

TFHH's little tinker projects - welcome!

*** PLEASE READ THE FIRST 5 PAGES CAREFULLY ***

Current state of this document: 2024 November 25

Always find the latest version here: https://www.van-radecke.de/STUFF/tfhh_HW_info.pdf

This document describes and shows my self-made expansions and enhancements for the Atari 8- and 16-Bit computer family and more...

All PCBs are – unless otherwise stated – completely populated and ready-to-use. An english manual and/or instructions is always provided in digital form (PDF file). Sometimes other languages are available, too.

My solutions are handmade (except making of the PCB itself, of course) and hand-soldered. You will get fully tested and working items for your beloved Atari computer! Except some End-Of-Life products all the parts I use are purchased at serious stores like Mouser etc.

Pages 2 and 3 contains a list of to the items I offer including pricing. Click on the expansion's name to jump directly to it's page where you find more Information!

Payments are only possible using Paypal in currency EURO.

Shipping costs: See page 4 of this document. Of course I will ship to all destinations worldwide.

If you want to place an order, please send me an email with the item(s) you want. I will check your order and respond with the grand total including shipping costs. Shipments are always insured and tracked due to Paypal rules. Thanks for understanding!

Questions? Just write an email to me. Usually I will answer within 24 hours.

Important: My main communication channel is EMAIL. Please use it always. I have no filters active, so every email will reach me (as long you use the correct address 😊).

PN or PM (personal messages) from forums like AtariAge will be answered with the request to send an email and then immediately deleted. This is the only way I can be sure nothing is forgotten and having my backlog and inquiries currently in process. Thanks for understanding!

Best regards, Jurgen

Contact:

Jurgen van Radecke

Email: tf_hh@gmx.de or jvradecke@gmail.com

You can write in German or English 😊

List of items made by tfhh

Atari 8-Bit items

Name of enhancement, expansion or PCB	Needed solder skills	For use with / compatible with	Price in EURO
Sys-Check V2.2 XL/XE Standard-Version	None	Atari 600XL, 800XL, all Atari XE with ECI-Port	45
3D printed case for Sys-Check XL/XE Standard. Color of case can be choosen.	None	Sys-Check V2.2 XL/XE Standard. Royalty payment to TheRobotFactory included!	10
Sys-Check V2.2 XL – now with free 3D printed case inclusive!	None	Atari 600XL and Atari 800XL	40
Sys-Check V2.2 XE – now with free 3D printed case inclusive!	None	Atari XE with ECI-Port	40
Super Color CPU Card	Easy	Atari 400 & 800	65
48/52 KB RAM-Card	Easy	Atari 400	25
BitWriter 1050 Replica	Medium	Atari 1050 Diskdrive	50
Mini-Speedy 1050	None	Atari 1050 Diskdrive	25
Mini-Super-Speedy 1050	None	Atari 1050 Diskdrive	30
Turbo 1050 Replica	Easy	Atari 1050 Diskdrive	20
64 KB SRAM Charger	None (Indus)	Indus GT disk drive, LDW Super 2000, CA-2001	10
512 KB SRAM memory expansion V4.5 Standard	Medium	Atari 800XL, 1200XL, all XE models & XEGS except 600XL	25
576 KB SRAM memory expansion V2 for 600XL	Easy	Atari 600XL only – includes 64 KB base and 512 KB expanded memory	35
KEYCON bare PCB	Easy	All Atari XL and XE	5
GTIA Fixer	Medium	All Atari XL, XE and XEGS	10
Stereo Enhancement (Gumby Stereo). Need a second POKEY chip!	Medium	All Atari XL, XE and XEGS – 600XL with restrictions, see item´s info	25
New: PAL Injector Board	None or Medium	All NTSC Atari 8-Bit computers	12

List of items made by tfhh (part 2)

Atari 16-Bit and other items

Name of enhancement, expansion or PCB	Needed solder skills	For use with / compatible with	Price in EURO
Atari 16 Bit items			
Automatic HD 1.44 MB Floppy Switch Module with Media Change Fix	Medium	Atari 260/520/1040 ST/STM/STF/STFM, Mega ST and Atari 1040 STE	20
Dual-TOS Card TOS 1.0x / 2.0x Standard	Medium	Atari 260/520/1040 ST/STM/STF/STFM, Mega ST	30
Dual-TOS Card TOS 1.0x / 2.0x with Mega ST compatible RTC	Medium	Atari 260/520/1040 ST/STM/STF/STFM	40
Dual-TOS Card TOS 1.0x / 2.0x with Mega ST compatible RTC for 1040 STE	Medium	Atari 1040 STE only	40
4 MB RAM Expansion	Expert	Atari 260/520/1040 ST/STM/STF/STFM, Mega ST	35
NEW: CleanRAM Mega ST 1 (4 MByte Expansion)	Medium	Atari Mega ST 1 (Mainboard C103277)	35
NEW: CleanRAM Mega ST 2 (2 MByte Expansion)	Medium	Atari Mega ST 2 (Mainboard C100501 or C100167)	35
miscellaneous stuff			
Acorn BBC Dual Joystick Adapter DB-9 EOL	None	Acorn BBC series with DB-15 analogue joystick connector	5

Additional information to the lists from the previous two pages

Name of enhancement: My project's name. A red **EOL** indicates the project is End-Of-Life and no new batches will be made if all remained pieces are sold. If you're interested anyway, a minimum of 5 pieces must be ordered and paid in advance.

Solder skills needed: Simple categorization of the solder skills needed to install the expansion:

- None – This item doesn't require soldering
- Easy – Only some wires must be soldered to special points (explained in the manual)
- Medium – Desoldering skills and -tools required
- Expert – Desoldering skills and -tools plus ability to read schematics required

For use with: Describes the Atari computer system(s) (or other platforms) which the expansion, enhancement or PCB is designed for.

Price: The price in currency EURO for one piece.

Availability:

Due to limited spare time and being a private person with a regularly job I can't have big stocks. New items are made at the weekend. All items are offered as "on demand".

If you want to order one or more items, please send me an email with your inquiry. After clarification all details I start assembling your devices (sometimes I have a few also ready, of course). When I'm ready, you're charged and after funds received the goods are dispatched.

Shipping costs to all destinations:

Please send an inquiry by email about the item(s) you want to tf_hh@gmx.de – Include your destination country and postcode (ZIP-code) so I can calculate the cost of the most reliable shipping method.

Because the shipping rates depend strongly on the destination country and might change from month to month, I didn't include the shipping costs here.

Of course I will ship to UK and all other destinations worldwide!

Sometimes you've to pay custom fees and import taxes. Please keep in mind that I'm not responsible for these costs. Based on the feedback from buyers only in 1 of 20 cases the custom inspection wants fees for my small parcels.

More additional information...

Sys-Check devices:

Some questions have reached me, so I will explain more detailed.

- The “BBU” (Battery BackUp Feature) version is only useful for programmers, who use SpartaDOS X or other DOS versions which can detect valid memory expansion contents without destructive (write to memory) tests. Personally I know only about SDX and X-DOS being able of this feature. If you don’t need this feature, save money and take the standard version. **BBU version is discontinued from November 2024.**
- Every Atari 600XL or 800XL has a PBI-port. PBI stands for Parallel-Bus-Interface. This one is needed by Sys-Check to claim control of the whole computer.
- Atari 1200XL machines hasn’t a PBI-port. Sys-Check can’t work here.
- The Atari XEGS (XE Game System) has also no PBI-port or ECI-port. Sys-Check can’t work here, too.
- All Atari XE models sold in Europe have an ECI-port. ECI means “Enhanced/Expansion Computer/Cartridge Interface” and provides the signals missing at the cartridge connector to have something like a PBI-port from the Atari 600XL/800XL. XE computers with ECI-port make Sys-Check work fine.
- Some Atari 65XE machines sold outside the European area have only the cartridge connector, but not the ECI-port. Sys-Check also can’t work with those machines.

Summary:

All Atari 600XL and 800XL: Sys-Check works fine

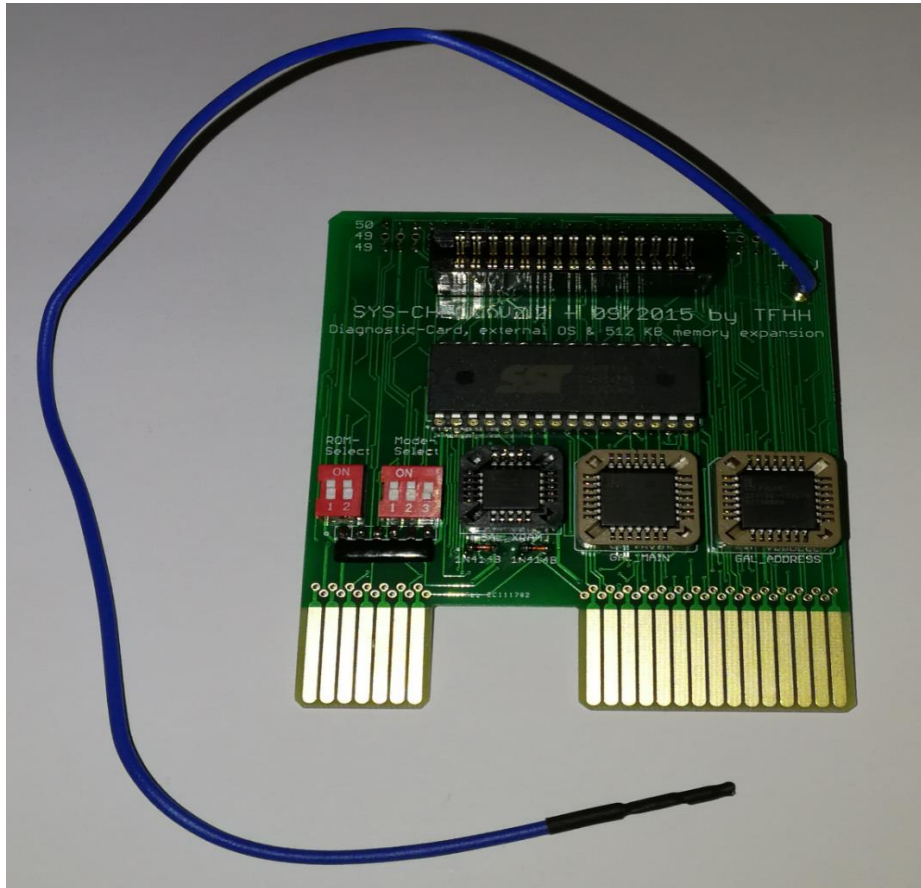
All European XE models: Sys-Check works fine

All non-European Atari 130XE and 800XE: Sys-Check works fine

All non-European 65XE: Compare the rear side of your machine with this picture:



Sys-Check V2.2 Standard (for XL and XE)



Manual / Instructions in: English and German

The Sys-Check V2.2 external device offers these major functions:

- Diagnostic tool for dead computers without the need to open the case
- External O.S. (operating system) switcher (up to four O.S. can be user selected)
- You can also put any standard ROM or EPROM containing Atari O.S.(s) in the DIP socket on Sys-Check's PCB
- External 512 KB Standard memory expansion using „RAMBO“ scheme
- All future updates of the diagnostic tools can be easily flashed into the Flashchip with an easy-to-use flashtool using your Atari XL or XE

Attention: Sys-Check Standard requires any XL computer with a PBI-port (all 600XL and 800XL, but not the 1200XL) or any XE computer with ECI-port (800XE, 130XE, some 65XE, but not the XEGS). Some (mostly NTSC) XE models do not have an ECI-port, so Sys-Check will not work with those machines. See page 4 for more details.

See also more information:

AtariAge: <http://atariage.com/forums/topic/251315-sys-check-v22-ready-to-use-batch-available/>

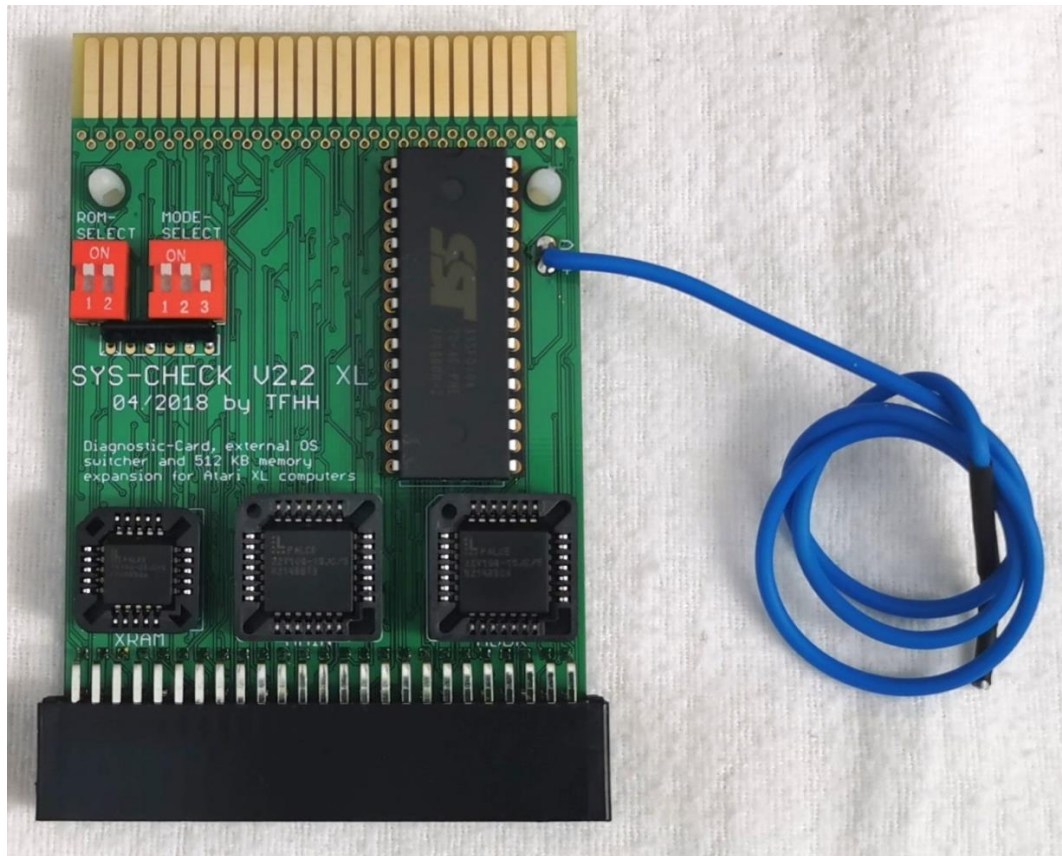
AtariAge: <http://atariage.com/forums/topic/233201-orders-for-sys-check-ii-pcb-w-parts-only-accepted/>

Video made by Nir Dary: <https://youtu.be/hht2tUoBSfc>

Download manual / instructions here:

http://www.van-radecke.de/SysCheck/Sys-Check_V2_2.zip

Sys-Check V2.2 XL



Manual / Instructions in: English and German

The Sys-Check V2.2 XL external device offers these major functions:

- Diagnostic tool for dead computers without the need to open the case
- External O.S. (operating system) switcher (up to four O.S. can be user selected)
- You can also put any standard ROM or EPROM containing Atari O.S.(s) in the DIP socket on Sys-Check's PCB
- External 512 KB Standard memory expansion using „RAMBO“ scheme
- All future updates of the diagnostic tools can be easily flashed into the Flashchip with an easy-to-use flashtool using your Atari 600XL or Atari 800XL
- You get a PBI pass-through connector, so you can connect another PBI device!
- Current, revised version works fine with KMK-IDE and all other PBI devices

Attention: Sys-Check XL requires an Atari XL computer with PBI-port. You can use this „XL“ version of Sys-Check with all Atari 600XL or Atari 800XL computers, but not with the Atari 1200XL which has no PBI-port.

See also more information:

AtariAge: <http://atariage.com/forums/topic/251315-sys-check-v22-ready-to-use-batch-available/>

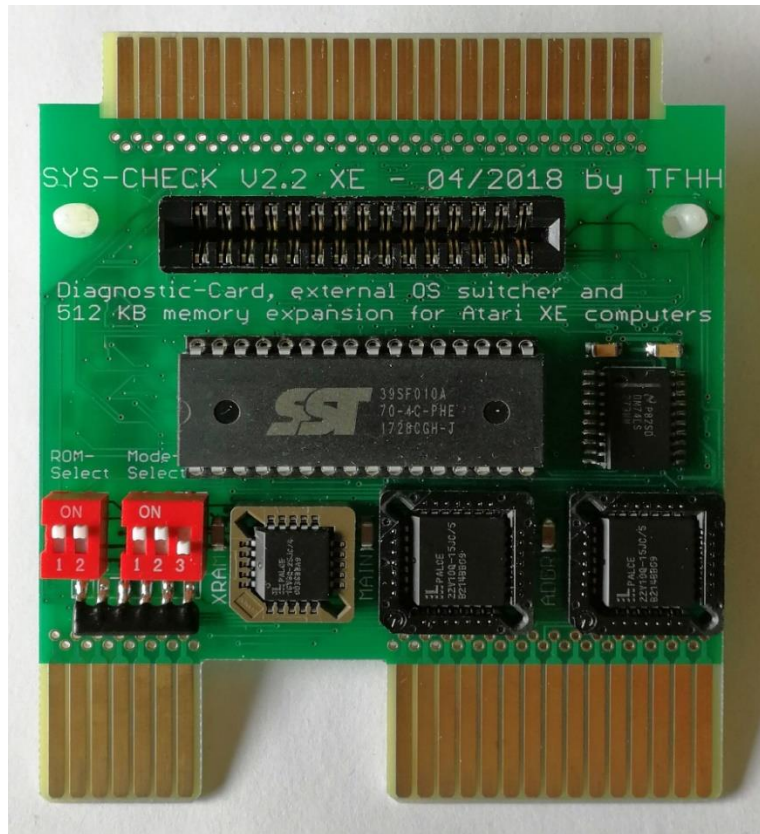
AtariAge: <http://atariage.com/forums/topic/233201-orders-for-sys-check-ii-pcb-w-parts-only-accepted/>

Video made by Nir Dary: <https://youtu.be/hht2tUoBSfc>

Download manual / instructions here:

http://www.van-radecke.de/SysCheck/Sys-Check_V2_2.zip

Sys-Check V2.2 XE



Manual / Instructions in: English and German

The Sys-Check V2.2 XE external device offers these major functions:

- Diagnostic tool for dead computers without the need to open the case
- External O.S. (operating system) switcher (up to four O.S. can be user selected)
- You can also put any standard ROM or EPROM containing Atari O.S.(s) in the DIP socket on Sys-Check's PCB
- External 512 KB Standard memory expansion using „RAMBO“ scheme
- All future updates of the diagnostic tools can be easily flashed into the Flashchip with an easy-to-use flashtool using your Atari 800XE, 130XE or 65XE
- You get a PBI like pass-through connector for your XE 😊
- Current, revised version works fine with KMK-IDE and all other PBI devices

Attention: Sys-Check XE requires an Atari XE computer with ECI-port. You can use this „XE“ version of Sys-Check with all Atari 800XE, 65XE or 130XE computers, but not with the Atari XEGS – this model hasn't an ECI-port. Also some 65XE models have only a cartridge port, but not an ECI-port. Sys-Check XE can't work with these models! See page 4 for more details.

See also more information:

AtariAge: <http://atariage.com/forums/topic/251315-sys-check-v22-ready-to-use-batch-available/>

AtariAge: <http://atariage.com/forums/topic/233201-orders-for-sys-check-ii-pcb-w-parts-only-accepted/>

Video made by Nir Dary: <https://youtu.be/hht2tUoBSfc>

Download manual / instructions here:

http://www.van-radecke.de/SysCheck/Sys-Check_V2_2.zip

Super Color CPU Card



Manual / Instructions in: English

The Super Color CPU Card (SCCC) is a replacement CPU card (board) for all Atari 400 and Atari 800 computer systems (not XL or XE systems!). The SCCC offers the following features:

- Supports either 6502B (Standard NMOS 6502 CPU) or 6502C (Special version made specifically for Atari called „SALLY“). So you choose based on availability.
- Can be used with PAL or NTSC systems
- Includes the fantastic „Ultimate Atari Video“ (UAV rev.D) circuit, developed by Bryan Edewaard. The UAV provides the best, non RGB quality picture you can get!
- When installed in an Atari 400, you automatically have a real video output (and also audio, of course) instead of the low quality antenna (RF) signal!
- You get a ultrasharp S-Video (Y/C) and a very good Composite Video output!
- Includes a mono audio amplifier mixing POKEY and SIO sound together

Note: You must provide three ICs which you can carefully remove from a standard Atari 400 or 800 CPU card: GTIA (or CTIA), ANTIC and CPU 6502C (or 6502B)

See also more information:

AtariAge: <http://atariage.com/forums/topic/260646-new-hardware-atari-400800-super-color-cpu-card/>

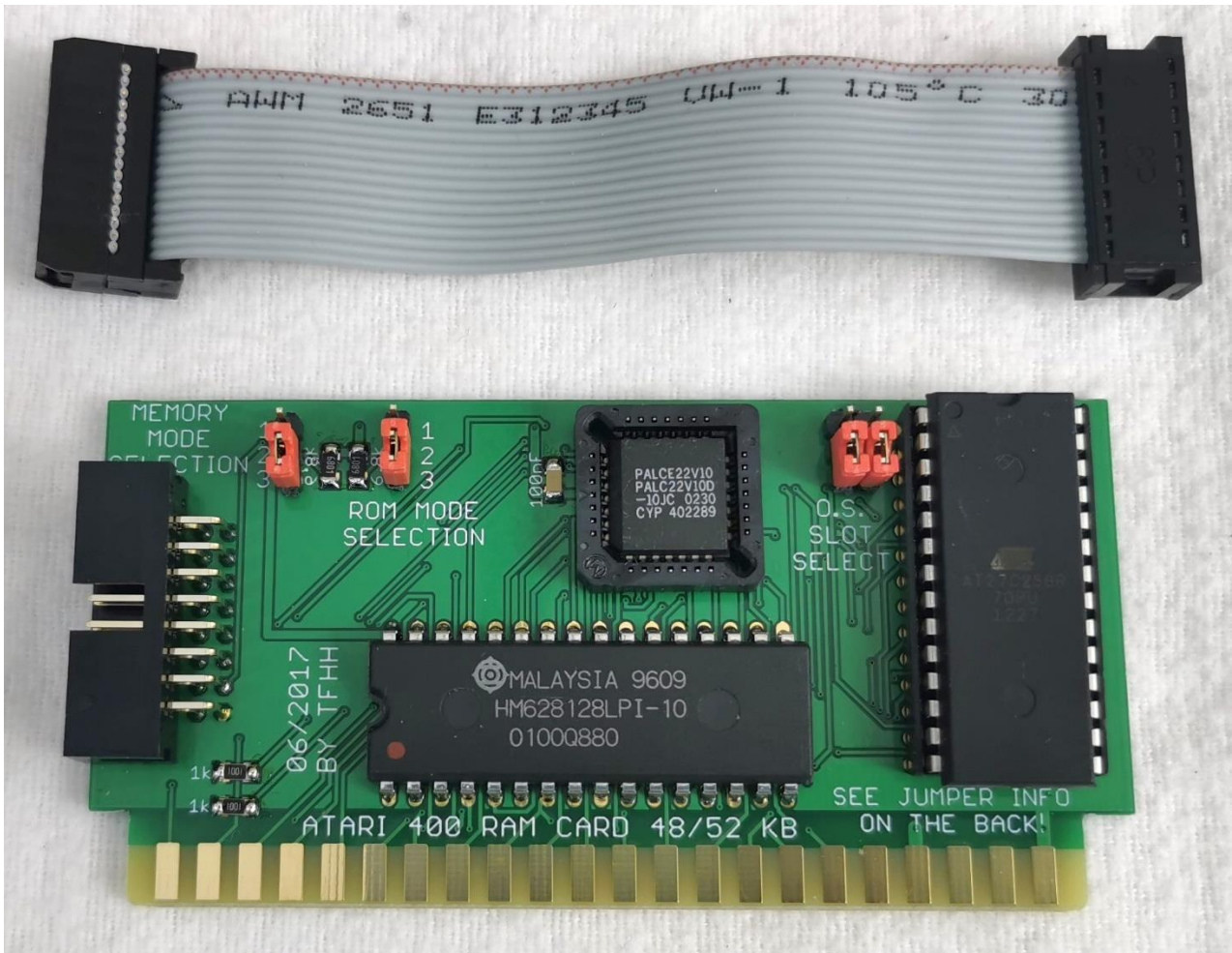
YouTube-video made by Jon Halliday:

<https://youtu.be/E3GsSImpNj8>

Download manual / instructions here:

<http://www.van-radecke.de/SuperColorCPUCard/SCCC.zip>

48/52 KByte RAM Card for Atari 400



Manual / Instructions in: English

The 48/52 KB RAM Card is made specially for the Atari 400 computer system. By default, the 400 is only equipped with 16 KB RAM which greatly limits the software that can be run. RAM expansion cards are rare, expensive and sometimes have compatibility issues when made with stacked DRAMs. So here's my solution:

- Offers 48 or 52 KByte RAM, which makes your 400 like an Atari 800 – all software that worked on the Atari 800 will also run now on your Atari 400!
- You can install up to four different O.S. (operating systems) using an industry standard EPROM. Using this feature, you can easily change from NTSC to PAL or vice versa without the need to replace expensive original mask-ROMs.
- A standard 27C512 EPROM programmed with OS-A and OS-B in PAL & NTSC is included

See also more information at AtariAge:

<http://atariage.com/forums/topic/267042-new-hardware-atari-400-ram-card-4852-kb-external-os-rom/>

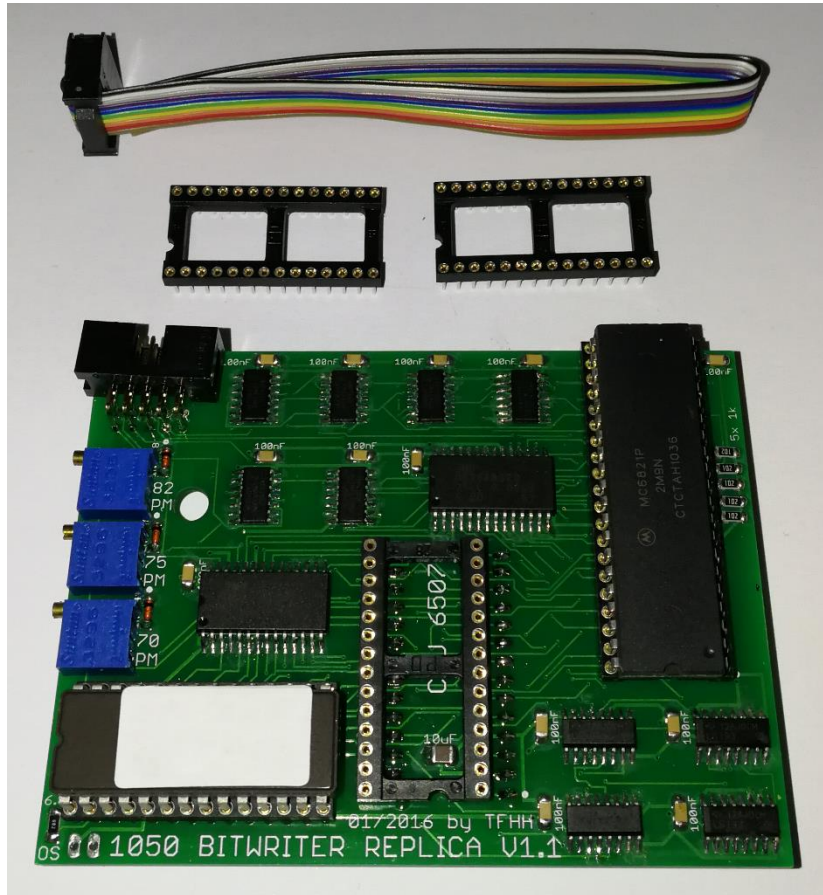
YouTube-Video made by Sugarland about installation of one 48/52 KB RAM Card:

<https://youtu.be/BLn08hwZ2z8>

Download manual / instructions here:

<http://www.van-radecke.de/Atari400RAMCard/Manual.zip>

BitWriter Replica1050



Manual / Instructions in: English and Polish

The BitWriter 1050 Replica is the reproduction of one of the best copy solutions for the Atari 1050 diskdrive. It contains the Super Archiver 1050 and the BitWriter 1050 on one single PCB.

The BitWriter 1050 gives additional possibilities to the well-known Super Archiver 1050. So you're able to copy the latest copy protection schemes from Electronic Arts for example. BitWriter 1050 supports three different drive motor speeds and complex analytic functions when reading whole tracks of protected disks. It's a must-have for preservation fans of original software.

Note: Offered is the „B“ model (see AtariAge thread). I discontinued production of the „A“ version due to lack of interest.

See also more information at AtariAge:

<http://atariage.com/forums/topic/249368-bitwriter-1050-replica-interest-poll/>

<http://atariage.com/forums/topic/249750-bitwriter-replica-1050-order-phase-has-started/>

Download manual / instructions here:

http://www.van-radecke.de/BitWriter/BitWriter_Replica_1050.zip

Mini-Speedy 1050



Manual / Instructions in: English and German

The Mini-Speedy 1050 is the smallest floppy speed-up for the Atari 1050 diskdrive available! This is a small PCB size of only 5 x 5 cm and it's installation is absolute solderfree. Just remove two chips, cutoff four capacitors and plug the Mini-Speedy in the 1050 mainboard – that's all!

The Mini-Speedy 1050 offers the following features:

- Highspeed SIO transfer up to approx 76000 bps – much faster than the Happy 1050!
- Real Double Density (180K each disk, 256 bytes per sector)
- Flawless 8 KByte track buffer with highspeed write by default
- Works with all known Highspeed SIO routines and with any DOS
- Just boot your 1050 with the disk lever in open position to load the Highspeed-Copy-Utility

The Mini-Speedy 1050 is equipped with the patched V1.7 firmware (latest), this firmware works with PAL and NTSC systems (unlike genuine Speedy firmware that runs only with PAL, but not with NTSC computers using Highspeed-SIO!)

Download manual / instructions here:

<http://www.van-radecke.de/MiniSpeedy/MiniSpeedy1050.pdf>

Mini-Super-Speedy 1050



Manual / Instructions in: English and German

This floppy speed-up for the Atari 1050 diskdrive includes all features from the Mini-Speedy 1050 (see previous page) plus one great additional feature: It can write a whole disk including format and verify in about 30 seconds! The secret: The data is loaded into the Super-Speedy's onboard 256 KB RAM. You can write as many copies as you want from the RAM inside your 1050 – no transfer through the bottle-neck SIO bus is needed! The installation is absolute solderfree. Just remove two chips, cutoff four capacitors and plug the Mini-Super-Speedy into the 1050 mainboard – that's all!

The Mini-Super-Speedy 1050 offers all features like the Mini-Speedy 1050 (see prior page). When you access your 1050 with Mini-Super-Speedy equipped drive all read/write functions are the same like with the standard Mini-Speedy 1050.

The „additional power“ is only available when booting your 1050 with Mini-Super-Speedy as D1: and open disk lever. A special copy program is loaded into your computer, which controls now the high-speed copy features with the Super-Speedy!

Speedy-Software is patched with english words and commands and runs with NTSC, too!

Download manual / instructions here:

<http://www.van-radecke.de/MiniSpeedy/MiniSuperSpeedy1050.pdf>

Watch video copying a double density disc with the Super Speedy copy tool:

http://www.van-radecke.de/MiniSpeedy/MiniSuperSpeedy_copy_in_action.mp4

Turbo 1050 Replica



Manual / Instructions in: English

The Turbo 1050, made by B. Engl, is one of the „freakiest“ products I know. Just using an EPROM, a GAL (logic chip) and some parts around the Turbo 1050 is a very cool floppy enhancement for the Atari 1050 diskdrive. The power is in the software only! No track buffer, no additional RAM, no CPU with bigger address space. On the other hand, Turbo 1050 can copy more protected games like any Happy 1050!

A short brief about the features:

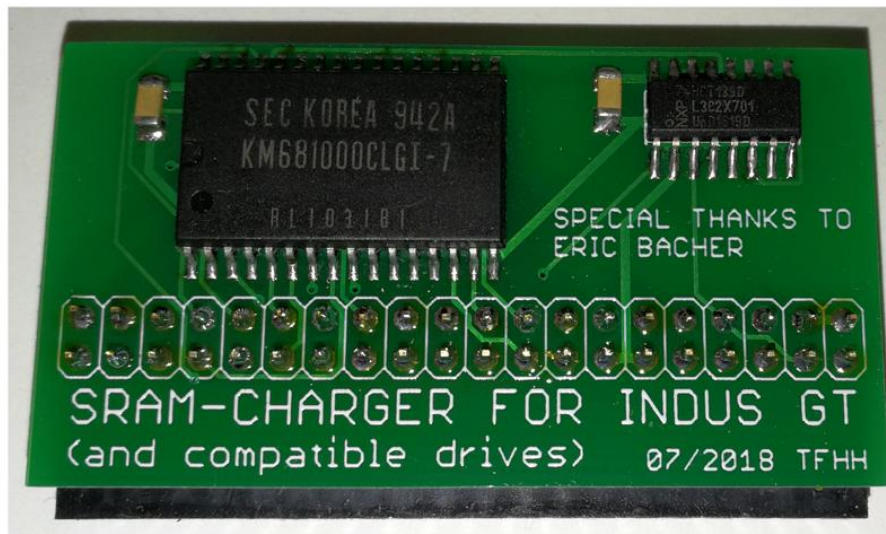
- Enables Double Density (180K per disk, 256 bytes per sector)
- Enables Highspeed-SIO up to 70000 bps (more than „Warp Speed“)
- Has built-in „BackUp Machine“ for copy of protected disks
- Parallel port printer interface (you need an additional breakout board, which is not included in this replica – but technically supported)

Due to the fact that the Turbo 1050 does not have any track buffer the Highspeed-SIO is always used, but is really effective only when the disk to be used was formatted using the Turbo 1050. The Turbo 1050 formats disks with a special interleaving, so that these disks can be read at the same speed like all other floppy enhancements with track buffer. Of course disks formatted with the Turbo 1050 can be read & write in any other drive with any other enhancement (or stock).

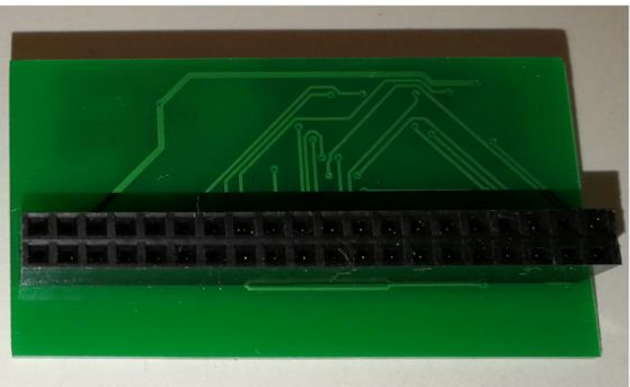
Download manual / instructions here:

http://www.van-radecke.de/Turbo1050/Turbo_1050_Replica.zip

SRAM Charger for Indus GT and compatible disk drives



For use with the genuine Indus GT drive



For use with the "clone drives"
(LDW Super 2000 or CA-2001)

Manual / Instructions in: English

This little PCB is a 64 KByte memory card for the Indus GT disk drive and the compatible clones LDW Super 2000 and CA-2001. With this SRAM Charger add-on card you can run CP/M in your disk drive! This expansion will leave standard disk drives features untouched, of course.

Important: Please specify the drive model where you want to use your SRAM Charger when placing an order! As you can see in the picture above, two versions are offered.

Indus GT users need only to open the drive, plug in the SRAM charger and that's all. If you're an owner of the clone versions LDW Super 2000 or CA-2001, you must do some solder work on the drive's mainboard first. Detailed information is provided in the manual.

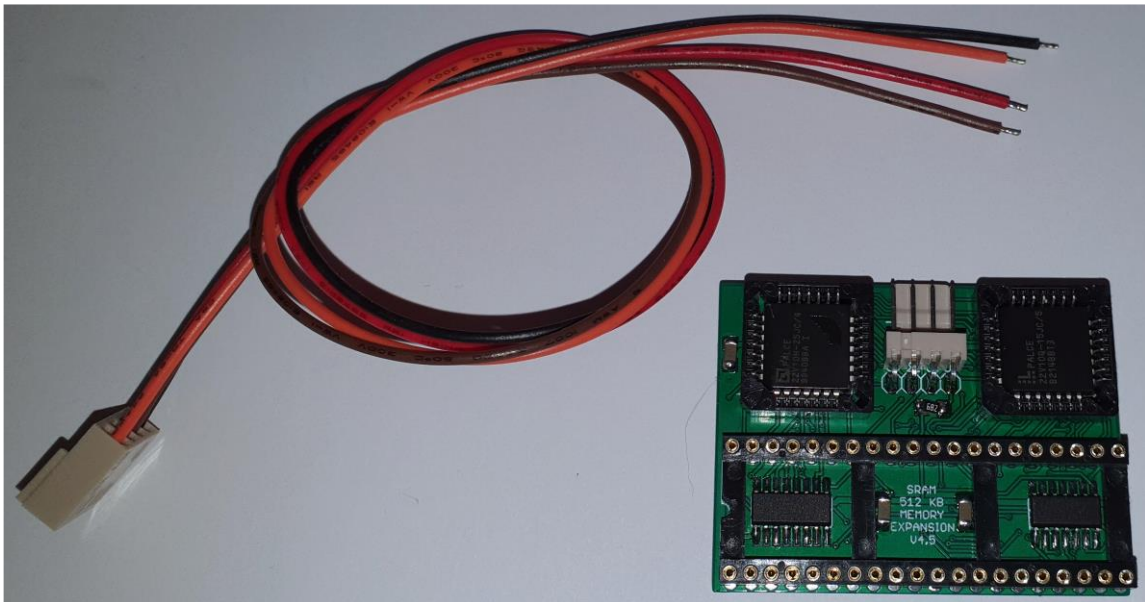
Special thanks to Bartosz Trybus for supporting me with his useful hints and tests!

Download manual / instructions here:

http://www.van-radecke.de/SRAM_Charger/SRAM_Charger.zip

512 KByte SRAM memory expansion V4.5

(for all Atari XL/XE/XEGS computers except the 600XL)



Manual / Instructions in: English and German

This memory expansion enables your Atari 800XL, 1200XL or any XE & XEGS model to watch the newest demos and play the actual homebrew games which often require more than the 64 KB main memory of the machine. My solution is software configured so you do not need to drill any holes for switches..

The PCB is only 0.8mm thick and doesn't need the removal of any other parts to fit in all Atari XL/XE/XEGS computers (except the Atari 600XL). For some models and/or mainboard versions of your Atari you need one or two 40 pin machine-head precision sockets to reach the needed distance to other chips and parts (not included).

After power on, the 512 KB „RAMBO“ mode is active. This mode should fit all your needs in 99% of all use cases. For some rare programs you can switch to 256 KB Compy-Shop mode (with separated ANTIC and CPU access) or switch the whole expansion off. This setting remains active until you power off the computer, a coldstart without power cycling won't change the setting in any way.

The ANTIC and the MMU needs to be desoldered and machine-head precision sockets installed. Just three wires must be soldered, a prepared cable for this is included.

This SRAM based 512 KB memory expansion „Standard“ (V4.5) works technically in all Atari XL, XE and XEGS computers and will fit in the Atari 800XL, 1200XL models as all Atari XE and the XEGS also, but not in the Atari 600XL! (see the next item for the 600XL)

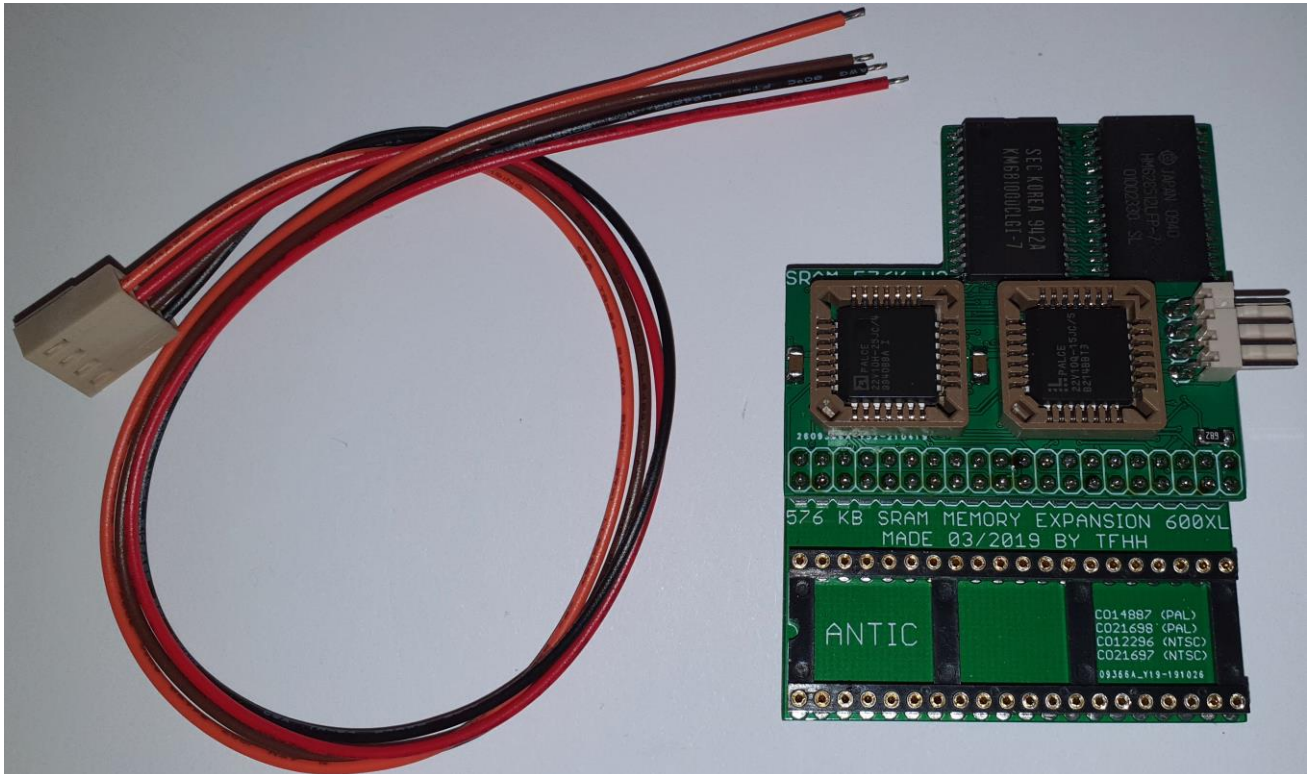
Please always check the version of your PCB! This expansion has been modified over the years several times. Be sure to use the right manual version for the right PCB!

Download manual / instructions here:

http://www.van-radecke.de/SRAM/512_KB_SRAM_memory_expansion.pdf

576 KByte SRAM V2 memory expansion for 600XL

(this model specially made for the Atari 600XL)



Manual / Instructions in: English and German

This solution expands your Atari 600XL computer in two ways:

- You get 64 KB main / base memory, so that all programs made for the 800XL etc. will also work fine
- Enables your Atari 600XL to watch the newest demos and play the actual homebrew games which often require more than the 64 KB main memory of the machine by adding an additional 512 KB banked, expanded memory

My solution is software configured so you do not need to drill any holes for switches.

By default all chips at the Atari 600XL mainboard are in sockets, so installation of the 576 KB SRAM memory expansion is very easy. It's not required to remove the RF modulator anymore!

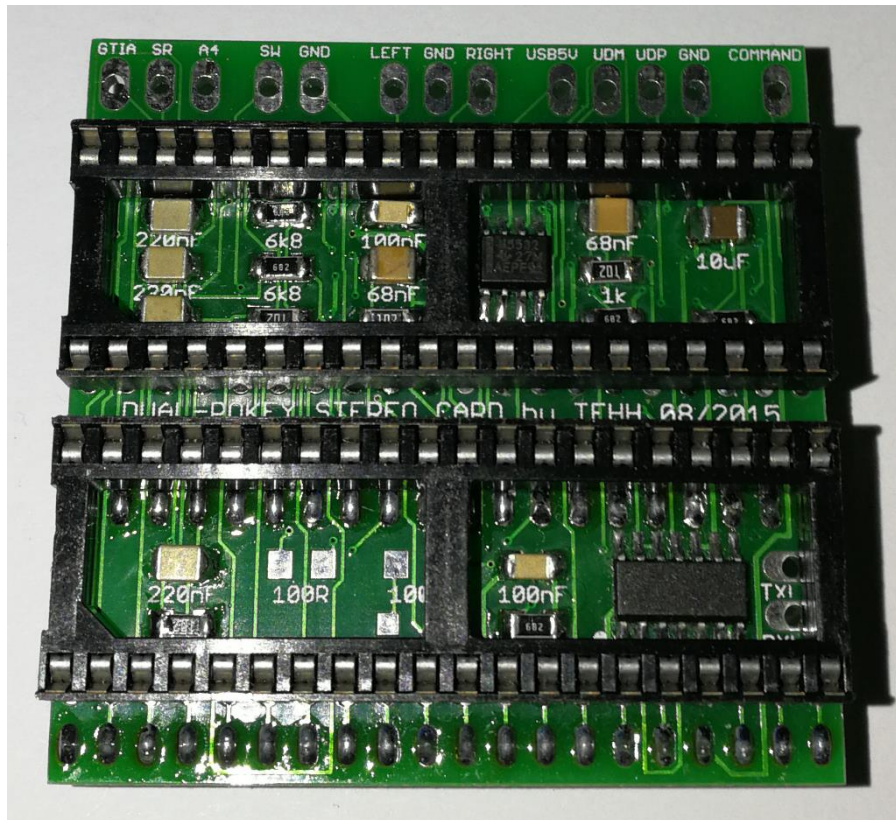
After power on, the 512 KB „RAMBO“ mode is active. This mode should fit all your needs in 99% of all use cases. For some rare programs you can switch to 256 KB Compy-Shop mode (with separated ANTIC and CPU access) or switch the whole expansion off.

This SRAM based 576 KB memory expansion V2 works technically in all Atari XL, XE and XEGS computers, but it's mainly made (size & fit) for the Atari 600XL! Please always check the version of your PCB! This expansion has been modified over the years two times. Be sure to use the right manual version for the right PCB!

Download manual / instructions here:

http://www.van-radecke.de/SRAM/576KB_SRAM_600XL_V2.pdf

Stereo Enhancement



Manual / Instructions in: English

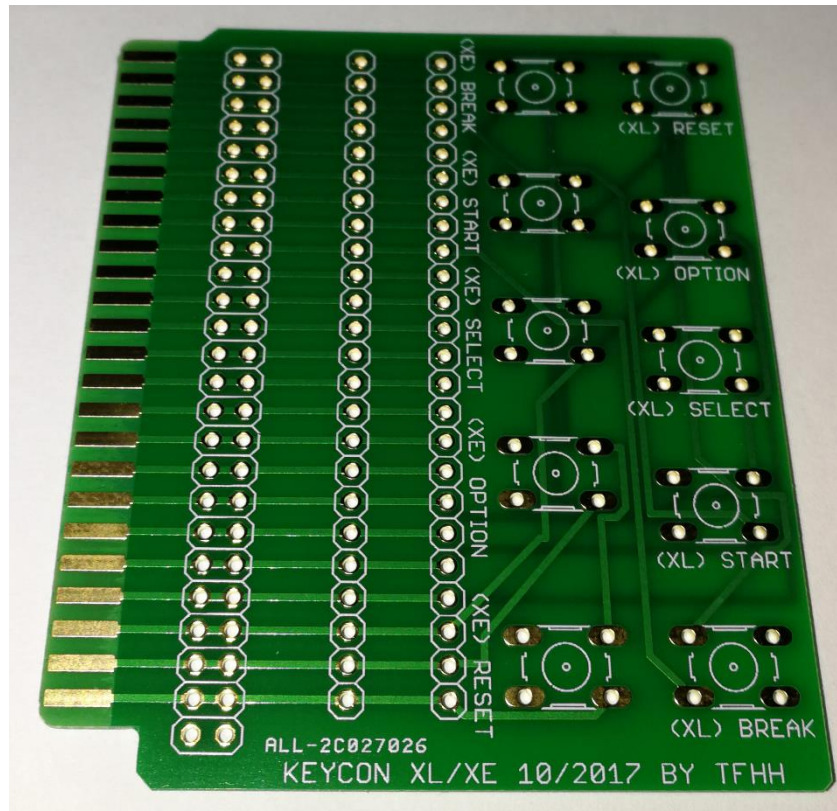
This is one of the several Dual-POKEY Stereo solutions („Gumby“). But some things are done in a unique way, maybe you will find to be useful.

- A very good amplifier (NE5532) is used providing a little more bass than usual making the POKEY sound a little more powerful (IMHO)
- The Mono/Stereo switching (CMOS 4016/4066 analogue switch) is done BEFORE coupling – so no clicks or other strange noise like with other boards of this kind will produce
- The PCB is only 5 x 5 cm and fits all Atari XL, XE and XEGS, but when it should be installed into an **Atari 600XL, the O.S. ROM or EPROM must be lowered with ultra profile sockets or directly soldered into the mainboard, otherwise it won't fit!**
- When Mono-Mode is activated, the mono sound is also played on both channels
- The Mono/Stereo switch input can be directly connected to the Ultimate 1 MB expansion or similar. A high input means „Stereo“, a low input means „Mono“
- A right channel feedback signal to the onboard LM358 amplifier is included, so both (stereo) channels are played (in mono, of course) when the standard monitor jack audio out is used

Download manual / instructions here:

http://www.van-radecke.de/Stereo/Stereo_PCB_Installation_Instructions.pdf

KEYCON bare PCB



Manual / Instructions: Not needed / See AtariAge link below

KEYCON is just a tiny thing useful for repair guys and hardware tinkerers. KEYCON enables different kinds of connectors to attach a XL or XE keyboard to the computer. You can use single row headers, double row IDC connectors (like SCSI-1 connectors with 50 pins) or the genuine mylar connector found on all Atari XL/XE mainboards.

Additional, the function keys plus the BREAK are included, you can add standard Omron 6mm tactile pushbuttons to press the desired keys directly without attached keyboard. These keys are mostly used for the SALT test-cartridges and that's the reason why I include them 😊

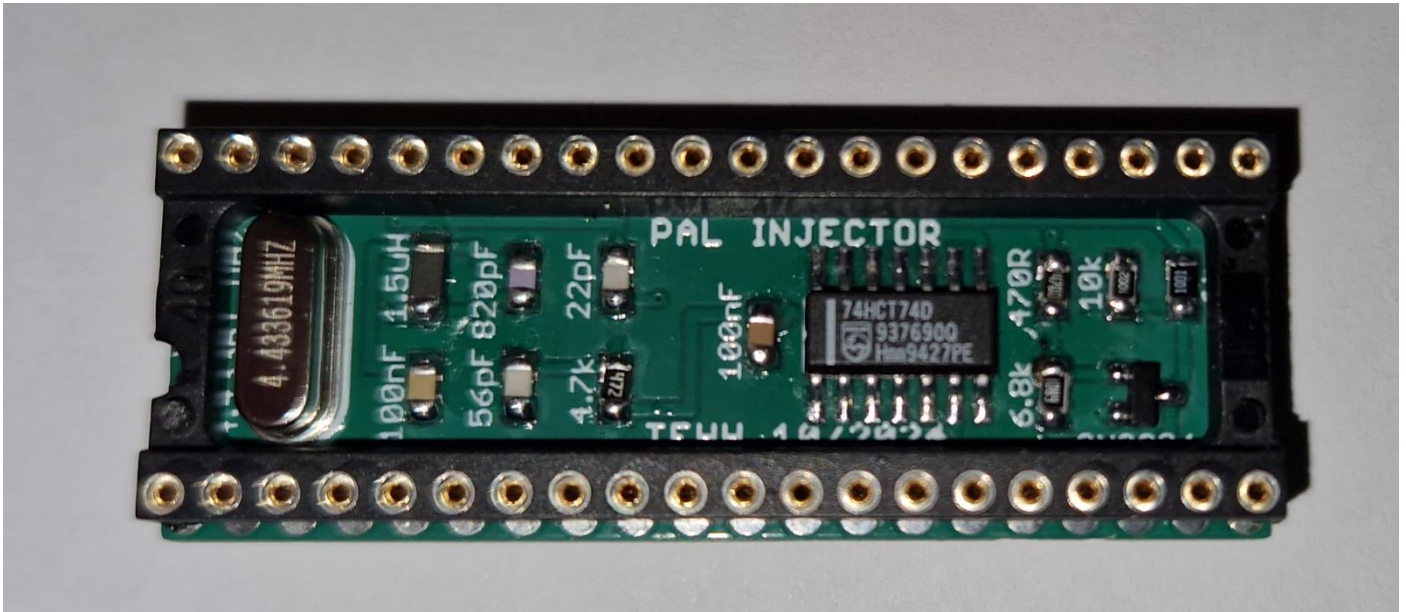
KEYCON comes bare without any components. You decide, what you want on it!

Please keep in mind, that KEYCON is primarily for diagnostic and repair. You can't install it in the computer and close the case due to space limitation.

See also more information at AtariAge:

<http://atariage.com/forums/topic/270312-new-tiny-project-keycon-keyboard-adapter-for-xlxe/>

PAL Injector Board



Manual / Instructions in: English

This little board provides the PAL color burst clock and it's useful for all who want to convert their NTSC Atari 8-bit machine to a PAL machine. Some computers like the 1200XL doesn't have the placeholder for installing the needed parts, other doesn't want to solder much and at least you need some special parts, which are expensive to buy only in amounts of one or two.

So here's the solution. Just remove your NTSC GTIA (in some machines you've to desolder it before and install a precision turned pins socket), plug in this board and a PAL GTIA above.

Of course you need overall the following parts to convert your NTSC machine to a PAL machine:

1. PAL GTIA (CO14889)
2. PAL ANTIC (CO21698 or CO14887)
3. 3.546 MHz system crystal (Atari 400,800,XL except XL with Freddie chip)
or
14.187 MHz system crystal or oscillator (All Atari XE, XL with Freddie chip and the XEGS)

If you plan to use VBXE in your Atari computer, then you didn't need the system crystal. VBXE is providing the needed system clock and can be set to PAL or NTSC by jumper (on the VBXE PCB).

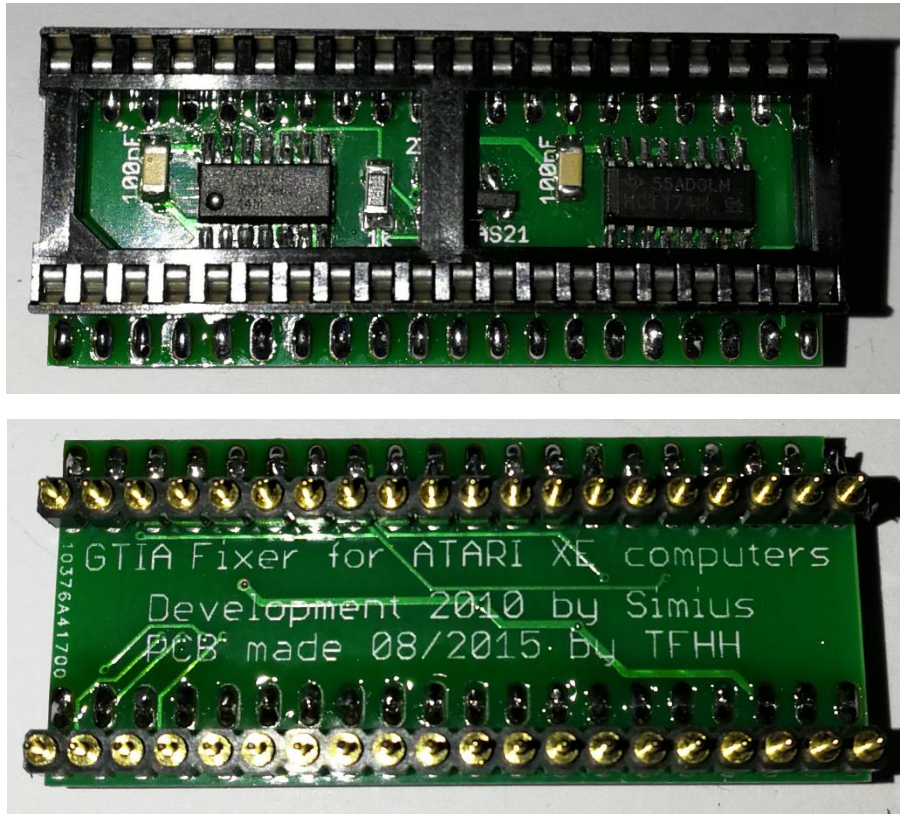
This small board also fits well in the NUC576 Mini-Atari-Systems made by Mytek!

This expansion doesn't work using SECAM machines! You can't convert a SECAM machine to PAL, because the special SECAM GTIA (FGTIA) has a different pinout!

Download manual / instructions here:

http://www.van-radecke.de/PAL/PAL_Injector.pdf

GTIA Fixer



Manual / Instructions in: English and German

The circuit of the GTIA Fixer was developed in 2010 by Simius.

This little PCB fixes the problems you get with some faulty GTIA models found in XE computers (**PAL only!**). Mostly the 800XE model is affected. The effect of having a faulty GTIA will be visible using some games and demos, for example the space ship intro sequence of „Rescue on Fractalus“ and much more. When the GTIA test screen of SysInfo (by KMK) looks like the example below, your GTIA is probably affected.

One way is to change the GTIA to a good working one, the other way is to use this little PCB. Just plug the PCB into the place where the GTIA was before, put the faulty GTIA on this PCB and that's all – now everything is fine.

Requires desoldering the GTIA from the (XE) mainboard!

Example images of a defect PAL GTIA:

http://www.van-radecke.de/abbuc/GTIA-Bug/GTIA_Bug_SysInfo.jpg

http://www.van-radecke.de/abbuc/GTIA-Bug/GTIA_buggy1.jpg

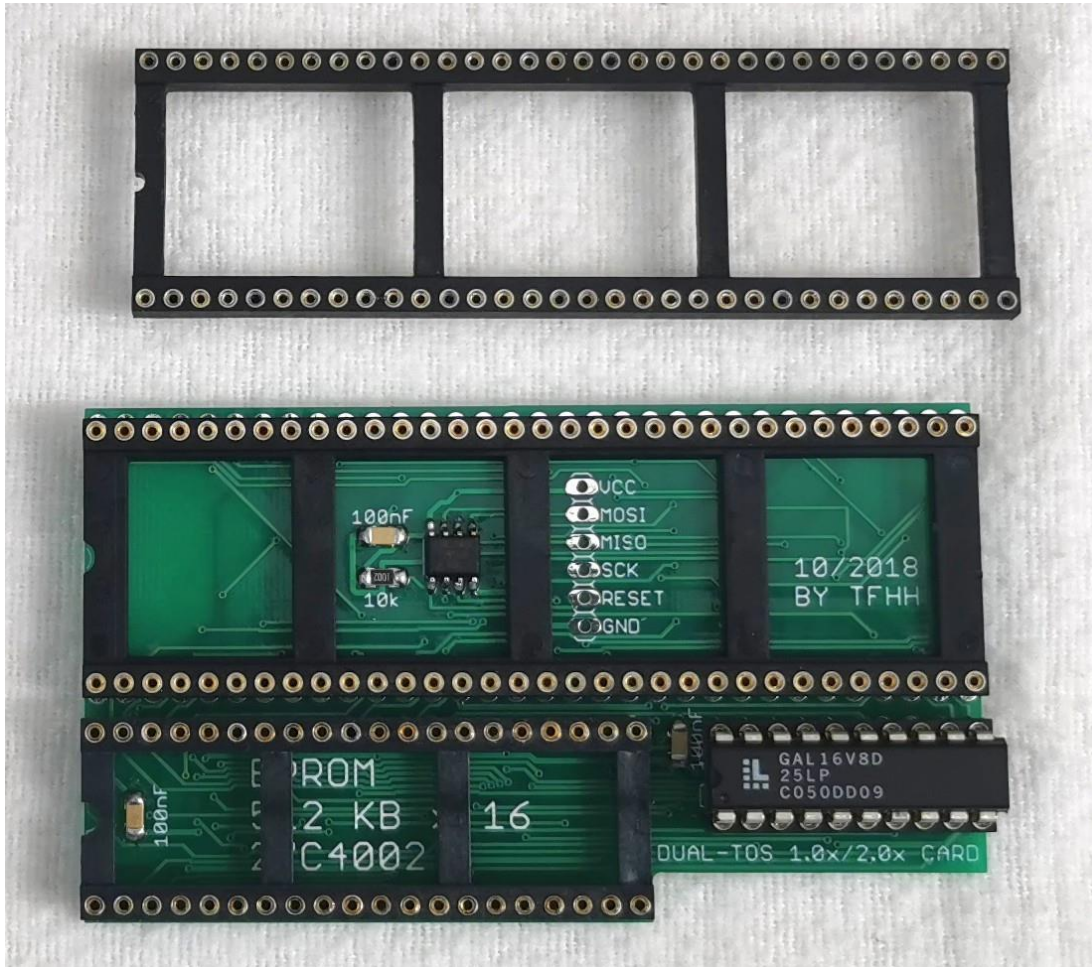
http://www.van-radecke.de/abbuc/GTIA-Bug/GTIA_buggy2.jpg

http://www.van-radecke.de/abbuc/GTIA-Bug/GTIA_buggy3.jpg

Download manual / instructions here:

http://www.van-radecke.de/GTIAFIX/Info_GTIA_Fixer.pdf

DUAL TOS Card for Atari STs



Manual / Instructions in: English

This is a DUAL TOS solution for all Atari ST computers with 68000 CPU in DIP format. The expansion can be installed in:

- All Atari 260 or 520 ST or STM computers
- All Atari Mega ST (not Mega STE) computers
- All Atari 520 or 1040 STF or STFM computers except the versions, where the CPU is located under the floppy drive

Installation requires soldering as well as the desoldering of the CPU and installing the provided additional socket plus only one wire must be connected.

This card enables the usage of TOS 1.0x and 2.0x for all ST computers. By holding down the RESET pushbutton for more than 1.2 seconds the active TOS version is switched. The current state is saved and restored after power-off. You can use any TOS 1.0x and any TOS 2.0x.

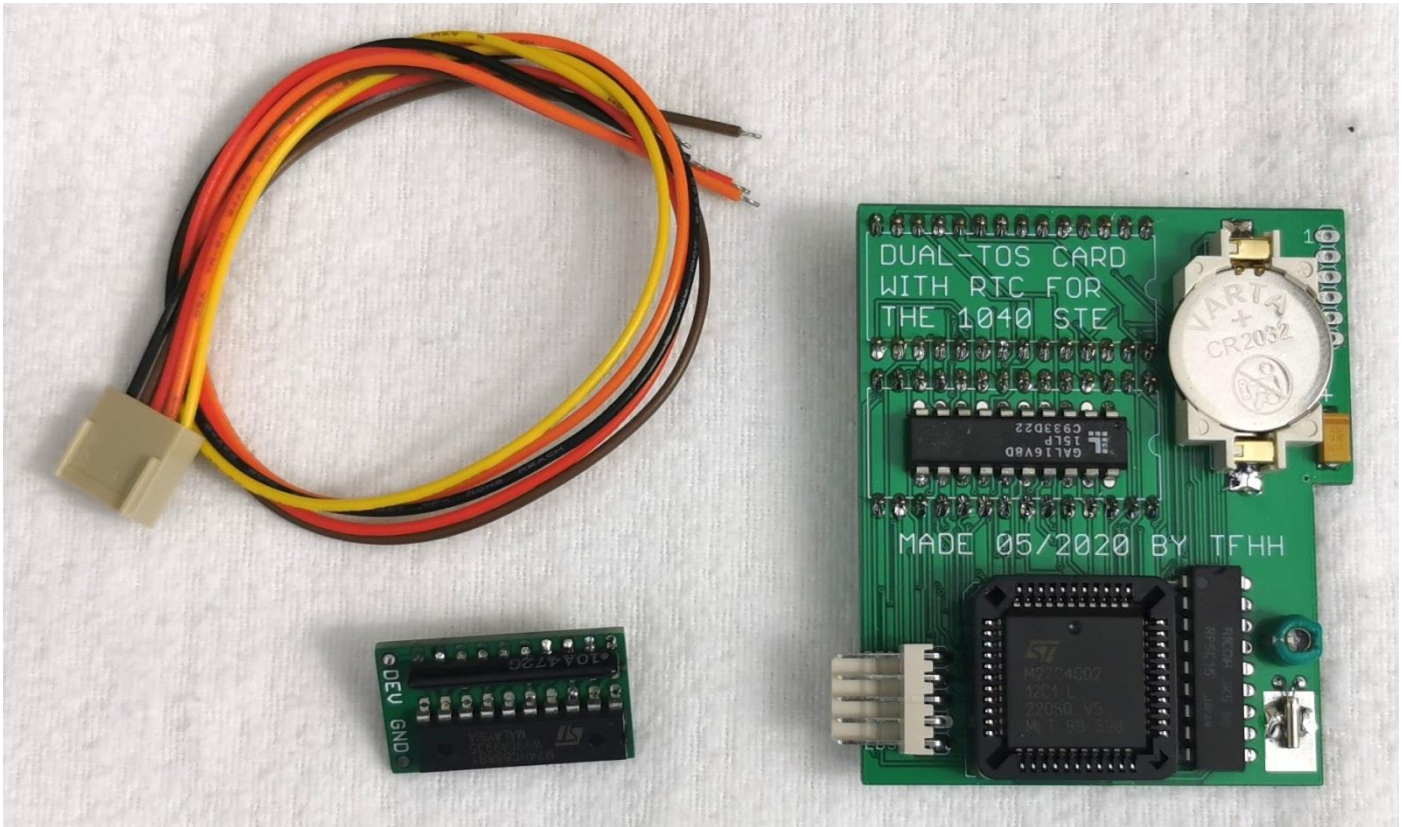
An eraseable EPROM 27C4002 40 pin DIP is included. You can get it empty/blank for own programming or let me know which TOS versions and language(s) you want programmed.

Download manual / instructions here:

<http://www.van-radecke.de/ST/DualTOSCard.pdf>

DUAL TOS Card with Mega ST comp. RTC for Atari 1040 STE

can



Manual / Instructions in: English

This is a DUAL TOS solution with a Mega ST compatible RTC (Real-Time-Clock) specially made for the **1040 STE only**. No additional software for the RTC is needed, fully supported by all TOS versions which can be used in an Atari 1040 STE.

Installation requires soldering. By default the TOS ROMs are in sockets, so the main PCB will be just plugged in. Five wires must be soldered to specific solder joints around the CPU (no soldering directly at the CPU needed). One resistor network must be removed (it can be cutoff) and the little PCB soldered in.

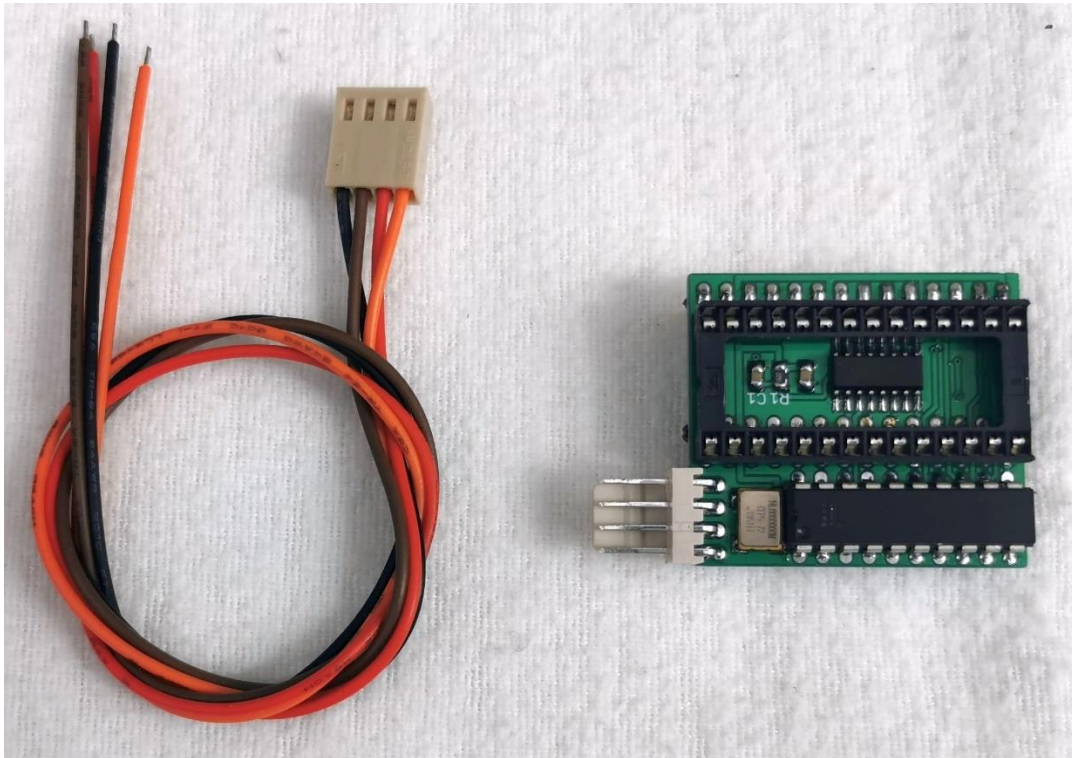
This card enables the usage of two different TOS versions made for the 1040 STE. Most recommended is the usage of TOS 1.62 and TOS 2.06, but you can choose which versions you want, as long they work at the \$E00000 address range. By holding down the RESET pushbutton for more than 1.2 seconds the active TOS version is switched. The current state is saved and restored after power-off.

A one-time-programmable PROM 27C4002 44 pin PLCC is included. You can get it empty/blank for own programming or let me know which TOS versions and language(s) you want programmed.

Download manual / instructions here:

<http://www.van-radecke.de/ST/DualTOSCardSTE.pdf>

1.44 MByte HD FDD Module



Manual / Instructions in: English

The HD module is used to enable your Atari ST to read and write HD (High Density) disks using 1.44 Mbyte capacity. This expansion can be installed in:

- All Atari 260 or 520 ST or STM computers
- All Atari 520 or 1040 STE, STF or STFM computers
- All Atari Mega ST computers

Installation requires soldering. The existing FDC WD1772 or similar must be desoldered, placed onto this expansion and the whole PCB placed where the FDC was before. Three wires must be soldered, a 4th wire is for the B: drive (mostly externally used and only if it's a HD drive).

To use this module you may need to have two things already:

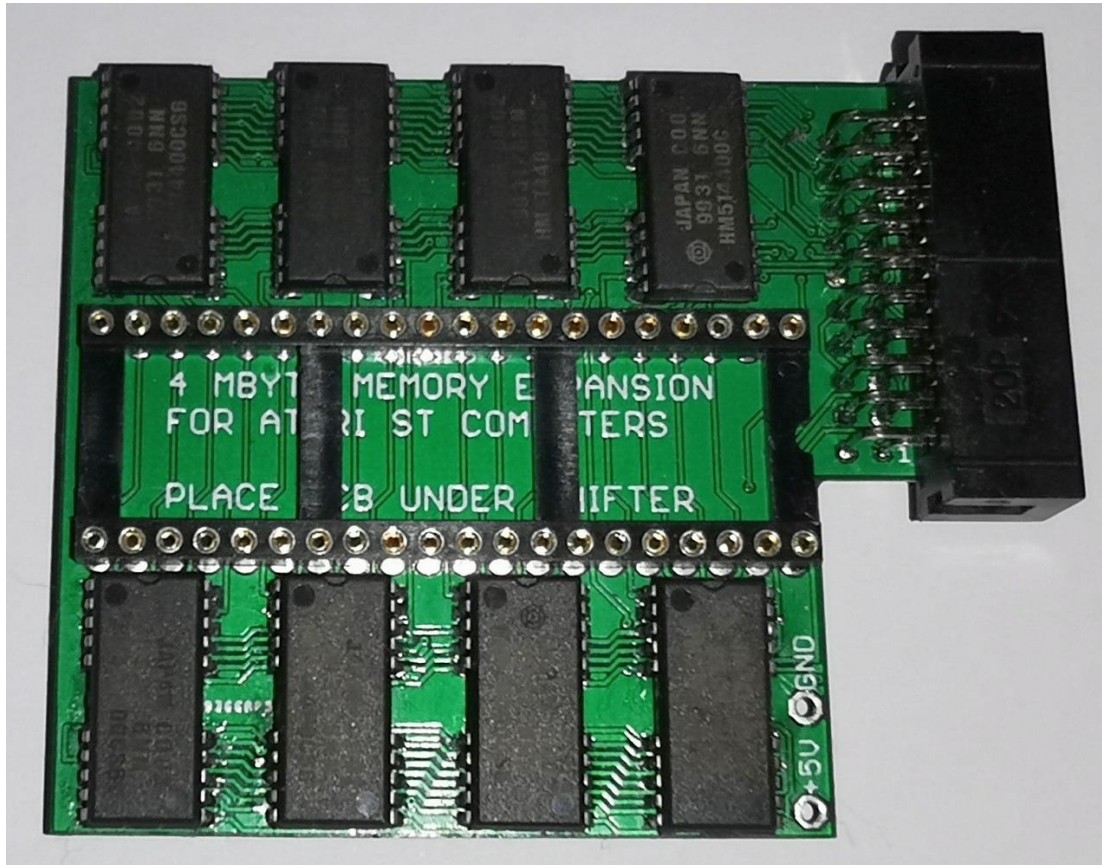
- A FDC which is running stable at 16 MHz (VL1772 or WD1772-02-02 for example runs good, the WD1772-00-02 or -00-00 don't work with 16 MHz)
- A 3.5" disk drive which is capable of handling HD and DD disks, automatic switching the modes and signalling a low at pin 2 for DD and a high for HD

My solution can control two disk drives (also mixed, one HD-ready, the other not, or two HD drives, or two DD drives), automatically generates the needed 3ms step pulse (no software patch or tool in the AUTO folder needed) and also corrects the media change detection problem with all non-Atari-made disk drives.

Download manual / instructions here:

<http://www.van-radecke.de/ST/HDMModule.pdf>

4 MB Memory Expansion for the ST



Manual / Instructions in: English

Expanding the STs memory to the standard maximum of 4 MByte RAM now is easy to do and, more important, safe to do. No piggy-pack solutions or clamps for the +30 years old MMU PLCC socket. Just remove the (mostly in a socket found) Shifter Chip, plug my board in, place the Shifter on the new socket above and solder some wires. That's all. This expansion can be installed in:

- All Atari 260 or 520 ST or STM computers
- All Atari 520 or 1040 STF or STFM computers
- All Atari Mega ST computers

Installation requires soldering. Except in the Mega ST family the shifter installed in all 260/520 or 1040 STs is in an extra metal cage. The top cover of this cage must be removed to install the 4 MB memory expansion. A crimped IDC 20 pin cable with header connector is included.

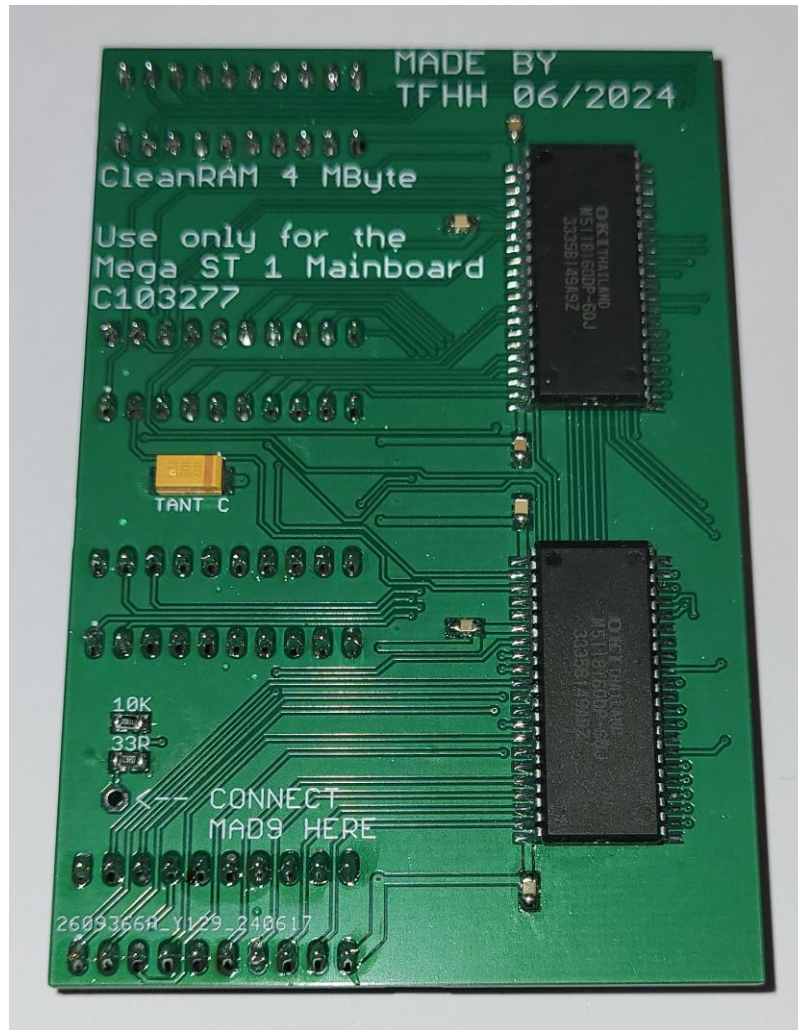
The manual will describe the solder points to grab the needed signals for the most common PCB revisions. Existing memory on the mainboard must not be removed, but will be disabled. My manual explains how to disable it.

The 4 MB memory expansion uses two banks with 2 MByte each. If wanted in any case, only the first bank could be used, there's a special activation pin for the 2nd bank. If this special signal is not tied to ground, only the 1st bank is used.

Download manual / instructions here:

<http://www.van-radecke.de/ST/ST4MB.pdf>

CleanRAM 4 MB for the Mega ST 1 (C103277)



Manual / Instructions in: English

Welcome to the first expansion of my new “CleanRAM” series. This one expands your Mega ST 1 to a 4 MByte Mega ST. The needed four turned-pin precision IC sockets are included.

Installation requires soldering. This expansion fits ONLY in the Mega ST 1 with the mainboard version (marking) C103277. As I know, this is the only version using THT DRAM chips, the other version has SMD RAM chips. CleanRAM Mega ST 1 will only fit in the THT DRAM version.

The CleanRAM expansions stands for the cleanest and neatest possible installation, which don't require heavy mod to the system. No scratching of traces, no spaghetti wires, no special parts. Just desolder some chips, insert the included sockets, place the expansion into the free sockets and solder one simple wire. Looks good, works perfect. You can leave all shieldings as they are.

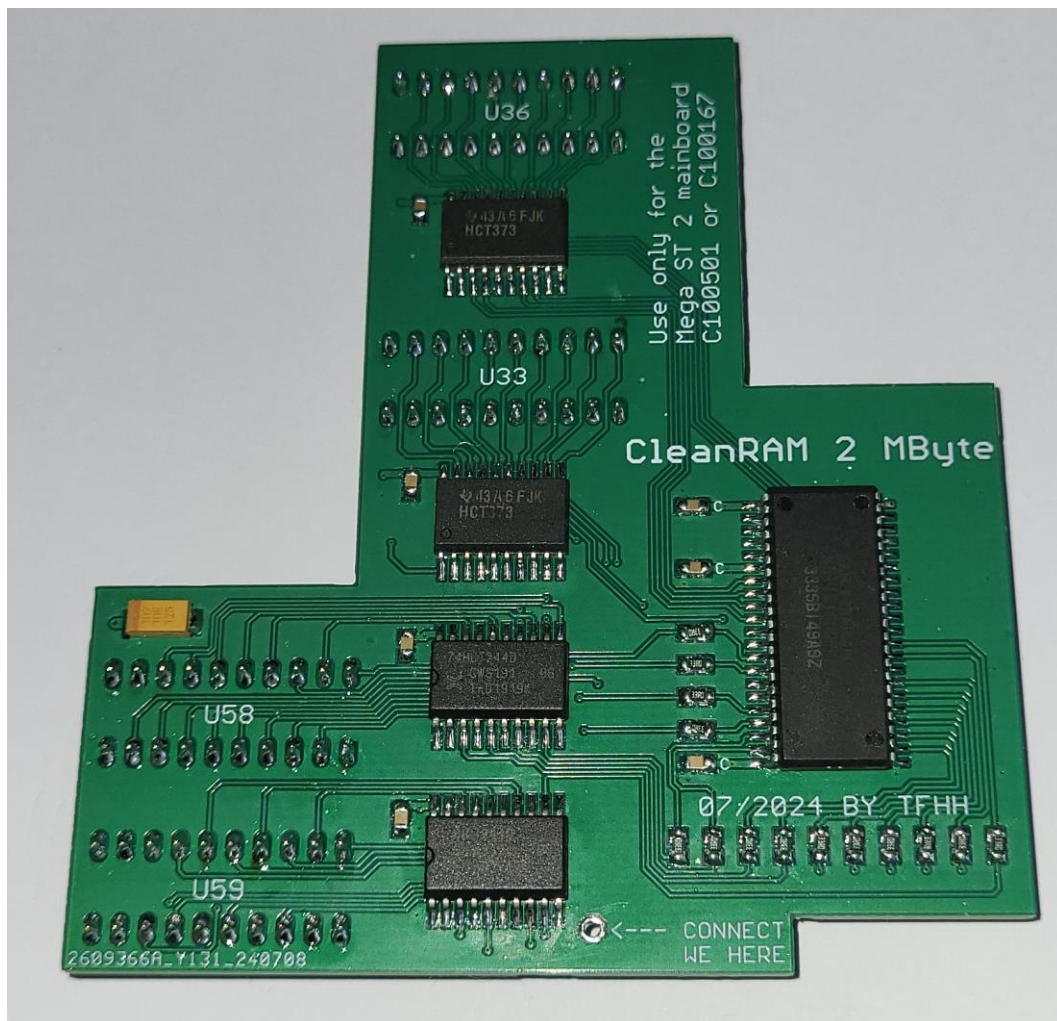
Please read the linked installation guide below, you will find all details there.

Download manual / instructions here:

http://www.van-radecke.de/ST/CleanRAM_Mega_ST_1.pdf

CleanRAM 2 MB for the Mega ST 2

For use with mainboard version C100501 or C100167!



Manual / Instructions in: English

This is the second expansion of my new “CleanRAM” series. This one expands your Mega ST 2 to a 4 MByte Mega ST. The needed four turned-pin precision IC sockets are included.

Installation requires soldering. This expansion fits in the Mega ST 2 with the mainboard version (marking) C100501 or C100167.

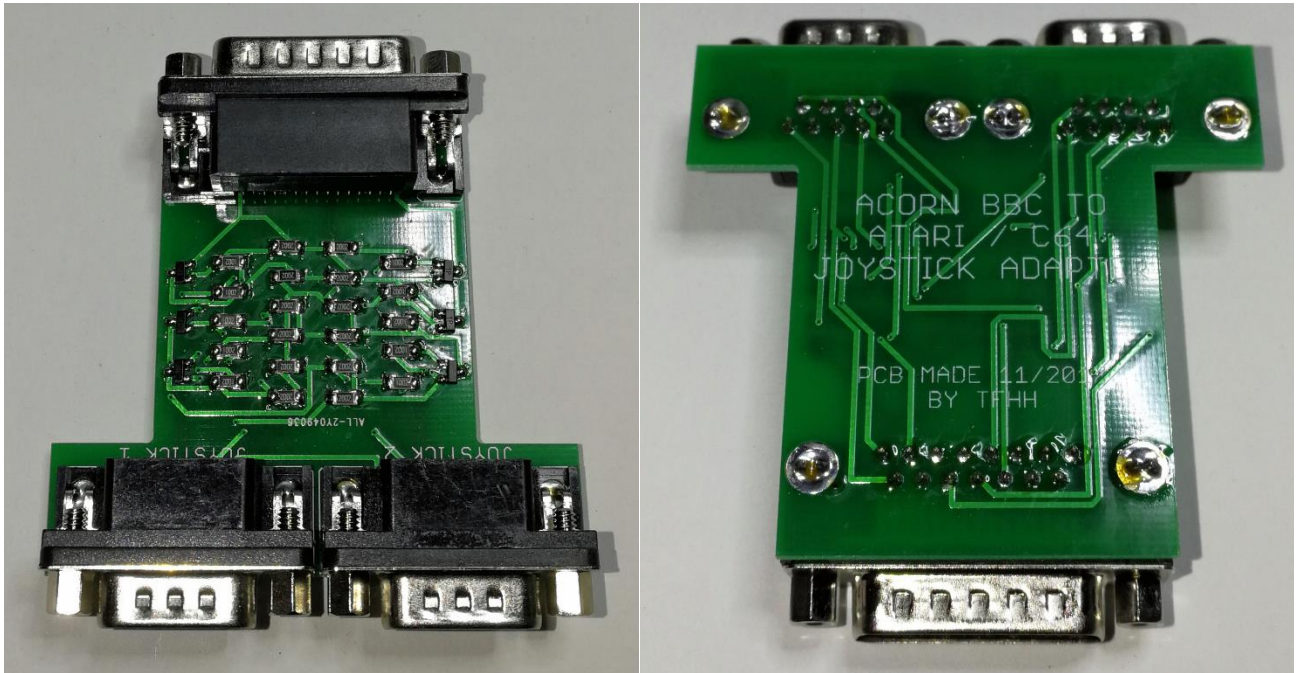
The CleanRAM expansions stands for the cleanest and neatest possible installation, which don't require heavy mod to the system. No scratching of traces, no spaghetti wires, no special parts. Just desolder some chips, insert the included sockets, place the expansion into the free sockets and solder one simple wire. Looks good, works perfect. You can leave all shieldings as they are.

Please read the linked installation guide below, you will find all details there.

Download manual / instructions here:

http://www.van-radecke.de/ST/CleanRAM_Mega_ST_2.pdf

Acorn BBC Dual Joystick Adapter



Manual / Instructions: Not needed

Attention: Not for Atari computers! :-)

This is an adapter for the Acorn BBC series, a MOS 6512 based home computer made in the 80s by the british company Acorn (maybe you know later computers called „Archimedes“ from that company, the first RiSC-machines for the private user!).

You must use special analogue joysticks with a 15 pin SUB-D connector. These joysticks – in a working shape – are hard to get and mostly very expensive – when they´re offered in a good working condition.

With this adapter you can use standard joysticks used for the Atari computers or the C64 and connect them to your Acorn. You get two joystick ports, although not all games support two joysticks. Generally not all unpatched games will support the digital Atari/C64 like joysticks. And even fewer supports two joysticks. But at the usual places you will find patched / hacked versions of the common games, of course.