to format the disk, then press the START button instead. A diskette formatted by DISDUP is no longer compatible with DOS unless you copy a DOS formatted disk to it.

4.3 If you pressed the START button, then the computer will display "COPY FROM, TO". You should enter the appropriate drive numbers. If you only have one disk drive, then enter "1,1" and press the RETURN key.

4.3.1 DISDUP allows you to selectively copy any or all sectors on a disk. When the computer asks "SECTORS TO COPY (HIT RETURN FOR ALL)", you may specify a single sector, a range or ranges of sectors, or all sectors on a disk to be copied. The specific format is **a, b-c, d, e-f**, where **a** through **f** are sector numbers. The format is restricted to hexadecimal numbers (See Section 6.0). For example, the following is a valid input: **10, 05-0F, 1B**. The "-" sign indicates a range where the sector number. The commas separate ranges which need not be in any order. In the above example, decimal sectors 5, 6, 7, 8, 15, 16, and 27 will be the only ones copied. A specific application might require you to extract a single sector of information, modify it, and write it back to a disk. This option is useful for that purpose. After entering the sectors to be copied, you need to hit the RETURN. Note that hitting the RETURN without specifying particular sectors will automatically select all sectors on a disk for copying.

4.3.2 After you have selected the sectors to copy, the computer will display "COPY ZERO SECTORS? (Y OR N)". When DOS formats a disk, it normally fills all unused data bytes in each sector with "zero". When a program is written on a diskette, the sectors not used for program storage usually are not altered. If you respond with a "N" followed by a RETURN, then such "zero" sectors will not be written during the copying process. The net effect is an increase in speed. For most purposes it does not matter which answer you give.

4.3.3 The next request for user response is "VERIFY WRITE? (Y OR N)". A "Y" followed by a RETURN will enable the "write verify" option which causes the computer to read what is written to the new disk and compare this data to what was supposed to be written there. A "N" followed by a RETURN disables this function. The tradeoff is simple. Disabling the write verify speeds the copying process tremendously; but a copy made with a write verify is more reliable. Unless you are in a particular hurry we recommend that you respond with a "Y" to this request.

4.4 SINGLE DRIVE COPYING - The next request for user response is "INSERT SOURCE DISK" and "PRESS START TO COPY". Make sure the source disk is in the drive specified first in paragraph 4.3. When you are ready to proceed, press the START button. The computer will begin loading the source information.

4.4.1 Presently the computer will display "INSERT DESTINATION DISK" and "PRESS START TO COPY". At this point, remove your source disk, insert the disk you wish to write on (destination disk), and press the START button.

4.4.2 You may have to repeat the previous two steps one or more times, depending upon your computer's memory size and the amount of information on the source disk. However, once all data has been transferred to the destination disk, the computer will display any sectors which could not be read from or written to and give you the hex value of the ID of the last non-zero sector. If you had previously turned your printer on (see paragraph 4.1), then this same information would be dumped to your printer at this point. Upon completion of this phase, you will have copied all available data on the diskette. Whether or not the data so copied will run as copied, depends upon the nature of the data.

4.5 TWO DRIVE COPYING— Two drive copying is assumed if the user response to "COPY FROM, TO" specifies two different drive numbers. Everything is the same as single drive copying, except that the final message is:

INSERT SOURCE DISK
INSERT DESTINATION DISK
PRESS START TO COPY

and that the copying process does not require you to remove a disk from a drive until the copying is complete.

4.6 The BREAK key functions as a general purpose manual interrupt. When used, the BREAK key immediately halts whatever operation is currently being performed. Used indiscriminately, this can cause any of several "error" conditions to be flagged. The data buffer is not affected.

4.7 The SYSTEM RESET button causes any current operation to halt, zeroes the data storage buffer, and re-initializes DISDUP to read in a new diskette. If you had not previously turned your printer on, you could do so at this time. Zeroing the data storage buffer means that any files which have previously been loaded into the computer are lost (something like typing NEW while using BASIC).

4.8 DISDUP can be used to make a "recovery" backup of some protected diskette programs. For example, a commercial program that is copy protected with unformatted sectors cannot normally be saved (revived) if a sector develops errors. What you can do is make a revival backup so that you can write the program information back on the commercial disk. The revival backup will not run by itself, because the code checks for unformatted sectors; but the commercial disk will still have the proper format, so by rewriting the program data on it, you can "revive" the bad disk.

Section 5.0 ERROR MESSAGES

5.1 BAD WRITE – You will get this message if you press the BREAK key during a write operation or if some other glitch occurs. When this happens, simply press SYSTEM RESET and start again at paragraph 4.1.

5.2 FORMAT ERROR – This message generally means that the diskette you are trying to use is defective. We suggest that you try a different diskette.

Section 6.0 HEXADECIMAL NUMBERS

We will not fully explain the nature of hexadecimal numbers here. Basically, “hexadecimal” means that the counting base is 16 instead of your everyday 10. The following is a quick reference only — see a math handbook for more details.

Decimal	Hex	Decimal	Hex
1	01	17	11
2	02	18	12
3	03	19	13
4	04	20	14
5	05	21	15
6	06	22	16
7	07	23	17
8	08	24	18
9	09	25	19
10	0A	26	1A
11	0B	27	1B
12	0C	28	1C
13	0D	29	1D
14	0E	30	1E
15	0F	31	1F
16	10	32	20

Section 7.0 SIMPLIFIED OPERATING INSTRUCTIONS

How to copy to an unprotected disk:

- Step 1. Load the DISDUP program as described in Section 2.0
- Step 2. TV Display: *** TURN PRINTER ON NOW FOR HARD-COPY*** PRESS START TO COPY, SELECT TO FORMAT
User Response: Press START
- Step 3. TV Display: COPY FROM, TO?
User Response: press 1, press comma ",", press 1, press RETURN
- Step 4. TV Display: SECTORS TO COPY (PRESS RETURN FOR ALL)
User Response: press RETURN
- Step 5. TV Display: COPY ZERO SECTORS? (Y OR N)
User Response: press N, press RETURN
- Step 6. TV Display: VERIFY WRITE? (Y OR N)
User Response: press Y, press RETURN
- Step 7. TV Display: INSERT SOURCE DISK PRESS START TO COPY
User Response: place your source disk in the disk drive, close the drive door, press START
- Step 8. TV Display: INSERT DESTINATION DISK
PRESS START TO COPY
User Response: place your formatted empty disk in the disk drive (after removing the source disk), close the drive door, press START

You may have to repeat Steps 7 and 8 several times. When the TV Display goes back to "PRESS START TO COPY, SELECT TO FORMAT", then your copy will be complete.

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