

The XF Single Drive Upgrade

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by

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The XF551 Single Drive Upgrade

Congratulations on the purchase of the *CSS XF551 Dual Drive Upgrade!* We have striven to make this upgrade fully compatible with all Atari software, yet making it run as fast as possible.

The operating system for the drive has been completely re-written, so as to not only eliminate the problems and incompatibilities associated with the drive, but use its open design to run 3.5" disk drives as well. The new operating system runs more commercial software, changes density properly, supports true Ultra Speed data transfer (actually, slightly faster than the 1050 Ultra Speed), and has an optimized interleave in high speed formats to produce the fastest possible operation.

The *XF Single Drive Upgrade* allows the user to install a 3.5" disk drive in the XF551, while still being able to run the original 5.25" drive. It will also automatically detect what size drive you are using.

The other feature of this upgrade is the IBM/ST Transfer Utility. This program reads 360kB 5.25" and 720kB 3.5" disks formatted on Atari ST and IBM computers. This is useful in transporting text files, GIF picture files, and any other data you might have need of reading.

Bear in mind this does NOT mean you can run ST or PC programs on your 8-bit! It does mean that you can transfer text and data files. You could, for example, download 8-bit files on your PC or ST, then use this utility to transfer them to the 8-bit to run them. You can also take a document file written on a PC or ST and saved in ASCII form, and use this program to transfer it to the 8-bit and import it into an 8-bit word processor.

Although the drive mechanism that comes with your *XF Single Drive Upgrade* may actually be a 1.44MB drive instead of a 720kB drive, the upgrade is not capable of 1.44MB operation because of the XF551's circuitry. High density (1.2MB and 1.44MB) **disks** should not be used with the *XF Single Drive Upgrade* because high density disks written in low density may not retain data over time.

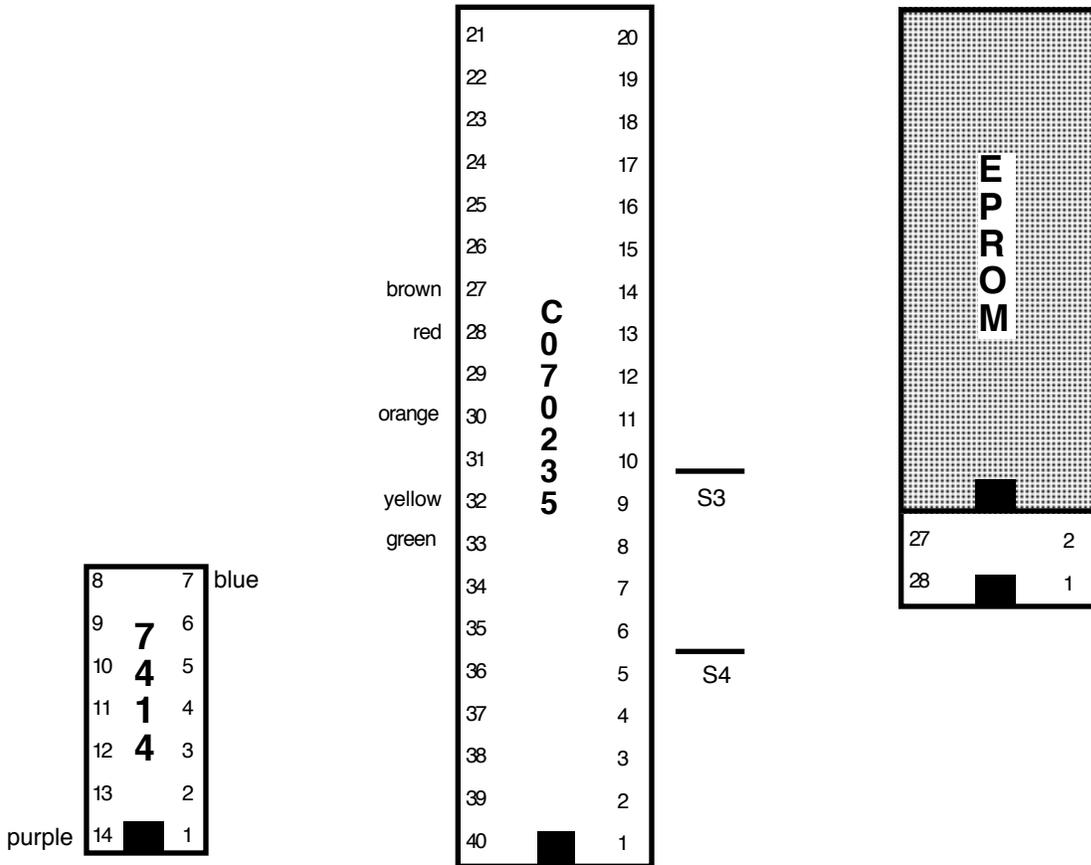
MYDOS is included with the upgrade to get you up and going. This is one of the few DOSes that support double-sided drives. Documentation is provided on the disk. Brief instructions for usage are included at the end of this document. Read through the installation section before attempting installation. Remember, we provide **free** installation of our products. The only charge is the shipping, so it may be worth your while to pursue this option. Please call before sending anything in!

Computer Software Services is committed to providing high quality hardware and software for the Atari 8-bits. If you have any questions, feel free to contact us.

Installation

While installation is simple for a person familiar with circuit board soldering, please keep in mind that CSS will install any of its products (when purchased from us) at NO CHARGE. CSS is not responsible for damage done to the drive or the conversion when installed by the customer.

1. Remove 4 screws on the bottom of the XF551. Remove top half of case and set it aside. Remove the 4 bottom (not side) securing screws that hold the 5.25" mechanism to the bottom of the case.
2. Disconnect the power connector and the 34-pin card edge connector from the rear of the 5.25" drive mechanism.
3. Lift the 5.25" drive mechanism off of its 4 plastic posts.
4. Note the two larger chips, the 28-pin 1772 (or 1770) and the 40-pin C070235 (8040 or 8050). Notice the pin numbers printed on the circuit board. These numbers (in increments of 5) show exact pin number locations. If your XF551 has a 1770 chip (and only a small percentage do), you will not be able to use the **IBM/ST Disk Reader** program. We can provide you with a 1772 chip if you need to use this feature. Call us for details.
5. Remove the 28-pin OS chip from the XF551 circuit board. If this chip is not socketed (only a small percentage of drives do not have a socket), this chip will need to be desoldered and replaced with a socket. Unless you have experience in desoldering ICs, we suggest you leave this to someone who is experienced. Carefully insert our EPROM. Make certain that the end of the EPROM with the notch in it faces towards the FRONT of the drive and that all pins are in the socket properly. **Note:** If you have been supplied with a 24-pin EPROM, align the **bottom** pins to the bottom pins of the socket. This will leave pins 1, 2, 27, and 28 of the socket empty. See the diagram on the next page.
6. On the 40 pin chip, begin by placing a small drop of solder on pins 27, 28, 30, 32, and 33. Find the chip labeled 74LS14 on the XF551 circuit board, and put a drop of solder on pins 7 and 14.
7. Solder the BROWN wire from the black brain module to pin 27 of the 40 pin chip, the RED wire to pin 28, ORANGE to pin 30, YELLOW to pin 32, GREEN to pin 33. On the 74LS14, solder the BLUE wire to pin 7 and the PURPLE wire to pin 14.
8. Look to the right of the 40 pin chip for the label "S3" printed on the circuit board. If there is a jumper just above it, proceed to Step 10 now. If there is a jumper located just above the label "S4", you will need to cut this jumper in half with a small wire cutters and run a jumper wire from pin 7 of the 40-pin chip to pin 40.



9. Insert our cable connector having the 30 pin jumper board (with the two black wires attached) into the 34 pin card edge connector coming from the XF551 circuit board. Notice that we only use 30 pins (not 34). The first four pins nearest the cable's red stripe will be empty. Make sure the stripes on both cables are aligned with each other.
10. Plug the 34 pin header connector into the connector on the 3.5" floppy drive. If you look at the small white power connector at the back of the drive, one wire will be either yellow or blue. If the wire is on the left, then pin 1 of the header connector will be on the left. Similarly, if the yellow wire is on the right of the connector, pin 1 will be on the right side of the connector. Plug in the cable so that the red stripe lines up with pin 1 of the header connector.
11. Test the drive. If the busy light on the drive comes on as soon as you turn on the drive power and stays on, reverse the 34-pin cable.
12. If the drive is working fine, remove the side rails from the 5.25" mech and install them onto the 3.5" mech's frame. Reassemble the drive.

Usage Notes

To configure the included MYDOS for double-sided double density operation, boot DOS without BASIC. You should now see the main menu. Type [O], and the drive number of your desired drive. Answer [N] to "Remove Drive?", type [Y] to "Is drive configurable?", type [N] to "High capacity drive?", and type [Y] to "Is drive double sided?". It will now prompt you for the number of tracks. Enter [40] and [RETURN] for a 5.25" drive, or [80] and [RETURN] for a 3.5" drive. Type [0] at "Step Rate?".

DOS now knows that kind of drive is out there, but one more step is needed prior to a format. Type [P] at the main menu to set drive density. Now enter the drive number, followed by ",D" and [RETURN]. Example: [P] [1,D] [RETURN]. The drive is now set for double sided double density operation. Format a disk by typing [I], then drive number followed by [RETURN], and [Y]. Write DOS files to it by using the [H] command. This will save the configuration you just did, so that you won't have to do it again.

Operation with SpartaDOS is a little more simple, as fixed configurations are built-in to the XINIT disk formatter program. No patching is needed for use with SpartaDOS, as the Ultra Speed mode will automatically kick in, and be used at all times.

ST/IBM Transfer Utility

The **IBM/ST Transfer Utility** allows your upgraded XF551 drive to read the 512 byte sectors used in the disk formats of the IBM PC and compatibles, and the Atari ST computers. It will automatically adapt to either single sided or double sided formats, and supports the increased sector density of the 'twister' ST disk formats. It will not however read past 80 tracks on a 3.5" drive. The XF551 cannot write to these disks because of insufficient internal memory.

Simply load the file IBMREAD.COM from the Transfer Utility disk as a binary file. The menu will be displayed. After each function, the program will give you the 'Command: ' prompt, without displaying the menu. Simply press [?] for the menu.

To do a directory of an Atari-formatted disk, press the drive number, then [RETURN] for a directory of the main directory. If you wish to view a subdirectory, type in the directory name (terminated with a '>') before pressing RETURN. All files (*.*) are assumed by default, but if you want a directory of only files ending in .ARC for example, type "*.ARC" before pressing RETURN.

To view the directory of an ST or IBM disk, hold [SHIFT] while pressing the drive number. The same rules for subdirectories and masks apply here as with Atari directories. Remember that the IBM directory gives the file sizes in bytes, not sectors. To convert bytes into sectors, divide by 125 for single density, and divide by 253 for double.

Before converting any files, make sure you have a destination disk with enough free space. Its a good idea to format a disk in double density, so that you have the most space available. Use the [ESC] key to exit to DOS for formatting disks, then reload the program.

You may convert one or all files in any given directory at a time, without having to enter each filename separately. Selecting [A] will convert all files that match the filespec you enter. Selecting [B] will prompt you for a Yes/No for all files that match the filespec.

When entering the source name, use the format Dn:[path>][mask]. For example: D2:*.*, or D1:UTIL>*.ARC. Remember the source is your IBM/ST disk.

You will now be prompted for the destination drive number/path. If you wish to simply write to the main directory on a drive, type that drive number and [RETURN]. You may use the same drive for source and destination disks - the program will prompt you automatically for disk changes. If you wish to place the converted file(s) in a subdirectory, enter the pathname. Some examples: 2, or D3:JUNK>. You may also view files by using E:, or print them by using P:.

IBM and ST text files differ from Atari 8-bit files in the characters used for tabs and returns. If you are reading a text file and wish to convert it to ATASCII (ATari ASCII) format, Use the [C] command instead of the [A] command to convert. If you selected [B] for Convert with Query, type [C] instead of [Y] at the prompt for the desired filename. This conversion should be used only for text files, NOT for compressed or executable files.

The rest of the operation is fully automatic. Any illegal characters in filenames will be converted to 'Q's, so Atari DOSes will not cause an error. You may use this program with any Atari-compatible DOS.

Miscellaneous Tidbits of Info

If you have our *Ultra Speed Plus OS* or our *Black Box*, your drives will read and write 3 to 5 times faster than normal.

If you have any problems installing the conversion, please call us and we will try to help you out. Remember that installation is FREE from CSS. For free installation, phone CSS at (716) 429-5639. Arrangements can be made at that time.

All units are checked and operated before shipping. Damage resulting from improper handling or connections may result in a repair/replacement cost to you.

Most importantly, enjoy your conversion!

Limited Warranty

Computer Software Services, Inc. will REPLACE any product which becomes inoperative through normal use for a period of 90 days from date of purchase. Computer Software Services, Inc. reserves the right to extend this warranty indefinitely should they desire. Due to piracy throughout the industry, Computer Software Services, Inc. does not issue refunds for ANY REASON. Any articles shipped to Computer Software Services, Inc. without a proper return authorization number WILL NOT BE ACCEPTED. Should you have any questions regarding this product or its operation please call between 10am - 5pm Eastern time weekdays. As always, Computer Software Services, Inc. will install any of its hardware products at no charge should you not be able to install it yourself. Please call for details, (716) 429-5639.