

ThunderStorm

Jumper settings and some useful hints



**Important: all installations only
when the computer is switched off!**

A) Thunder IDE Interface:

- JP1 = IDE Interface: on = Thunder enabled, off = Thunder disabled
- JP2 = regular or twisted IDE cable: on = twisted (Hardware Byteswap enabled), off = regular (untwisted IDE Cable)
- JP3 = Smartswap on = SmartSwap enabled, off = Smartswap disabled
- JP4 = Speedmode on = Slow Mode, off = Highspeed Mode
- JP5 = Diagnose on = Diagnose enabled, off = Normal
- JP6 = not in use, for further features – be strained

Standard setting (marked bold) is: JP1 on, all other JP off.

For more hints an installation take a look here (english text version is coming soon):

http://wiki.newtosworld.de/index.php?title=Thunder_IDE_Interface

Please do NOT put jumpers across other Pins. The 2 Pins (5V and Ground) on the left upper corner and the 6-Pin Con4 is for flashing. Con3 contains the two signals, which have to be soldered with the enclosed cable at the described places on the mainboard.

The Thunder does NOT require an extra power supply!

Do not forget to install a harddisk driver (e.g. HDDriver version 10.x or higher) and enable the Thunder IDE interface.

B) Storm Fast RAM Card:

Apart from the jumper settings the Storm is plug and play.
The Storm does NOT require an extra power supply!

As with the Magnum TT, FastPage or EDO RAM modules (72 pin, PS / 2) in the sizes 16MB, 32MB, 64MB and 128MB can be used, also in combination. If a combination of different RAM modules is used, the larger module must be plugged into slot A. It is also possible to operate with only one RAM module, which must then be inserted into slot A (in this case J6 is of no importance). Recommended, but not a must, is the use of two identical modules.

Please note, the Storm has 3 different operating modes (on/without burst), FPM (Fast Page Mode) burst (15MB/s) and EDO (Extended Data Output) burst (more than 17MB/s) to ensure the best possible compatibility. These are set as follows:

- J1 sets the normal mode without burst and turns Storm on or off (J1 on, J2 off, J3 off) – green jumper
- J2 sets the FPM (Fast Page) Burst mode (J1 on, J2 on, J3 off) – blue jumper (=Standard setting)
- J3 sets the EDO (Extended Data Output) burst mode (J1 on, J2 on, J3 on) – red jumper with handle

The Storm is pre-set for using 2 x 16 MB with Fast Page Burst (red J3 is off).

With this setting, the Storm should not show any errors when testing the RAM after switching on the computer (bad = XXX, good = ----). Since this test is only very basic, we recommend to use the RAM test program YAARTTT for an intensive test of the TT-RAM after installation. For more information about YAARTTT see: <http://forum.atari-home.de/index.php?topic=13002.60>.

Please note that it may be exceptional that not all RAM modules might work. Then it is not on the Storm, but on your modules, which are simply too slow or have an abnormal refresh cycle! Then please contact me.

Of course the EDO Burst only works with real EDO memory modules.

The recommended setting is the FPM burst (J1 and J2 on, J3 off). If this is working properly, you can try to activate the EDO burst in the next step by setting J3 to on. This results in a significant speed boost at the transfer rate of an IDE device at up to 6MB / s transmission rate. So the TT gets wings!

Here are the settings for the RAM size. These are set with jumper J4, J5 and J6. The following applies:

J4 off = SIMM A has 64MB per bank (= 64MB or 128MB in total for SIMM A)
on = SIMM A has 16MB per bank (= 16MB or 32MB in total for SIMM A)

J5 off = SIMM A has two banks (= 32MB or 128MB in total for SIMM A)
on = SIMM A has only one bank (= 16MB or 64MB in total for SIMM A)
If no SIMM B is present, J5 does not matter.

J6 off = SIMM B has 64MB per bank (= 64MB or 128MB in total for SIMM B)
on = SIMM B has 16MB per bank (= 16MB or 32MB in total for SIMM B)
If no SIMM B is present, J6 does not matter.

16MB and 64 MB modules have only one memory bank, usually they have ICs only on one side of the PCB.

32MB and 128 MB modules have two memory banks, usually there are ICs assembled on both sides of the PCB.

4MB and 8MB modules are not supported (Who wants to have such small Fast Ram?!), same as Magnum TT.

The most common jumper settings for 2 same modules are (black jumpers with handle):

2 x 16 MB: J4 on, J5 on, J6 on (=Standard setting)
2 x 32 MB: J4 on, J5 off, J6 on
2 x 64 MB: J4 off, J5 on, J6 off
2 x 128 MB: J4 off, J5 off, J6 off

2 Different modules combination (black jumpers with handle):

1 x 32 MB (in slot A) + 1 x 16 MB (in slot B) = 48 MB:	J4 on, J5 off, J6 on
1 x 64 MB (in slot A) + 1 x 16 MB (in slot B) = 80 MB:	J4 off, J5 on, J6 on
1 x 64 MB (in slot A) + 1 x 32 MB (in slot B) = 96 MB:	J4 off, J5 on, J6 on
1 x 128 MB (in slot A) + 1 x 16 MB (in slot B) = 144 MB:	J4 off, J5 off, J6 on
1 x 128 MB (in slot A) + 1 x 32 MB (in slot B) = 160 MB:	J4 off, J5 off, J6 on
1 x 128 MB (in slot A) + 1 x 64 MB (in slot B) = 192 MB:	J4 off, J5 off, J6 off

The 2 Pins (5V and Ground) on the left upper corner and the 6 Pin Con4 are for flashing.

For more hints an installation take a look here (English text version is coming soon):
<http://wiki.newtosworld.de/index.php?title=Storm>

or visit <http://forum.atari-home.de/index.php> (german forum), keyword Thunderstorm, PM to pakman, tuxie or gaga.

C) ThunderStorm both in combination:

Using the Thunder together with the Storm is the recommended combination. However, Thunder or Storm can also be operated individually.

The Thunder also works with other Fast RAM cards, such as original ATARI Fast RAM cards or Magnum TT.

D) TOS 3.06 ThunderStorm Patches:

Of course the ThunderStorm works with the original TOS, but without patches the TT will not boot from an IDE device. Anyhow, it is always possible to access the IDE device once the hard disk driver has been started from Floppy, SCSI or ACSII.

ThunderStorm Patches are available for following TOS 3.06 versions: USA, UK, FRG (German), FRA (French), SWE (Swedish) and SPA (Spain, inofficial version). These patches provide some very useful extensions, such as:

- of course the IDE boot directly from the connected IDE device without floppy disk,
- WinX version 2.3n (additional extensions can be loaded from Auto Folder) with Arrowfix,
- SHBuf (buffer size for newdesk.inf increased to 2x 16kB),
- BPatch (XBIOS Floppy Patches),
- new ThunderStorm logo at system start,
- correct display of the Fast RAM size at the end of the RAM test even beyond 64MB.

(See also here: <http://www.stcarchiv.de/stc1997/10/atari-tuning> (german text))

The included TOS 3.06 is only suitable for the TT, but there for all TT mainboard versions.

Simply remove the 4 old TOS Eeproms carefully and use the new Eeproms correctly, in the same orientation and sequence! On the new Eeproms stand the designation.

If the Eeproms are correctly installed, the ThunderStorm Logo (as shown on the first page on the upper right corner) will appear on the screen after starting the TT.

Please note:

At startup the original TOS 3.06 will check devices for an executable boot sector in following sequence: SCSI 0..7 first, then ACSII 0..7. No check on IDE at all.

Once successfully booted, TOS will stop looking for further bootable devices.

With the IDE boot patch the IDE device has priority over SCSI and ACSII, so the new boot sequence is: IDE 0..1 first, SCSI 0..7 second, then ACSII 0..7.

There is an idea to install a kind of boot device menu similar to the PC. What do you think of it?

I would be happy about a positive feedback!

Thank you for your support of the ThunderStorm
Team!

I wish you success.