

# SHIFT838 newsletter

by Chris Schneider



shift838.99er.net

**APRIL 29 2017**

**FEST WEST 2017 SPECIAL EDITION**

This newsletter is dedicated to the ongoing support for the Texas Instruments TI-99/4A and Myarc Geneve 9640 user community and is published by SHIFT838.

## **Welcome to the TI FEST WEST 2017 Special Edition of the SHIFT838 Newsletter!**

### **TI Fest West 2017 - April 29, 2017**

TI Fest West 2017 is here! If you are attending TI FEST WEST 2017 then welcome!

A special thanks goes out from the entire TI community to all the sponsors that helped put together a successful TI Fest West 2017.

## *Fest West 2017 Sponsors*

MATTHEW180  
LEE STEWART  
OMEGA  
SHIFT838

JEDIMATT42  
BOB CARMANY  
TURSI  
SPARKDRUMMER  
TI99IUC

ARCADESHOPPER  
COD3M4ST4  
RALPHB  
SCHMITZI



made a suggestion for publishing a SHIFT838 **TI FEST WEST 2017 Special**

**Edition** newsletter. Luckily I was able to carve out some time to accomplish this. For updates to what happened at TI Fest West 2017 please go to Omegas Fest West 2017 You Tube Channel and AtariAge Fest West 2017 message thread:

YouTube Channel:

[https://www.youtube.com/playlist?list=PLshIznEcyXK6Iz39WcXkq\\_ztm-7p95eUt](https://www.youtube.com/playlist?list=PLshIznEcyXK6Iz39WcXkq_ztm-7p95eUt)

AtariAge Thread:

<http://atariage.com/forums/topic/260465-fest-west-2017/#entry3659980>

In this edition will be articles surrounding the FlashROM99, FinalGROM99 cartridge (currently in development), TI-99 USB KEYS, USB Keyboard for the Geneve 9640, 32k Sideport Memory expansion, a TI-99/4A clone currently in development and some cool updates on programs with the UberGROM cartridge.

If you have not subscribed to the newsletter yet please go to the below link to subscribe. This is the first newsletter edition that I have sent out via the new site, hosted by 99er.net!

If you have not yet subscribed to the newsletter, follow the links below to register:

For the Italian version: <http://www.ti99iuc.it/web/go?TE27BR>

For the English version: <http://shift838.99er.net>

I have been working with **Ciro Barile** so that the newsletter can be released at the same time in Italian for the Italian TI users. If you have not visited his site please do so at <http://www.ti99iuc.it> .Ciro also created many of the COOL graphics used in my PDF newsletters!

The amount of support our little machine continues to bring amazes me. I know of a few new TI'ers that have started building their systems and it almost always is because they have found the AtariAge TI forum by doing a web search.

# Yearly Highlights

## Ralph Benzinger's FlashROM99 and FinalGROM99

Ralph Benzinger is actively working on his new FinalGrom99 cartridge project. Now let us go into a brief overview of each.

### FlashROM99

The FlashROM 99 supports ROM-only images of up to 32K that use the write-to->60xx bank switching scheme. It will not work with programs using GROMs or CRU-based bank switching. The cartridge does not require the Peripheral Expansion Box and runs on both PAL and NTSC consoles.

The FlashROM 99 cartridge is compatible with all cartridge dumps that use a compatible banking scheme. However, there are a handful of programs that expect to be started by the TI boot menu screen and may have issues with remnants of previously ran programs and could cause graphical anomalies or other unexpected behaviors.

One key factor to remember is that the FR99 uses '**non-inverted**' binary cartridge images to be seen by the system and displayed on the menu. A user can convert an '**inverted**' cartridge image with a simple python script.

More information can be found : <https://endlos99.github.io/flashrom99/>

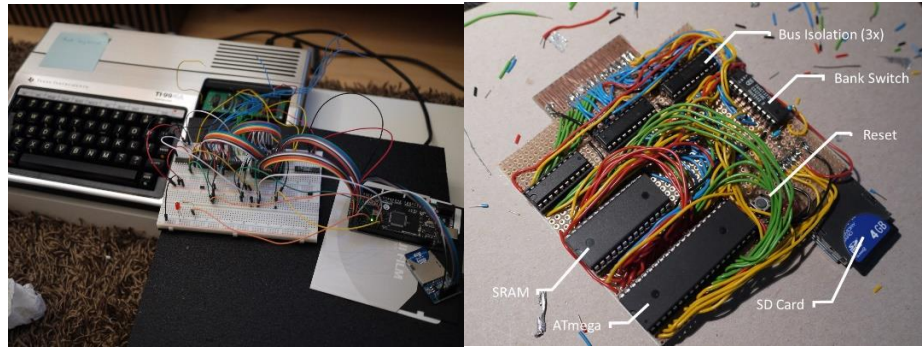
### Ease of Use

The following is from my personal experience. The FlashROM 99 is super easy to use. It accepts any class 4 SD and SDHC cards and I personally have not found one that would not work. These are cheap and easy to find. The FR99 will let you have 171 files on a single SD card. Now thats a lot of cartridges on one cartridge!

All one needs to do is drop the **non-inverted** cartridge binaries on the SD card and it's ready.

I wanted to get Ralph's take on some questions that I though the community would enjoy.

First off, here is a couple of pictures of the original FR99 prototypes.



[SHIFT838]

What was your main drive for creating the FlashROM99 (FR99) cartridge?

[Ralph]

My knowledge about hardware was actually quite limited at that time. I had built a small Z80 computer on a breadboard and was now looking for a more challenging project. It should be of practical use, so I decided to build something for the TI 99, my first home computer that would simplify the integration of the old computer into the modern world. A lot of other systems already had Flash Carts, but the TI didn't, so I decided to build a Flash Cart for the TI, without ever looking at one of the other carts.

[SHIFT838]

How long did you spend on researching how the TI-99/4A architecture worked before actually attempting to create a prototype board?

[Ralph]

To be honest, I didn't do upfront research at all. I knew some things like assembly from back in the day, and others like bank switching from having read AtariAge for about one year. So I just went ahead, looking for answers to problems as they popped up. I did a lot of systems research with MESS and its debugger, and found other things on Thierry's site or AtariAge.

For the modern components, in particular the microcontroller, I perused the datasheets and occasionally asked a question on mikrocontroller.net, which is a German forum for, well, microcontrollers.

I think it's more important to just get started and try out different things than to design the entire system and then implement it.

[SHIFT838]

How many revisions did you have to create before the final production model?

I started with a breadboard to see if my basic ideas would work: loading the SRAM while the TI was running, running programs from the SRAM, bank switching with a register, and even sending data from the TI to somewhere else. But at some point my contraption became too unwieldy, so I decided to start to solder.

First, I spent quite some time looking for a protoboard with connectors on one side that would match the TI cart port. But then I started to build my prototype with all the parts of the later cartridge, and lots of wire. The prototype grew step by step, and often enough, my latest addition wouldn't work, so I had to start guessing and testing why it didn't.

When the prototype was complete, I had professional PCBs made. The first batch I got worked perfectly, so I kept that design for all later runs. (Technically, there is Rev.1, 1b, and 2, but their differences aren't actually in use.)

[SHIFT838]

What was your most difficult hurdle to overcome for the FR99 and how did you resolve it?

[Ralph]

The development was actually quite smooth, without any major stumbling blocks. Upfront, I did evaluate a lot of different ways to load the image into the RAM. You cannot do this while the TI is accessing the cartridge, so I wondered if I should load the RAM outside the TI (which would have required a battery), or if I can use the bus idle periods to sneak a byte or two into the RAM, repeatedly. In the end, I came up with the 541 ICs, at the cost of doubling the amount of ICs on the cart.

And, of course, I must also mention the 1 nF cap disaster. After I've been shipping carts for some while, Kevan (Omega on AtariAge) noticed that the cart couldn't write to disk. This came as a surprise, as I didn't have such problems on my machine. As more and more people complained, I looked at the issue and, after some time, found an amazing mishap. I goofed up on the cap-resistor circuit I copied from the early multi carts and introduced a delay on the bus instead of the bank switch, thus explaining the bad writes. But if I corrected the cap-resistor circuit, the cart wouldn't work at all! After some consultation with Stuart, it was decided simply to remove the capacitor, and everything just worked fine from there on. (The full story is also on AtariAge.)

[SHIFT838]

How many FR99 cartridges have been released into the community?

I can only guess. Myself, I sold about 220 cartridges, both assembled and as a kit. Add to that the ones that Greg has sold on Arcadeshipper.com, and those of the "rogue" seller on ebay.co.uk, who started to sell FlashROMs without my knowledge. Finally, there are people who built their own cart with their own parts, so it's hard to know how many there are.

[SHIFT838]

With the future release of the FinalGrom99 do you foresee the FR99 to become obsolete?

[Ralph]

Mostly yes, but the FlashROM has one big advantage over the FinalGROM – you can easily build it yourself. Its design is also easier to understand, so it's a simpler starting point for people who want to tinker with the cartridge and maybe adapt it to their needs.

[SHIFT838] **Summary**

This is from own personal experience with the FR99. I myself purchased a kit from Ralph as he was pressed for time putting together the ordered cartridges together for fellow TI'ers and he agreed to provide me a Kit for me to put together but he would program the ATmega chip for me. The kit provided was very easy to put together with his detailed instructions. The FinalROM99, which is one of 2 cartridges that are my primary uses. Extended Basic Suite 2.7 is the other.

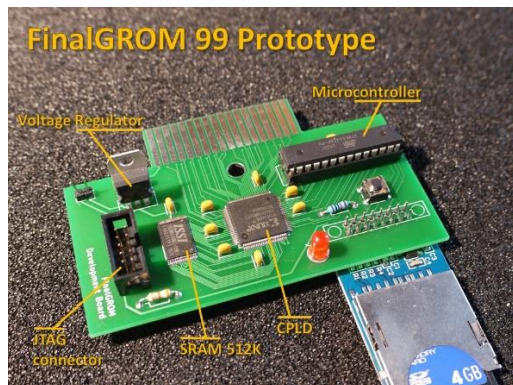
For a TI'er that wants to run the assortments of cartridges such as games then this cartridge is really all he/she would ever need. The easy access to SD cards allows one to have multiple SD cards if the user wants to have one for games and one for applications/utilities. But with 171 options on a single SD card I would think that would be plenty, but I am sure there are TI'ers that have had that or even had to clear off a couple to get a new one to show up within the menu.

I personally think this development has changed the way developers can look at cartridge designs with TI interfacing. It shows the ingenuity and dedication that our TI hardware developers possess.

When this cartridge was released many of us, including myself, were amazed at the concept of so many cartridges at our fingertips and yet on a removable SD card that could be manipulated via a PC system.



None of us thought it could get any better than the FR99. Then low and behold Ralph announces the NEW FlashGROM99! WHAT!



The FlashGROM99 cartridge sounds like it will be the be-all cartridge for all TI'ers to be able to load ROM and GROM images alike. Ralph has enabled the use of folders to allow for more image files to be stored on a single SD Card!

Improvements:

ROM and GROM images

1024K of RAM installed for 128 banks of 8k

GROMS use the upper 8 banks 120-127 are reserved.

5 GROMS in banks 123 – 127 are used.

Folder Support

Use of raw cartridge dump files

Besides the obvious GROM support. My brain keyed on the upgraded RAM and the use of folders on the SD card. There are still 171 file limit, but that's within each folder. So you can get a hierarchal type view. This means you could have 171 directories at the root, then up to 171 files in each of those directories, or even directories within directories.

This reminded me of the latest 9640 Boot program that Insane Multitasker released as it would allow for '**chaining**' of menus. This folder options for the FG99 seems to be the same concept. This is a great option in my opinion. So as you can see it could be as big or as small as you want it. I am sure the more directories/files that are on the SD card will determine how long the cartridge takes to load the menu, so please keep that in mind.

Read the below thread for a lot more detailed information:

<http://atariage.com/forums/topic/260917-the-finalgrom-99/>

In the below photo Ralph is using the FlashROM99 to help debug the new FinalGROM99! That's a great use of his original '**Flagship**' cartridge to help produce the FG99.





### **FinalGrom99:**

[[SHIFT838](#)]

What was your main drive for creating the FinalGROM99 (FG99) cartridge?

[[Ralph](#)]

The biggest shortcoming of the FlashROM, although an excusable one, is the lack of GROM support. Everybody I showed the FlashROM asked me: "But will it run GROM programs?" And I agree, a Flash Cart for the TI should be able to handle GROMs, so I considered the FlashROM incomplete.

The FinalGROM, as I was planning it, also allowed me to learn more about programmable logic, i.e., CPLDs and FPGAs, which I had been curious about for years.

[[SHIFT838](#)]

If you had to estimate, how much time have you spent developing this cartridge?

[[Ralph](#)]

That is really hard to estimate. Fortunately, I could reuse some parts of the FlashROM, especially the menu system. For the remaining parts I probably spent around 300 hours, all the research and learning included.

[[SHIFT838](#)]

When do you expect a final production version of the FG99 will be released?

[[Ralph](#)]

Well, I've been asked this a lot lately. I've just sent my final designs off to production for some sample boards. This usually takes between 2 to 4 weeks. If those samples work, i.e., all parts have been placed correctly, I can put in a large order.

[[SHIFT838](#)]

When released, will there be a prebuilt and DIY kits?

I won't offer kits this time, because I cannot preprogram anything. This raises the hurdles for DIY, so I don't think there is a lot of demand. But, of course, you can still build everything yourself, as all parts are Open Source and will be published later.

[[SHIFT838](#)]

What was your most difficult hurdle to date to overcome for the FG99 and how did you resolve it?

[[Ralph](#)]

The biggest problem was certainly the instability problems I had with the first prototype. I posted about this issue on AtariAge, but basically my cart would return wrong RAM values once in a while.

Fellow AtariAger '**speccy**' (his real name is Eric) from Finland was kind enough to look at this issue with his logic analyzer. After some puzzling, he found the reason for the bad values, but not the root cause. In the end, this point was moot, as the second prototype, which uses a different voltage regulator and SRAM, did not show any issues.

But I do have to thank Eric for pointing out that one power pin of the microcontroller wasn't connected. This was probably the biggest blunder I did with the FinalGROM so far.

[[SHIFT838](#)]

In your opinion what is a couple of key improvements you have implemented for the FG99 over the FR99 cartridge (besides the obvious GROM support)?

What I like most about the new cart is that the amount of RAM is increased to 1024 KB. This corresponds to 32 FlashROMs and is twice as large as the largest image file currently known (not counting collections).

Another improvement that helps a lot is the folder support that allows you to store more than 171 images on an SD card and organized your images. You can nest folders as long as the total length of the path is less than 120 characters.

[[SHIFT838](#)]

Is there room for future improvements that could be implemented via FLASHING?

[[Ralph](#)]

The FinalGROM can update both the microcontroller firmware and the CPLD firmware with update files stored on an SD card. This is mostly meant for bug fixes, but if a new great feature comes up, everybody can install it in their FinalGROM without the need for any kind of tools.

Personally, I'm quite happy with the FinalGROM as it is right now, but the community always has amazing ideas, so if something is nice to have and reasonable to implement, we should talk!

[[SHIFT838](#)] Summary

I myself cannot state personal experiences (YET) with the FG99 cartridge. However, with all the post and questions answered I believe the FG99 cartridge could be many TI'ers "Ultimate Final Solution" for their cartridge needs. Some users like myself will still utilize other cartridges for new functionality or expandability that the FG99 does not offer like the UberGROM cartridge. But I do see the FG99 cartridge to stay permanently plugged into one of my cartridge expansion ports.

This is just yet another TI hardware project that proves the TI is still one of the most supported and loved computers for retro-computer enthusiast at almost 40 years later. I am always amazed at the new hardware and software that keeps getting released for the TI. This is one of the reasons I have never left the TI community.

LONG LIVE THE TI!



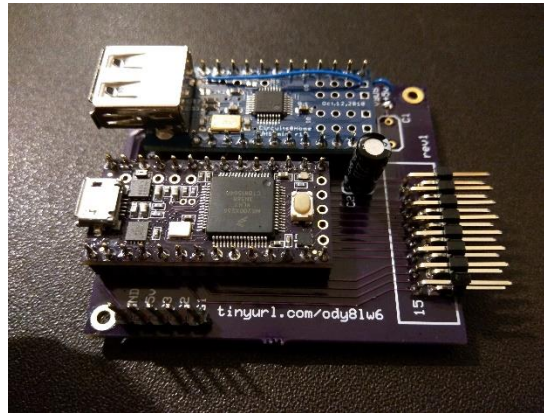
# JediMatt42 (Matthew Splett) Projects

JediMatt42 (Matthew) has released a few projects recently for all of us TI'ers to take advantage of. The ones that will be highlighted will be his TI-99 USB Keys, Geneve USB Keys and 32k sidecar memory expansion.

To read up on all JediMatt42 projects then visit the below link:

<http://ti994a.cwfk.net/index.html>

## TI-99 USB Keys



The TI-99 USB Keys adapter is built on open source hardware which makes it very easy to obtain. The end result is being able to hook up a USB keyboard to the TI and having every key mapped correctly. Now a user does not have to replace the TI keyboard to use the USB keyboard, they will both work at the same time.

The unit firmware is easily updated when Matthew has released various updates and is documented on his site.

Matthew has also made the PCB design files open for the public to be able to order at will.

[https://oshpark.com/shared\\_projects/tlkbFvs3](https://oshpark.com/shared_projects/tlkbFvs3)

I have ordered a few and built them within the last few weeks for myself and a fellow TI'er (Bill Sullivan). I highly recommend them.

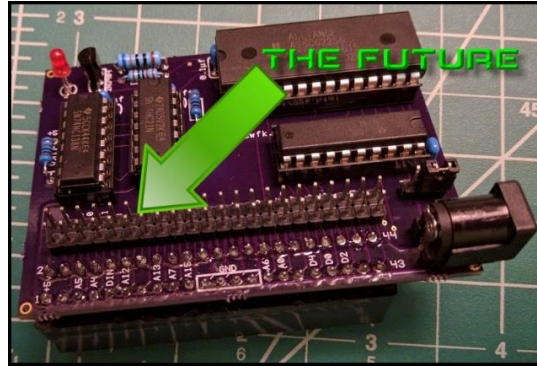
## Geneve 9640 USB Keys

The USB keyboard adapter for the Geneve 9640 is the same exact adapter used for the TI-99 with the one exception of software. Matthew had to update the software and change a few areas for the Geneve to see it. Matthew basically had to rewrite sections of the software for specific pins related to the Geneve, but the hardware is the same. He used pin G3 for the XT\_CLK signal, and G2 for the XT\_DATA signal. Power and ground are also from the XT 5 pin din port on the Geneve 9640.

Talk about reusing existing projects. My job would be proud of Matthew! We are always told to use existing technologies if we can to save money.

If you have ever been itching for a 104 key keyboard, this one is for you. Since it is open source hardware and code and you can make it yourself there is no waiting around for one of those Rave99 keyboards to pop up for sale.

## TI-99/4A Sideport 32k Memory Expansion



This little project is something many TI'ers have been longing for. Most TI'ers do not feel comfortable doing an internal 32k memory upgrade due to the soldering of the TMS9900. I myself have almost hosed a TI doing it. Luckily I was able to save it after pulling the rest of my hair out.

Many of the programs out there require a 32k memory expansion to run. With the UberGROM cartridge and others that can house these types of cartridge programs you can now run the programs without issue utilizing this piece of expanded hardware.

The module is equivalent to the standard stock TI 32k expansion card but plugs into the side port of the TI-99/4A. The unit does require power, which can be supplied via internal or external. Power configuration is selectable by an onboard jumper. If being used with a speech synthesizer please remember the speech unit does not pass power and a modification will have to be done if selecting internal power. This is a simple modification for 1 soldered wire to pass power on the speech unit and well worth the 5 minutes to do in my opinion than rather have yet another power cord.

Matthew provided some more Q&A to me for his projects and below are the responses.

[[SHIFT838](#)]

What made you want to develop these items?

[[Matthew](#)]

I started designing the TI-99 USB Keys in my head right after I ordered a TI-99/4A off e-bay in the summer of 2015. I had been causing damage around the house and threatening to do more with Arduino based devices. I saw that Tursi had built the PS/2 keyboard adapter with an AVR chip and thought a USB version of that would be great. 1st, because I had to fit the TI on a desk with a PC, Mac and Raspberry PI. 2nd, because when I was about 15/16 I started taking a typing class, and my Father was smart enough to by me a Rave99 XT keyboard kit so I wouldn't learn it wrong on from practicing on the 4A keyboard.

However the real drive to get it done happened right after I had picked up a PEB. Now I've got a 4A, and can save something to disk. After a weekend of typing on the 4A keyboard, habits from childhood came right back to muscle memory (obviously I had already learned to type 'wrong'). I was back at work Monday morning, pair programming with another engineer, and I'm sitting there hitting ALT-S trying to backspace. It just doesn't work. But after spending all weekend using FCTN-S like I was 10 again, it was just a little awkward. So, now I was determined. I needed this device.

Later, I acquired a Geneve, and boy, that keyboard is huge. There just isn't room for it. So again, I needed this device for space reasons. And, I learned how the XT keyboard protocol worked along the way. Learning is the sort of thing that drives me.

Which brings us to the 32k sideport memory card. This was a stepping stone project for me. I admit I felt a little bit bad that the NanoPebbs were off the market at the time that the FlashROM99 came out, since I went a little nuts converting EA5 programs to run off of it using the Classic99 feature for creating a cartridge loader. Ralph advertised the FlashROM99 as not requiring any expansion. And for quite a large library of releases, it certainly doesn't. But then people started getting confused that images for it required 32k expansion ram. I had taken for granted my own notion that if you are going to TI, you are going to get a fully loaded TI. People were asking more about the internal memory options. But through it, I could hear that people didn't want to mod their 4As. Some people are afraid of a screw-driver, let alone a soldering iron. I can't relate, but I can empathize. So here, I have no need myself for another 32k board, but combine it with a FlashROM99 and so much great software becomes available to what seems like the majority (really difficult to tell) of the 4A owners out there.

And I really wanted to crack that expansion bus. I have always admired the expandability of the TI-99/4A. It was literally designed from the beginning to have a future with unimaginable peripherals.

[SHIFT838]

How do you think it has presently changed the TI Community?

[Matthew]

I believe there are only 2 people besides myself using the keyboard adapters. But had I not done the work with the keyboard adapter, I wouldn't have been prepared for the 32k project.

Now, the 32k project has delivered more 70 units, to probably 60 people. I witnessed firsthand, people at Portland Retro Gaming Expo, with one of the new cartridge titles that had been released in the last couple years, or one of the Gazoo multi-carts, and being surprised again that these carts required 32k expansion ram. If they just had a 4A console in their youth, or they are a multi-system collector, the idea of needing a PEB is not intuitive. So my hope, is that 30 of those people who bought 32k boards are experiencing some of the 4A's best wares for the 1st time.

[SHIFT838]

How do you think it will change the TI Community in the future?

[Matthew]

The keyboards will make no impact. They didn't back in the 80s. They won't today either. People like the built in keyboards of a retro computer console. The all in one nature of it is elegant. But, my design is available, and for those of us that touch type all day long, I hope it keeps someone from getting frustrated with that old keyboard.

The Geneve keyboard adapter should actually work on any XT keyboard based computer. Maybe someone in China will take my code and put it on a tiny adapter we can all buy off eBay. At the time, there were only expensive solutions.

Now, I have high hopes for the 32k sideport card. Edge card connectors are a blight. Hopefully with the stackable header connectors for an expansion bus, others will pick up a breadboard and try something great!

Hopefully more folks will crack open the programming info so abundantly available, and write some new software. Using gcc to write 32k, EA5, FlashRom99 loadable cartridge images is really about the easiest way to write software for the TI. I'm still here. It didn't kill me, and I learned all the parts I needed to lay the ground work for my next project. Now, in the next project, I'm learning Python, Verilog, and our favorite assembly language. I am so excited.

Oh, and NanoPEBs are back in production. Coincidence? Or did the 32k board awaken our market? We'll never know... But choice is one of the things about the TI-99/4A can really help keep something alive.

### [SHIFT838] Summary

The 32k expansion port on Matthews's side port memory expansion will allow for easy expansion of a current TI system. Especially with the side port edge card adapters getting harder to find. I can see other hardware developers to adapt this type of design and this further enforces TI's future is still going to be active for years to come.

## TI-99/4A Clone using TMS99105 CPU

Article by **Ciro (ti99iuc)**



Erik Pehl has developed a device that allows a user to have a CLONE of the TI-99/4A using the TMS99105 processor and a Pepino FPGA board with XC6SLX9 chip.

In this clone the CPU of the TI-99 will have a speed of 20MHz and you can have one with all the software compatibility. It has a VGA output and can be connected to any VGA monitor. The unit also has two PS2 connectors for keyboard input. The clone performs as a TI-99/4A using a real CPU.

In the future it could very well be also implemented use as TI-99/8 or even a TI-99/2, but for now there are only suppositions. For more info:

<https://hackaday.io/project/15430-rc201699-ti-994a-clone-using-tms99105-cpu>

**TI**  **STARTER**  
Hardware

Quite a few TI'ers have come to know and love the UberGROM cartridge. Some cool new experiments have yielded some great results and will eventually help many

Ti's be able to get online and even transfer files via HDX and the UberGROM.

Fred Kaal and Insane Multitasker have come together to experiment utilizing the built in UART on the UberGROM to transfer files between the PC via HDX and connect to BBS'.

Fred has been working on updating his CFHDX program and has named it... C'mon can you guess?

### UberHdx

```
SRC: DSK1.
DST:
VOL : DATA      Size: 24614603
FREE: 10172979   Used: 14441624
-----
C NAME          Size  Type      P
-----
TPIUC           1    PROGRAM  U FILES
UBERHDX1        32    PROGRAM  U 197
UBERHDX2        32    PROGRAM  U Dirs
UBERHDX3        18    PROGRAM  U 6
UBERHDX4        80    PROGRAM  U Used
VDP_A          25    DIS/VAR  80 U 23111
VENUS          25    PROGRAM  U
W-BODDIE       25    PROGRAM  U SELECT
WIENER         37    PROGRAM  U 0
WORK           0     SUBDIR   U TSECT
WRDVS0         1     PROGRAM  U 0
XBL            5     PROGRAM  UU
-----
EXECUTE UBERHDX1? ([Y],N) _
```

The requirements of course are more than a stock system to transfer files. A user must have 32k memory expansion and a system that supports disk access such as a PEB, NanoPEB or CF7+.

Insane Multitasker was wondering if something like CfHdxS1 was possible using the UberGROM cartridge and YES ... it is!

Fred has created low level routines for the UberGROM UART to be used together with the HDX DSR. Fred has also coded the UberHdx program with this DSR embedded within the program.

The UberHdx program, like the CfHdx programs, is derived from the Dm2k program and has almost the same functionality:

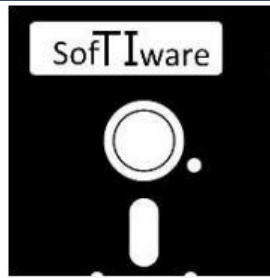
T / ctrl-T View files view files in 40/80 columns  
B / ctrl-B View binary files in 40/80 columns  
R Rename file  
A Select / U unselect all files

fctn-6 execute file operation  
C copy, M move, D delete P protect U unprotect files

X to load and execute a program file

This program can be used on a Ti99/4A with an UberGROM (of course) and only 32Kb RAM expansion or a CF7A+ or nanoPEB.

Because UberGROM uses the same program code as CfHdxS1 and CfHdxP1 a new version of these programs will be available soon too with the view file in 80 column mode and execute program file function.



### Insane Multitasker Updates:

1. Most programs written to use the serial port **9902** at a low level do not work with the **nanoPEB**. The solution is to ensure the DSR ROM is turned on before accessing the device. (Standard PEB cards do not require this step.)
2. **Midi Master 2.3** and **2.5Z** have been updated to work with the **nanoPEB** serial port. Programs have been released on AtariAge.

*Midi Master v2.3:*

[http://atariage.com/forums/index.php?app=core&module=attach&section=attach&attach\\_id=494938](http://atariage.com/forums/index.php?app=core&module=attach&section=attach&attach_id=494938)

*Midi Master v2.5Z*

<http://atariage.com/forums/topic/240729-midi-module-or-synthesizer-connected-to-the-ti-994a/page-3#entry3708024>

3. **TIMXT** now works with both the standard RS232 PEB cards and the **nanoPEB** serial port. Together with the **F18A**, one can connect to BBSs and other systems at speeds up to **38.4K**. No hardware handshaking required. Enhancements are released as time permits.

<http://atariage.com/forums/topic/259886-timxt-with-nanopeb-version-1/#entry3689694>

4. Both **Midi Master** and **TIMXT** have recently been modified to work with the **UberGROM** UART. With help and encouragement from **Tursi** and **Acadiel**, I successfully wrote low level routines that allow both programs to use the cartridge's on-board serial port. No additional RS232 cards or serial ports required! The only hardware addition is a \$2-\$10 TTL-to-RS232 converter.

**Midi Master** can send music to my Yamaha keyboard. The updated program was released on Atariage about a week ago.

*Midi Master v2.5Z for the UberGROM:*

<http://atariage.com/forums/topic/240729-midi-module-or-synthesizer-connected-to-the-ti-994a/page-4#entry3732246>

**TIMXT** can connect to Heatwave and other BBSs at speeds up to **57.6k**. I am still working through a few buffering requirements prior to a general test release.

### New Scott Adams Adventure Sequels

As many of you know Scott Adams has granted me rights to release sequels to any of his adventures. I have been talking with a couple of fellow TI'ers to help come up with some ideas. So I am hopeful that there will be a new adventure released soon. (relatively speaking).

If any other TI'er wants to get in on the Adventure action please contact me via private email. Any help is greatly appreciated!



## Calling All GAMERS!

# GAME OVER YOU GOT A HIGH SCORE ENTER YOUR INITIALS

Owen Brand (**Opry99er**) has started a TI Gaming competition on AtariAge where a TI-99/4A game is chosen every month and TI'ers can compete to see who can get the highest score. At the months end the person with the highest scores receives some type of prize.

If you want to read the message thread in its entirety and possibly participate in the friendly competition then click below:

<http://atariage.com/forums/topic/241547-official-ti-994a-hi-score-competition/page-1>

Please join me in congratulating the last few month's winners.

Month	Game Title	Winner (AtariAge User Names)	Score
February 2017	Bouncy	ArcadeShopper	10143
March 2017	Major Tom	Opry99er	O=97 ; T=141

April 2017 game is '**Hen House**'



The last edition Brain T.I.aser:

A **Palindrome** is a word that reads the same when spelled backwards and forwards.

A couple of examples are : **Level** and **Racecar**

How would the word "**Footstool**" be considered a palindrome?

The winner : **Lee Stewart**

Answer : Morse Code

When written in morse code, 'footstool' is displayed the same forwards and backwards

No teaser for this edition.

I also am still waiting for someone to find my Easter egg in my adventure, '**The Stafford Predicament**' that is used with the Adventure module. This adventure game can be downloaded off the FTP site, FuSiON BBS and soon will be offered on my website.



## Resources

### Contact information

To contact me please feel free to visit my website and click on the 'Contact' tab.

<http://shift838.99er.net>

### Newsletter Topics

If you would like to participate in the writing of this newsletter or provide any topics for this newsletter please contact me via my web site.

### Sites

There are a few of sites that I think should get their own list below. These are for the TI Hall of Fame and TI-99ers Unsung website. Please visit these below sites as both have great information.

<http://www.ti99hof.org/index.html>

<http://www.ti99ers.org/unsung/>

### Floppy Days

Randall Kindig's Floppy Days: A great resource for PODCASTERS to listen about information about old computer systems!

These are the links available for '**Floppy Days Podcast**' covering the TI-99/4A that have been done over the last year.

Episode #49 : <http://floppydays.libsyn.com/webpage/2015/11>

Episode #50: <http://floppydays.libsyn.com/webpage/2015/12>

Episode #51: <http://floppydays.libsyn.com/webpage/2016/01>

Episode #52: <http://floppydays.libsyn.com/webpage/2016/02>

Episode #56: <http://floppydays.libsyn.com/webpage/2016/03>

The main web site to Floppy Days:

<http://floppydays.libsyn.com/>

## Remembrance

Also the below site has a list of all the TI-99ers that have passed. Please be sure to check them out.

<http://ti99ers.org/modules/Inspire/remember.htm>

Below resources are just a handful of sites that support the TI-99/4A and/or Geneve 9640 computers. It is in no way a full list. This section will be included in all future newsletters. If there is a site that you think should be mentioned then please contact me.

## Web sites / FTP Sites

<http://shift838.99er.net>

<http://www.99er.net>

<http://www.ninerpedia.org/>

<ftp://ftp.whtech.com>

<http://www.ti99-geek.nl/>

<http://www.mainbyte.com>

<http://www.atariage.com>

<http://www.harmlesslion.com>

<http://www.ti99iuc.it>

<http://www.turboforth.net>

<http://www.ninerpedia.org/>

### **Yahoo List Groups:**

<https://groups.yahoo.com/neo/groups/TI99-4A/info>

<https://groups.yahoo.com/neo/groups/TI994A/info>

<https://groups.yahoo.com/neo/groups/Geneve9640/info>

<https://groups.yahoo.com/neo/groups/turboforth/info>

## Active BBS'

### FuSiON BBS

Access: Telnet

System: Emulated Geneve 9640 via MESS

Software: FuSiON BBS Software powered by S&T Assembly code

Location: Texas

Content: TI and Geneve file libraries, message bases. Full ANSI support, Text 40 and 80 Column modes and BBS E-mail.

Telnet to: **fusionbbs.ddns.net** port **9640**

### HeatWave BBS

Access: Telnet

System: Geneve 9640

Software: S&T BBS Software

Location: Houston

Content: TI and Geneve file libraries, message bases, door games and e-mail.

Telnet to: **heatwave.ddns.net** port **9640**

### The Hidden Reef

Access: Dial-Up

System: TI-99/4a Modified

Software: S&T BBS Software

Location: New York

Content: TI and Geneve file libraries, message bases, door games and e-mail.

Dialup : **718-448-9402 @ 8-N-1**

### The Keep

Access: HTTP and Telnet

System: Pentium 4 running Windows 2000

Software: Worldgroup BBS Software (up to 256 user connections)

Location: Tigard, Oregon

Content: TI and Geneve file libraries, message bases, door games, multi-user and multiplayer games and e-mail.

Telnet : [www.thekeep.net](http://www.thekeep.net) port **23** Web browser to <http://www.thekeep.net>

The Keep can now be connected to via telnet directly from the web page!

<http://web2.thekeep.net/telnetme.html>

The Keep has TI File libraries, Message bases, e-mail, door games, multi-user and multiplayer games. The keep also has a modem line connected for anyone that would like to contact The Hidden Reef BBS from the internet through The Keep.

Simply telnet to [www.thekeep.net](http://www.thekeep.net) on port 23, login to The KEEP and then type **/GO DIALOUT** at the main menu, then D1 to dial out to The Hidden Reef. It's that simple.

## Vendors

**SHIFT838** – Provides used TI equipment as acquired. Check with me often. A lot of the items need rehomming from other TI Users.

**Arcade Shopper** – Provides old and new TI equipment, upgrades and new runs of PCBs at [www.arcadeshopper.com](http://www.arcadeshopper.com)

**Hummingbird EPROMS** – Provides EPROM burning services for various TI/Geneve related EPROMS for original code and modified code. Contact Bob Carmany at [Rmcarmany@aol.com](mailto:Rmcarmany@aol.com) for pricing and availability.

## Repair Centers

### Richard Bell

Repairs available on limited basis, please contact Richard at [swim4home@verizon.net](mailto:swim4home@verizon.net) for wait-time before sending any repairs

### Tim

Myarc-related hardware repairs on a limited, as-available basis. Contact Tim at [insane\\_m@hotmail.com](mailto:insane_m@hotmail.com) for wait times or to request service.