



BOOST YOUR ST

Two methods for speeding up your ST. One involves a solder sucker, blitter chip and chainsaw. The other boots from disk. Richard Monteiro, with stop watch in hand, puts both to the test.

CAUTION!

If you manage to get hold of a blitter chip, you fit it at your own risk. As soon as you open up your ST your guarantee is invalidated. We've successfully blitterised our office Mega ST, but we won't be responsible for your mistakes!

Be wary of static electricity - it can cause many of your ST's chips to blow, consequently costing you hundreds. Carry out the work near water pipes or some other object that you're sure is grounded. Before you start backing away at your machine touch the pipes. This will remove any static electricity that happens to be attached to you. Take care when handling the blitter; try not to touch any of the pins.

ST BLITTER CHIP

Anybody who has bought a Mega ST knows that they are supposed to have a blitter chip inside to boost their graphics; however, because of initial shortages Atari did not install them. Now that supplies are (just about) flowing, you can fit your own blitter and turbocharge your ST.

Your local dealer could probably fit the silicon slice... for a fee. If you've got a Mega ST2 or Mega ST4 then it's probably worth doing the operation yourself. After all, it only involves placing the blitter in a socket and removing two dabs of solder.

Carefully follow the captions to pictures 1 to 4, which show you the installation process. You will need a pair of pliers, a soldering iron, a screwdriver and a solder-sucker. If you haven't got one of these, try your local electrical repair shop - they may lend you one. Alternatively take your ST down to the repair shop with this article - it's a two minute affair so it won't cost much, if anything.

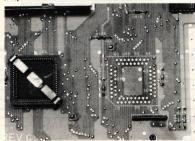
Once everything's back together and working, a new item, 'Blitter', in the 'Options' menu tells you that the blitter is functioning correctly. You can click on this item to switch the blitter on or off; a tick to the side of the option tells you that the chip is operative. Some programs won't work with the blitter - that's why the on/off function is present.

GEM automatically makes use of

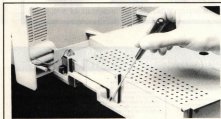
FITTING BLITTERS IN 520S AND 1040S

Early 520s and 1040s can't easily accept a blitter chip - there's no blitter socket and the firmware wouldn't recognise the chip anyway. The problem is less severe with later ST models. You can tell if your ST contains one of the newer versions as the years '1986/87' will appear in the Desktop info box (accessible from the Desk menu).

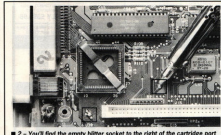
Unfortunately even new 520s and 1040s don't have a blitter socket - there's room on the motherboard for a socket though. The socket costs £4 and is available from most component suppliers. Don't, however, expect any information on fitting the socket: it's easy enough if you're experienced with a soldering iron and have nerves of steel; otherwise it's definitely a job for your local computer repairman.



Take this to your dealer. There are 68 holes to desolder before you can fit the blitter socket. And a further two (W3 and W4) after. But first you've got the protective shielding to contend with.



1 - Disconnect your Mega from the mains and unplug the keyboard and any other items attached. Remove all the screws securing the two halves of the case, and gently remove the top half. A wire between the motherboard-shielding and top half of the case will prevent you from separating the two pieces immediately. Towards the left at the back of the micro you will find the wire attachment. Prise the connector apart. With a pair of pliers, straighten all the clips that hold the shielding to the motherboard. Remove the shielding to expose the circuit board - Bang goes your guarantee.



2 - You'll find the empty blitter socket to the right of the cartridge port and above the 68000 processor. Look for two relatively large solder blobs. One can be found above a resistor pack (RP1) while the other is left of the internal hard disk socket. Hope you've brought a solder sucker with you.



BLITTER VERSUS TURBO ST

The blitter chip and the Turbo ST program do different jobs. The blitter is designed to move blocks of data, preferably large blocks, at high speed. It does this very well. Turbo ST also moves blocks - but only character-sized blocks. The blitter is more versatile as it speeds up block-movement of any size, vertical and horizontal line drawing, and other GEM block-graphic functions. Turbo ST speeds up screen printing and rectangle fills.

With a blitter installed you will notice that window -redrawing is faster (look closely). Turbo ST speeds up window updating (the speed at which text or icons fill the window).

We carried out some simple timing tests with the standard system, blitter-boosted system and Turbo ST-enhanced system. The tests measure the system under the best possible conditions; hence these are the greatest speed increases you're likely to get. In practice the gain will be less. Character printing to the screen with blitter installed results in a speed increase of 20% on the standard system. Turbo ST beefs up character printing by 31%.

Line drawing is faster by 22% when the blitter is onboard. Turbo ST does nothing to improve performance. Box drawing is increased by 82% with the blitter (for very large boxes, that is). Again Turbo ST does nothing.

Software performance is marginally improved by both blitter and Turbo ST. ST BASIC is perhaps most noticeably improved when Turbo ST is installed - it almost makes ST BASIC useable. Most packages that manipulate text benefit from Turbo ST. Word Writer, GFA BASIC, Final Word, Data Manager. While all software that uses GEM will benefit marginally from the blitter, there is next to nothing that really shows off the true power of this chip - Cyber Studio is one exception.

TURBO ST

£39.95 ST only ■ £39.95

■ Softek/HiSoft, The Old School, Greenfield, Bedford, MK45 5DE (0525 718181)

The blitter chip is very good at moving large amounts of data around the screen quickly, but when it comes to shifting character-size blocks, it's hopeless. The reason is that the blitter takes a long time to set up; numerous parameters must be sent to the chip telling it what it has to move and what operation it must perform on the data it moves. This procedure is slow and must be carried out for every single operation.

As the ST has no text mode (characters are displayed on screen in graphics mode), any operation that involves placing characters on screen will use the blitter if it's there. Usually characters are held in an 8x8 matrix - not very large which means the blitter's powers are poorly used.

Turbo ST has been designed to speed up most ST programs that write text to your screen - word processors, spreadsheets, DTP packages, certain features of the Desktop and so on.

The software that does the speeding up is an Accessory, so all you need do is place the program in the root directory of your boot disk. Resetting the computer causes the accessory to load automatically. From the Desk menu you can click on the Turbo ST option which causes a dialog box to appear. Options let you install or remove Turbo ST. That's all there is to it.

Does it work? Yes. But it's unlikely you'll notice the difference - not unless you switch Turbo on and off regularly and watch closely, that is. Most programs that manipulate text will benefit from being turbocharged (see the box for more details). Commercial games won't; neither will graphic-intensive packages.

TURBO ST

for

- Very simple set up procedure
- Faster than the blitter for certain operations
- Works with the majority of GEM-based programs

against

- Won't increase printing of GDO5 fonts
- Only speeds up text and rectangle fill routines

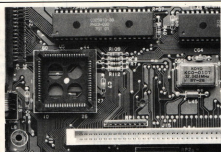
BUYING THE BLITTER

Not an easy one this as there's a serious shortage of the chips. Atari have a stock, but these are being sent to dealers and customers who have requested the sparecase of silicon months ago. It's unlikely that the situation will improve until early next year. Your local dealer might be able to supply you with a chip under the counter... but at what cost? Around £22.

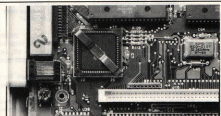
With Megs, blitters are usually included in the price and your dealer should be able to get and fit one for you. Certainly Silica Shop, the main Atari dealer, offer a free upgrade service for all Megs bought from them.

the blitter, so window operators will be much faster. All software that uses GEM's block graphic calls will reap

the blitter's benefits. Games software will not usually, unless the routines access the blitter directly.



■ 3 - Remove the solder blobs with a solder sucker. Try not to suck half the circuit board at the same time. Remove the metal bar lying across the blitter socket. Use a blunt instrument.



■ 4 - Now fit the chip. The blitter socket has a tiny hole bored into one of its edges; the blitter has a similar-sized indentation along one of its sides. This indicates which way the chip fits into the socket. Put the bar back when you've fitted the blitter. And now put the rest of the ST back together. Pray that the blitter functions correctly.



features

0 1 2 3 4 5

performance

0 1 2 3 4 5

ease of use

0 1 2 3 4 5

manuals

0 1 2 3 4 5

format value

0 1 2 3 4 5