4. Miscellaneous 'Bits'

4.1 Software compatibility with TOS 2.06

Most ST software will work well with TOS 2.06. However most software that runs on an ST FM but will not run on an original STe with TOS 1.06 will probably not run on 2.06. At the time of writing this manual anything that uses the programming utility STOS will also not run.

Since your ST will boot as normal with your original TOS then any auto booting programs should run with your old TOS without problems.

4.2 Fitting T_BOARD without TOS

If for some reason your original TOS has been removed from your computer it is still possible to fit T_BOARD. Just connect the solder point next to R1 on the T_BOARD to pin 20 of the first socket which contained one of your original TOS ROMS.

4.3 Installing a PC Emulator

T_BOARD is designed so that a PC Emulator or other option that normally plugs on top of the 68000 can be plugged directly on to it. Before attempting to fit an option on top of the T_BOARD make sure there is physically enough space inside your ST to reassemble it successfully.

T_BOARD 64
USER MANUAL

T64/416

T_BOARD 64
USER MANUAL

Copyright

Preface

Thank you for purchasing T_BOARD 64, the TOS upgrade board for the Atari 520 ST F, ST FM, 1040 ST and Mega ST.

In the T_BOARD box you will find the T_BOARD System Disk which contains, if necessary a file named README. This file contains additional information on T_BOARD and should be read before you read this manual.

Disclaimer

Important Note

Installation of T_BOARD will make the warranty on your Atari null and void. Although T_BOARD can be fitted by anyone with good soldering skills **we strongly recommend** that you arrange for a COMPO Software Authorised Dealer to fit the T_BOARD circuit board for you. T_BOARD has been tested for use with all currently available Atari peripherals. Its compatibility with any other hardware add-ons designed for use with the Atari ST range of computers can not be guaranteed.

This manual was produced using That's Write on an Atari Mega ST with T_BOARD 64 and printed on a Deskjet 500.

T_BOARD 64 Manual Rev 1 August 1992.

Hotlines:

COMPO Software Ltd
7 Vinegar Hill
Alconbury Weston
Huntingdon
Cambs PE17 5JA
Tel: 0480 891271   Fax: 0480 890787

COMPO Software
Postbus 58
4130 EB Vianen
The Netherlands
Tel: 03473 20334   Fax: 03473 20332

COMPO Software Corp
104 Esplanade Avenue STE. 121
Pacifica
California 94044
USA
Tel: 415-355-0862   Fax: 415-355-0869

Table of contents

1.   Introduction

Thank you for buying T_BOARD 64 - the flexible solution for upgrading the TOS operating system.

In your T_BOARD 64 package you should find:

   T_BOARD 64 circuit board

   Two 64 pin IC sockets (although you will probably only need one)

   This manual

   The T_BOARD System Disk

   A T_BOARD Registration card

   Technical Helpline Information

THIS IS A VERY IMPORTANT SECTION OF THE MANUAL - PLEASE READ IT!

The installation of T_BOARD in your ATARI should only be done by someone with good soldering skills (if you have not used a soldering iron for a while we recommend you practice your technique before attempting to fit T_BOARD). Even if you do have these skills we still recommend you have your T_BOARD fitted by a COMPO Software Authorised Dealer.

2. Installation of T_BOARD

2.1 Preparation for Installation

To install T_BOARD you will need the following tools:

Philips screwdriver

Pliers

Small soldering iron which is earthed with a fine tip

A wrist strap connected to earth with a 10K series resistor

Thin Solder (60 Sn / 40 Pb)

Metal shears (some 1040 ST's only)

Glue (some 1040 ST's only)

Insulating Tape

A 220 Ohm 1/8 W resistor (some Mega ST's only)

The ATARI 1040 ST and MEGA ST computers have their power supply attached to the main system board. The power supply is potentially dangerous.

WARNING!!!!!

At no time during the installation of T_BOARD should you touch any part of the power supply either through bodily contact or with any tools you are using.

The T_BOARD circuit board is mounted with sensitive chips which can be damaged by electrostatic discharge. When installing T_BOARD always make sure you and your soldering iron have been discharged (ie touch a radiator or metal pipe). A grounded soldering iron and a wrist strap are highly recommended. To avoid electrostatic discharge do not touch any metal parts on the T_BOARD circuit board during installation.

Before commencing installation of T_BOARD please make a backup copy of your T_BOARD System Disk.

Instructions for fitting T_BOARD to various models of Atari ST computer follow. Please refer to the section applicable to your model of ST.

2.2 ST, ST F, ST FM

NOTE: Before attempting to fit T_BOARD first read through the following instructions carefully. When you come to solder the IC socket onto the 68000 first consider how, when the ST is reassembled, it will fit back together. Take particular care as to how you position the IC socket. On some revisions of the ST system board you might need to seat the IC socket well down on the processor and/or tilt it at a slight angle. If the 68000 processor is under the keyboard then the plastic cross braces of the IC socket should touch the front of the 68000 but be well up at the back.

If you are unsure in any way please call the Hotline before using your soldering iron.

1. First switch off your ST computer and remove all connecting cables including those to your monitor, printer and mouse. Disconnect the power at the mains and remove the mains plug from it's socket.

2. Turn your computer over and remove the screws from the underside which hold the case together. Take careful note of which screws come from which holes in your computer's case, the screws may be of different sizes depending on the hole.

3. Hold the case of your computer firmly together and turn it back over. Remove the top and the keyboard will now be exposed. You should see a connector from the keyboard to the right hand side of the main system board. Disconnect this connector from the system board.

4. Remove the two screws that hold a small metal shield around the back of the disk drive. Remove the shield and then remove the disk drive. Make sure you note the way around the cables are fitted - connecting them upside down later will blow up the drive!

5. Remove the screws and straighten any metal clips on the metal shield which surrounds the power supply at the

back left of the motherboard. Remove the two screws that hold the power supply to the main system board (not the two screws that hold the power supply together!). Remove the power supply, it can be a little difficult to get out - but it's easier to get back in again - it needs to be freed from the two lugs at the very back of the mother board.

6. Now remove the metal shield by straightening the metal clips and, if they are present, removing the 3 screws. If there is a strip of copper tape attached to the metal shield which prevents you from removing the shield then detach the tape from it.

7. Locate the Motorola 68000 microprocessor on the system board. It is a big 64 pin chip which measures 80 x 25mm. Place one of the 64 pin IC sockets onto the 68000 so that the pins of the IC correspond to those on the 68000. Solder the pins of the IC socket to the contacts of the 68000 starting with the four corners. As usual when soldering you should solder in short intervals so that the 68000 chip does not overheat.

8. Now carefully check all the joints by eye. *If necessary* insert the second 64 Pin IC socket onto the newly soldered one.

9. Take the T_BOARD and hold it carefully above the IC socket. It should be positioned so that it forms an upside down T shape when viewed from the front of the ST. It may be necessary to cut one of the legs that support the disk drive, don't worry - the disk drive is well supported with only three legs!

10. Initially push the T_BOARD in quite gently until you are sure that all of the pins are correctly located and none have bent. Then push the T_BOARD in firmly. When T_BOARD is pushed fully home then the pins of the board should not be visible. The plastic surround of the socket holder should touch the plastic on the underside of

the T_BOARD.

11. Reassemble your computer covering any parts of the metal shield that may come into contact with your T_BOARD with insulating tape. Remember to attach the keyboard connector to the socket on the right hand side of the main system board.

12. Turn to section 2.4 Testing T_BOARD.

2.3   Mega ST

NOTE: Before attempting to fit T_BOARD first read through the following instructions carefully.

If you are unsure in any way please call the Hotline before using your soldering iron.

1. First switch off your Mega ST computer and remove all connecting cables including those to your monitor, printer and mouse. Disconnect the power at the mains and remove the mains plug from it's socket.

2. Turn your Mega ST over and remove the 12 screws from the underside which hold the case together. Take careful note of which screws come from which holes in your computer's case, the screws may be of different sizes depending on the hole.

3. Hold the case of your Mega firmly together and turn it back over. Remove the top disconnecting the battery pack connector.

4. Now remove the metal shield by straightening the 9 metal clips. You may have to lift the floppy disk drive a little to get at one of the clips. You will have to lift the disk drive and remove the connector for battery back up in order to remove the shield.

5. Locate the Motorola 68000 microprocessor on the system board. It is a big 64 pin chip which measures 80 x 25mm. Some MEGA ST's have a small accessory circuit board containing a 74LS74 IC which is soldered on top of the 68000 CPU. If this is the case with your computer you will have to relocate this board within your computer and reconnect it using multi wire cable. When you do this connect a 220 Ohm series resistor between the wire of pin 1 on the IC and pin 12 of the 68000 CPU. Insulate the board carefully in its new location.

6. Now place the 64 pin IC sockets onto the 68000 so that the pins of the IC correspond to those on the 68000. Solder the pins of the IC socket so that every pin is connected starting with the four corners. As usual when soldering you should solder in short intervals so that the the 68000 chip does not overheat.

7. Now carefully check all the soldered joints by eye. Insert the second 64 Pin IC socket onto the newly soldered one. Take the T_BOARD and hold it carefully above the IC socket but do not attempt to fit it. It should be positioned so that the T_BOARD forms a T shape when viewed from the front of the computer.

8. Initially push the T_BOARD in quite gently until you are sure that all of the pins are correctly located and none have bent. Then push the T_BOARD in firmly.

9. Reassemble your computer covering any parts of the metal sheet that may come into contact with your T_BOARD with insulating tape. Remember to reconnect the battery pack connector. When T_BOARD is pushed fully home the pins of the board should not be visible. The plastic surround of the socket holder should touch the plastic on the underside of the T_BOARD.

10 Turn to section 2.4 Testing T_BOARD.

2.4 Testing T_BOARD

Put the backup copy of the T_BOARD System Disk in drive A. Switch on your ST. If the monitor stays blank or the disk drive motor does not spin after the normal 10 seconds switch off your ST immediately and go to section 2.5 Troubleshooting T_BOARD Installation.

You should now have your normal Atari desktop on screen. Go to the top left of the screen where it shows Desk and click on TOS Switch. Select TOS 2.06 and soft reset.

If your installation was successful you will see the Atari logo come up in the top left of the screen followed by the TOS 2.06 desktop. (Look in the Desktop Info, copyright should be 1985, 86, 87, 88, 89, 90, 91) and you should proceed to Chapter 3. Otherwise refer to section 2.5 Troubleshooting T_BOARD Installation.

2.5 Troubleshooting T_BOARD Installation

All T_BOARDs are individually factory tested. If your T_BOARD does not work, it is likely to be caused by some small error in installation. (Don't worry - this is normal for a first time installation - and why we recommend fitting by an Authorised Dealer)

If after fitting T_BOARD your ST will not start then check the following.

> There may be a short circuit either 'tin bridges' in your soldering or because the T_BOARD is not insulated properly. Check the integrity of all soldered joints with a tester. We recommend checking continuity from the underside of the motherboard to the top of the T_BOARD. Also check adjacent pins for any 'tin bridges'.

> If the disk drive will not start on an older 1040 ST it may be because the flywheel on the underside of the drive is touching the T_BOARD. Check that you glued the disk drive supports in place properly.

The ST works but T_BOARD will not start.

> Push the T_BOARD into the IC socket more firmly. This is the most common problem encountered by most people when they fit T_BOARD for the first time.

T_BOARD works but there are problems accessing the hard disk.

> The DMA cable may be causing 'ringing' on the line. Shorten your DMA cable slightly. (This is quite common with ICD cables).

> The version of the hard disk driver is not compatible with TOS 2.06. Please install the right driver. Look in the section on hard disks in your TOS 2.06 manual for further information.

If T_BOARD still won't work refer to a COMPO Software Authorised Dealer or call the Hotline.

3. Software Installation

3.1 T_BOARD Software

This section of the manual gives details of how to install the T_BOARD switching software. There are two ways to switch TOS, either using a desk accessory or a program in the auto folder.

3.2 Installing Desk Accessory switch

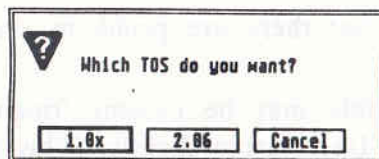To switch between TOS versions using a desk accessory follow the following instructions:

Start the computer with your normal boot disk in drive A or from your normal boot partition of your hard disk.

Copy the file T_BOARD.ACC from your backup copy of the T_BOARD System Disk to the root directory of your normal boot disk or boot partition.

Check that there are no more than six desk accessories - files with a .ACC extension - in your boot folder. Then reset your computer - the TOS Switch accessory should automatically be loaded.

3.3 Using the TOS-Switch accessory

As soon as you select the accessory you will see the following alert box:

```
┌──────────────────────────────┐
│ ❓  Which TOS do you want?     │
│                              │
│  ┌──────┐ ┌──────┐ ┌────────┐ │
│  │ 1.0x │ │ 2.06 │ │ Cancel │ │
│  └──────┘ └──────┘ └────────┘ │
└──────────────────────────────┘
```

When you select one of the TOS options. you will get an alert box with the question what kind of reset you want. If you select a warm reset the computer will boot immediately, and reset proof RAM disks will still be available in memory. If you selected a cold boot, the computer will test its memory and initialise before booting to the Desktop.

3.4 Installing an AUTO folder switch

To make TOS switch using an AUTO folder program follow these instructions:-

Start the computer with your normal boot disk in drive A or from your normal boot partition of your hard disk.

If you have an AUTO folder, either on your boot disk or on the boot partition of your hard disk first take a backup copy of all the files in it and delete the folder.

Create a new folder called AUTO and copy the file T_BOARD.PRG from your T_BOARD System Disk back up to your new AUTO folder.

Copy any files previously in your old AUTO folder to your new AUTO folder.

PLEASE NOTE: When you have placed the program into the AUTO folder and switch on your computer, you will see that the computer resets itself. This is perfectly normal, the computer switches to TOS 2.06 (you can check this by checking if the Atari logo appears in the upper left corner on screen).

The computer will now boot each time with TOS 2.06 automatically. If you want to have access to your 'old' TOS, keep the left SHIFT key pressed while booting the computer, after the disk drive light has gone on and off 1 time. Keep it pressed until the Desktop appears!