

TI*TIMES

 **ISSUE 88** 
SPRING 2005

TI-99/4A User Group U.K.
Annual General Meeting 2
Saturday 4th June 2005.
Station Hotel, Newstead
Village, Notts.



20th International
TI - Treff.

16th, 17th, 18th September 2005.

Hotel Wilhelmina, Venlo, Netherlands.

RYANAIR.COM

Flights to the Treff are
£32 per person RE-
TURN!!!!
London Stanstead
To
Dusseldorf-Weeze



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Disclaimer

The Views expressed in this magazine
are those of the individual authors,
and not necessarily those of the editor
or the group!

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to drive true composite video output!!!!



FROM THE CHAIRMAN'S CHAIR

By T Stevens



Well spring is here and summer on its way. This means that the computer will take a bit of a back seat for most of you. However if you have a look at our web site www.ti99ug.co.uk you will find some of your club events. I have updated the site so that it reflects some of our new web links. One of the events, a Workshop, has

gone and has been removed from the website. This was a lovely little village hall in Oxfordshire, arranged by Francesco Lama.

We had a small turn out but we really enjoyed it. We went through the old BBS software in anticipation of the upgraded version which will run on a scsi card. We tried the old version but it could not get its head round it. I had a bit of a calamity, I turned on my Monitor and the silly thing failed. However all is not lost as I have a spare at home. This monitor has a TTL input so will work with a minor mod on any CUB or Microvitech unit. Just as thought if any of our members want a cub monitor I have a few in my garage. They are school reclaims which are going out around £10 plus carriage. If you want one then let me know on my email address of chairman@ti99ug.co.uk.

I have not had much time to do any real work with the TI for some time. However I now intend to write you a small article about print codes. I will sort this out for next time when I have had time to do the matrix lists.

I found this little gem on the net the other day I thought you might just like the read...

The TI has several special quirks to it. From its Speech Synthesizer to its Video Modulator, a truly special system is revealed. Perhaps I'm a bit biased,

being this was my first computer, but it may have helped shape what my future career will be. (That is, for all interested, working with/on computers. I'm a Computer Science major in college.)

The most unusual and interesting part of this computer is the Speech Synthesiser. It's amazing to hear good synthesized speech from a computer released in the early 1980's! Mainstream computing took quite some time to catch up. While some of this text-to-speech seems new, the TI was doing it already. Granted, the speech synthesizer could only say 300 words without help, but when you have a simple game that says "Oh no!" or maybe "Nice Shooting!" (Parsec) what do you need a big vocabulary for?

From a technical stand point, what was weird about the TI was the power supply provided AC current of two different voltages rather than conventional DC. Also, the video signal sent out from the system was unmixed, with separate Audio and Video (which new game systems are starting to use now) that was modulated to standard video. Thus, rather than using the name "RF Switch" (which was half the function), Texas Instruments used the more specific term "Video Modulator."

Another infamous quirk about the TI was this: The joysticks wouldn't move up if the Alpha Lock key was pressed. If you have ever played a game and not been able to move up, you probably have experienced this design quirk.

Joysticks

Two separate joysticks wired to one 9-pin DIN plug. It's difficult to tell the first one from the second (Note the blue tape in the photo.) These joysticks are some of the stiffest joysticks I've ever used, and I love them! :-). They give a feeling that you pressed the button, or moved the direction, without feeling fragile.

Atari 2600 joysticks feel fragile and loose next to these (and actually are). I have come to love the feel of the TI joysticks over the Atari 2600 joysticks, and

others do too. While it is possible to use Atari joysticks on the TI (with an adaptor cable), I believe it is best to use the TI joysticks... you may want to make an adaptor to use these on the Atari!

Video Modulator

This is one of the most often-broken peripherals on the TI994a. The problem lies in the cable to go from computer to TV. There are 5 conductors in that cable, and they don't take well to flexing. If any one of those conductors breaks, you lose either picture or sound (or both.) Treat the cable with respect, and the computer will happily keep displaying output and talking to you (speech synthesizer.)

If the cable breaks anyway, someone with basic soldering and electric skills can fix it. Skills needed are: The ability to make a good solder joint, and knowing how to use a continuity tester or multimeter. Simply figure out which wire is broken, and solder a new wire in the place of the old. Tape it to the original cable and you should be good to go.

To hook up the video modulator to a new TV, you will likely need a matching transformer. There are two forms of matching transformers you can get, one to go from two wire (300 ohm) to coaxial (75 ohm) and one to go from coaxial to two wire. You want the one that goes from two wire to coaxial. Often, this will have a "right angle" design. You'll need the other type if you want to hook up a coaxial input to the input on the side.

There are two switches that may be important. At the bottom (closest to the computer) of the video modulator there is a channel switch. Your TV must be set on the channel indicated for this to work with the computer. The other part is the RF switch. Moving the switch all the way up is for using the computer, moving it all the way down is for using the TV. If you're using the TV, the channel switch does not function.

Power Supplies (USA type)

There are two power supplies that were distributed with the TI 994/a. While both put out equal voltages, the big difference was where the electronics were located. One power supply was of the "Wall Wort" design, where the electronic part was located next to the outlet. (This is a common design.) The other had the electronics mounted about half-way between ends of the cable, and used a lot less space near the outlet. (If you've ever tried to plug two wall wort power supplies in to a single power strip, you immediately see the use for having the electronics elsewhere.)

Most computer power supplies change the power from 120 volts AC to 3 - 12 volts DC. The TI 994/a was different, however. It changed the voltage to a lower voltage AC (I think 14 and 18 volts, but don't quote me.) There was a safety adapter that TI released (I have a newspaper clipping of it somewhere) due to the fact that their power supply COULD (but had not as of the time of the article) harm someone. I believe my "middle of the cable" power supply has one of those adapters on it. **End**

Brings back a few memories!!! I had some cartridges which after some pulling in and out had the old contact problem. I just floated some more solder onto the tracks and we were away again for another 500 insertions. However the cartridge slot did show signs of wear.

Great interest, I have come across a full word document (1.3meg) of the complete TI Extended Basic Manual. If anyone wants it I shall be putting it up on our website. Or if you want it sooner then email me at the address on page 4.

I often get asked about adding drives to the TI and how you can do it. Well here is a nice article about just this. Incidentally I can supply the Y leads mentioned in this article.

**Need an Extra Drive or Two or even more?
by Jim Wiegand**

Connecting a third disk drive to your TI 99/4a is relatively simple. A power "Y" connector and the proper Data ribbon cable will put you into operation. I used a Radio Shack "Tandy Colour Computer" drive. It has a power supply and a single sided disk drive. I replaced it with a double sided, half height drive. These are plentiful and inexpensive.

Most disk drive Data cables will have a guide inserted into the controller connector between pins 3/4 and 5/6 (pin 1 always has a coloured wire on the ribbon cable). The TI Disk Controller card has an external connector for a spare drive. This connector has a guide slot between pins 9/10 and 11/12. If this SPECIAL cable cannot be found, you can cut the guide out of the ribbon connector. Be careful to not damage the contacts. If you make this modification, you must remember to have the coloured wire at the bottom when hooking it up. If you are technically inclined you can remove the disk controller card and cut a slot at the proper location. Don't cut too deeply as you do this. Watch for printed circuits in the line of cut.

If you prefer to use a 3.5 inch disk drive, these are also available and inexpensive. Adaptors to allow mounting these in the 5.25 inch drive bay are not as plentiful. I located some in a catalogue from MCM ELECTRONICS CENTERVILLE, OH (1-800-543-4330). A call will probably get you a catalogue. These kits contain the power adaptor and a Data connector adaptor.

A little info on disk drives may be helpful at this point. The TI disk controller uses connector pins 10, 12, and 14 as the Drive Select (DS) lines to select disk drives 1, 2 and 3 respectively. Most 3.5 inch drives are setup as drive B (2). Some of these drives will have DS jumper blocks allowing you to select its drive number. This block usually consists of a row or maybe two rows of five or six pins with a jumper across two of them. Look around the sides near the connector end. If no such selector can be found then the unit is probably hard wired as a drive B (2). A data cable modification will be required as follows:

From the coloured wire on the ribbon cable (pin #1) count wires to 12 and 14. Cut these wires about an

inch from the disk drive connector. Solder a wire between pin 14 from the disk controller and pin 12 from the disk drive. These connections should be insulated (tape, tubing). If you don't feel comfortable with this then ask for help. Most clubs have a "techy" who will be glad to assist you. The odd numbered pins are common (grounded) and are all on one side of the connector.

ADDING A FOURTH DRIVE

(Note from Ted Peterson of PUNN). On the TI disk Controller the drive lines for DSK1, 2, 3 are line 10, 12, 14, in the cable line. There is no DSK4 on the TI Disk Controller)

This is a discussion of and work associated with the addition of a fourth drive to the TI 99/4a.

I use 3 1/2" drives for backups. See the last paragraph of this article for 3 1/2" disk information.

This modification requires some wiring changes (with soldering) and drilling small holes. Materials needed are: a SPST miniature toggle switch, a dual drive data cable to match your drives (3 1/2" or 5 1/4") and a proper power "Y" adaptor. These items can usually be purchased at Radio Shack or a local Computer store.

As mentioned in a previous article, pin #14 of the TI Disk Controller is the Drive Select (DS) line for disk #3. This is the wire we will be working with. The task here is to install the toggle switch to allow selection of DSK 3 (A or B). To accomplish this, you must count the wires in the Data cable (the coloured wire is #1) to wire #14. Cut this wire between the disk controller connector and the disk drive connector, about one inch from the disk drive connector. Now, find wire #14 between the two drive connectors and cut it near the center. Strip and tin these two ends plus the end selector switch and mount it. With a 3 1/2" drive installed in a 5 1/4" bay. There is ample room. Cut a switchable length of three conductor wire (a piece of ribbon cable works quite well) to connect the switch to the data cable. Solder these wires to the switch with the centre wire connected to the centre terminal. At the drive connector, solder the centre wire to wire #14 from the disk controller. The other

two wires must be soldered to the cut wires between the disk drive connectors. Insulate all soldered junctions and install the drives.

If all went well, the drives selector position (A or B) can be indentified.

Type in, OLD DSK3.TEST and press ENTER. Watch the drive lights and label the switch position appropriately.

Remember that, if this is beyond your ability, ask for assistance. Someone will surely help. If you are using a 3 1/2" drive and cannot find the double density disk, (with only one hole on the back edge), you can use the high density disk if you cover the second hole with a write protect tab. Do not cover the hole with the little slider on it. This is the write protect slot and may be needed later.

3 1/2" DRIVES FOR TI

(by John Parken of TI-Chips)

The 5 1/4" format of the TI has been a plus because 5 1/4" disks have been more or less set aside for the more popular 3 1/2" format on the PC. The people who get rid of 5 1/4" disks because they don't use them anymore give me a good source of disks to reformat for my TI. People get rid of disk files full of double sided double density which work fine with the TI.

For people who are putting no more money into their TI, you can buy 3 1/2" drive for use with your TI till you decide to retire it. Then recycle them on your IBM system. If you have a Corcomp disk controller you can use 3 1/2" disk drives and only need low density disks for them. I have thought about putting 2 3 1/2" drives in my system because I have seen so many 3 1/2" disks on sale with a rebate for their whole purchase price. I just bought 100 Sony disks for \$39.00 and got a \$30.00 rebate check, 9 cents a disk. Hard to pass a deal like that up. I can't understand how the manufacturers can make any money off a deal like that but I love them.

I wrote this article in another article, then I bought two 3 1/2" drives and found things not to be as I thought. That prompted me to get it working before I

submitted the article as true. So here we go.

When hooking up 2 3 1/2" drives on the Corcomp disk controller card in addition to the two 5 1/4" drives you have in the P Box, no problem right! Well drives have changed, all IBM 3 1/2" drives are set up for drive 2, which for IBM is OK. These cable takes care of selecting drive 1 or 2, but what about my TI? Gone are my drive select jumpers and no select as to high or low density. I can use the same approach as IBM uses. I will do my switching in the cable: pin 12 or wire 12 is the drive select #2. If I want drive 3 all I do is move wire #14 coming out of the disk controller to wire #12 into the drive. The disk controller will then consider that drive as drive #3. The drive select lines on a Corcomp card are 6=drive #4: 10=drive #2: 14=drive #3:

The drives I used I bought at a show for \$19.50 each. They are Neutronics 3 1/2" 1.44 meg. At the show I also bought the splitter cable to power the drives. I did have to go to two different tables to get the right combination I needed. First a Y 5 1/4 (larger connector) to get my power outside of my P Box. I did experience some problems with the 3 1/2" drives by just using the P Box power supply so I did add an external 5 volt power supply. The supply I used supplies 1 amp 5vdc. You can buy a wall plug-in 5 volt power supply from Radio Shack, when you hook it up the black and red wire are GND and 5VDC.

Then a double 3 1/2" (small connector). These 3 1/2" drives only need 5VDC. Use a volt meter to see which wire from the wall 5 volt power supply are GND and 5VDC. A 24" length of 34 conductor ribbon cable with one 34 position card edge connector and 2 34 pin socket connectors make up the cable. All odd pins are at ground potential.

Please remember this is for a Corcomp disk controller only. Even when you use a 3 1/2" 1.44 meg drive it will only format your 3 1/2" disks to 360k and only if you cover the density hole with tape (black) or use some of those write protect tabs.

As I wrote this article I built the cable. Then I tried it. It did not work. The drive lights came on

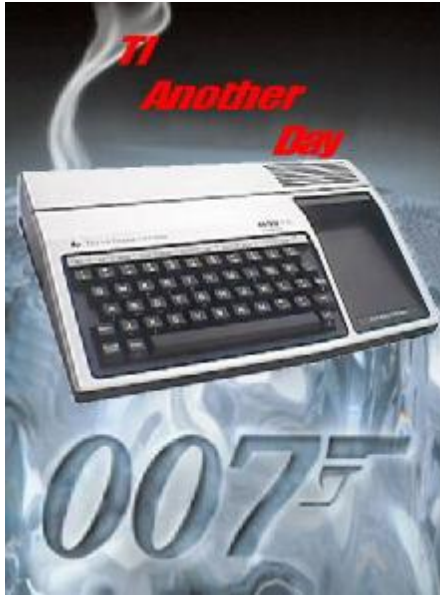
(all four) all the time. Upon further inspection when the card edge connector was crimped on it was off just enough side to side to short all the pins together. I cut off that connector and recrimped a new one and problems fixed. These connectors should be available at Radio Shack. Having the 3.5 drives is nice. Again TI is a winner only because we do have some compatibility with IBM equipment. Well that's about it for this time. Looking back now to when the TI finished production is 24years ago. How time flies.

Fctn Quit

Your listing to type in starts here :-)

```
10 ! * * * * *
11 ! (C) 84/97 BY
12 ! CARSTEN ZIEPKE
13 ! IT IS FREeware NOW
14 ! FELL FREE TO SPREAD IT
15 ! IF YOU LIKE IT SEND ME
16 ! AN EMAIL, A POSTCARD OR
17 ! WHATEVER YOU WANT
18 ! cziepke@ki.comcity.de
19 ! WESTRING 268
20 ! D-24116 KIEL
21 ! GERMANY
22 !
23 ! YOU NEED:
24 ! TI99/4A
25 ! TI EXTENDED
26 !
```

BA- SIC
Listing continued on Page 21



TI Another Day
By
Richard Twyning

Dear TI'ers,

A few weeks ago we had our spring workshop in Stanton St. John near Oxford. Many thanks go to the following people for their support of the event... Berry Harmsen who travelled all the way from Amsterdam for the event! John Murphy who, in his 80's drove all the way up from Poole! Andrew Cornforth who brought all of his family,

Francesco Lama who organized the event for us and booked the hall, and finally to Trevor Stevens who drove us both down.

The hall was excellent and we didn't seem to struggle for mains sockets like we do at some venues. It reminds me now that I'd better call the Station Hotel where we'll be organizing our AGM this year. The details were published in the last issue of TI*MES, but I'll include the details again for those who might not have received the last issue if it was lost in the post again! If there is anyone out there reading this and you do have previous issues which have been lost in the post, then please let me know and we can get a new copy to you.

I don't think this will be a very big issue as I'd like to complete editing before Thursday evening, and it's now Monday!

The most important thing I would like to concentrate on is the Treff which will be held in Venlo in the Netherlands from the 16th to the 18th of September. It will be the first Treff I'll be attending since the fiasco of the Austrian Treff!!! Trevor's wife Sue will be attending this Treff too and I'll be taking my wife Gill. We researched travel possibilities quite thoroughly and have arrived at an excellent solution!@As some may know, Trevor was in the RAF and was stationed at RAF Laabruich in Germany near the village of Weeze. This is only just over the border from the Netherlands and is only just over a thirty minute ride to Venlo. The RAF base is now closed down as Trevor and I were able to drive around it on

the way to Austria for the Treff. The airfield however has remained open and is now a civilian airport! It's been renamed recently as it used to be called Nederhein, but now it's called Dusseldorf-Weeze. The good thing is the cost of flying there. Ryan Air are doing return flights from Stanstead for only £32 pounds each!!!! We struggled to find flights to this airport at first, and Ryan are the only airline who seem to be doing flights there, and you MUST fly from Stanstead, but they are cheap!



The flight details are given below. The prices given below are before any taxes are added on...

The 20th International TI-Treff is being organised by Berry Harmsen of

Going Out						
		Web fare	0.99 GBP	Fri, 16 Sep 05	06:40	Depart London Stansted (STN)
				Flight FR3252	08:50	Arrive Dusseldorf-Weeze (NRN)
		Web fare	2.99 GBP	Fri, 16 Sep 05	19:20	Depart London Stansted (STN)
				Flight FR3258	21:30	Arrive Dusseldorf-Weeze (NRN)
Coming Back						
		Web fare	0.99 GBP	Tue, 20 Sep 05	09:15	Depart Dusseldorf-Weeze (NRN)
				Flight FR3253	09:25	Arrive London Stansted (STN)
		Web fare	0.99 GBP	Tue, 20 Sep 05	21:55	Depart Dusseldorf-Weeze (NRN)
				Flight FR3259	22:05	Arrive London Stansted (STN)

the Dutch TI User Group.

It will be taking place at the Hotel Wilhelmina, Venlo, Netherlands, which is only 40 minutes away from the Dusseldorf-Weeze airport.

You can book your place by contacting Berry Harmsen. His email address is.. berry.harmsen@wxs.nl

Here are some highlights for the Treff:

It will be Treff number 20: HOERA

Organisation: Dutch TI Users Group (TI Gebruikersgroep Holland)

Dates: September 16,17,18th 2005

Place: Hotel Wilhelmina in Venlo province Limburg, The Netherlands.

The Wilhelmina has a fully licensed bar, good restaurant, car park at the rear.

The price for the whole Treff is 100 Euros for 2 nights Bed & Breakfast, includ-

ing the Treff dinner and admission to the Treff meeting.
Extra single rooms are available for 15 Euros per night.
If you are just visiting for the day and only require admission to the Treff meeting, then this is 5 Euros.

The main hall is 25 * 6.5 metres with 2 extra rooms for demo's. There is a private bar for the Treff in the main hall.

Treff dinner on Saturday night with EMA awards.

On the program: demonstrations, sales, hardware workshop, auction sale, flea market.

On Friday night there is a "ladies night" planned. This really gives the men chance to sit in peace and quiet in the bar unhaddled and able to pass information and discuss all things TI related ;-)

The Wilhelmina is opposite the main Venlo Railway station with fast connections in all directions.

British users are asked to email Berry for updates.

Hotel Wilhelmina in Venlo, where atmosphere and hospitality have been a tradition for more than 125 years.

Wilhelmina

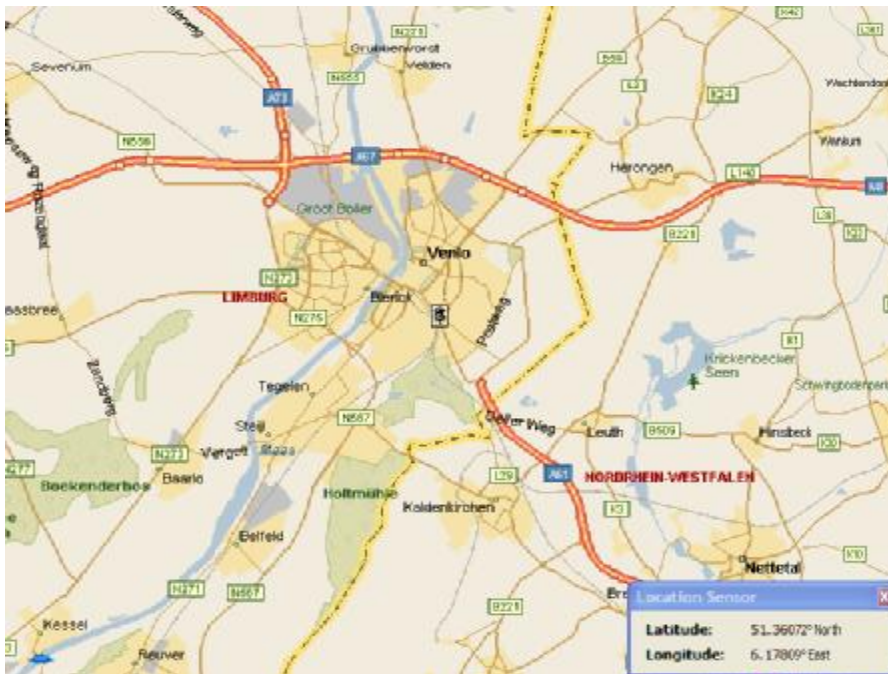


Hotel web site...
www.hotelwilhelmina.nl

Traditional hotel with 43 comfortable rooms, a lift, a stylish restaurant, great food, a social bar, conference halls, WiFi (broadband Internet throughout the hotel), privat parking spaces, situated opposite Venlo station and easy to reach from the A67 en the A73.
The best choice for a business trip or when you want to know the magnificent surroundings.

Hotel Wilhelmina - Kaldenkerkerweg 1 - 5913 AB Venlo - Netherlands - T +31-77-3516251 - F +31-77-3512252
www.hotel-wilhelmina.nl - info@hotel-wilhelmina.nl

**For laptop users, the Wilhelmina has FULL WI-FI wireless network access!
Here's the map again...**



That's about it for now. Don't forget the AGM this year. It's only a few weeks away on the 4th of June. The turnout last year was abismal! Can you help us make things better this year?

It's at the Station Hotel, Newstead Station, Newstead Village, Nottinghamshire, near Junction 27 of the M1.

Coordinates: 452205E 352852N (N53:04:13
W1:13:20)

The End

But...



RICHARD TWYNING WILL RETURN
IN

THE TI NEVER DIES

PC to TI Power Supply

By David Fletcher

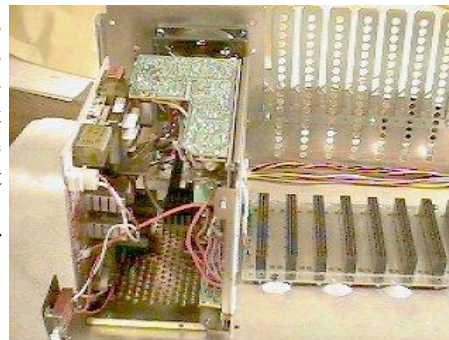
This is my main system. I took a stand alone full height drive case and bolted to the right side of the p-box which now houses a 40meg and 20meg hard drive. Drives 1 and 3 > 5.25' 360k, drive 2 > 3.5' 720k (used as a 360k) drive 5 > 3.5' 720k (used as 80 track for hard drive backup floppies) -drives 1&2 are in the p-box, 3&5 under p-box. This box has been converted to a pc power supply and powers all cards and drives (including hard drives)



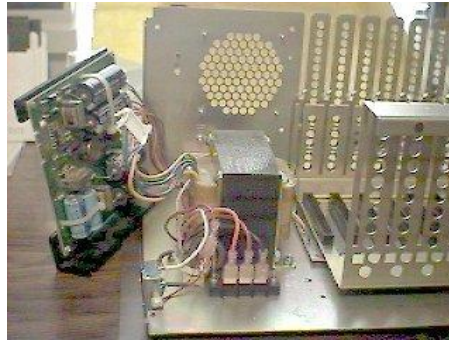
On the right is the PC power supply before its dis-assembly. Fan already removed from another supply is installed. Arrow below fan points to hole where the new ac socket goes. Not easily distinguishable at the lower left of the p-box frame is the on / off switch. This box has the push button style switch. (you gonna put that big brute in my unit????)



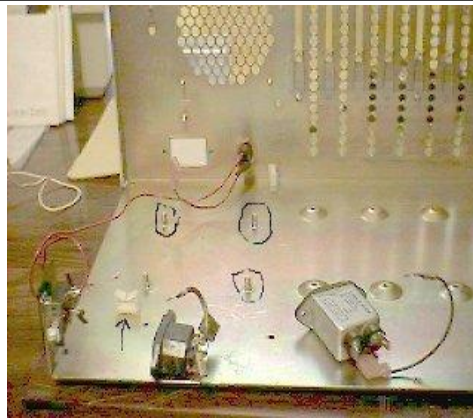
This is the TI power supply in all its glory. The transformer alone weighs more than the entire p-box. I have already removed the original fan (that thing producing the low roar) as I'll be replacing it with the 12volt fan that comes with the pc power supply. (careful man, that's my p-box your messing with)



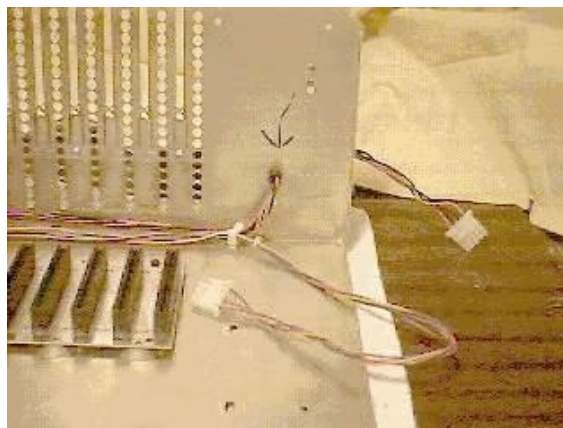
The new power supply installed with wiring complete. The original wires that were on the bus board were connected to the new supply with no splices. The original floppy power cable was used as well. An additional power cable was added that will exit the rear behind the internal floppy drives. You can see these cables along the rear behind the card bus. Note that the remainder of the card cage was left off for ease of view (GOSH! will the framework hold that monster???)



The power supply fully removed including ac socket and bus socket board for the cards. For the power supply I'm installing I had to remove the old transformer mounting studs (circled in black) leaving one to secure the new supply. The wire holder (with arrow pointing to it at lower left) was removed as well. The original ac socket on the right was too long and was replaced with the one on left that came with new supply (with capacitors installed). (geez



(I'll admit that it's looking pretty good so far, but you haven't shown me a title screen or catalogued a floppy yet!)

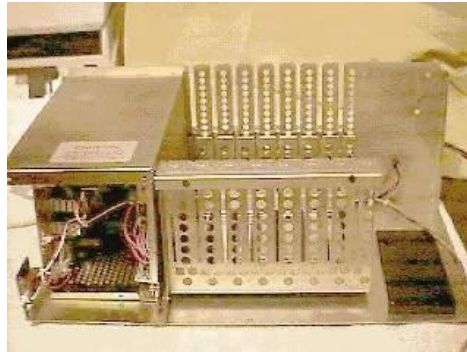


Here you can see where the additional power cable (for floppy and or hard drive) exits the rear via a snap-in grommet (1/2" hole required)

(ok, nice wiring job, but you still haven't got my baby back together)

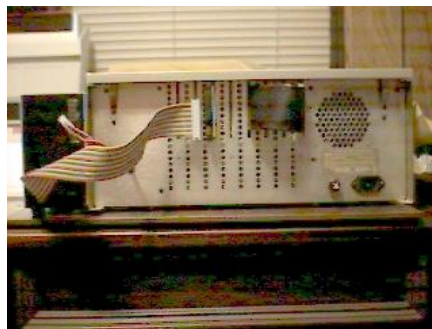


Here it is fully assembled and with a set of external floppy's to boot. Monitor and keyboard are off to the left out of sight. Voltage test were performed with floppy drives (for load purposes) before cards were installed. Loading of Funnelweb and subsequent loading of DM1000 was a pretty good test of the 32k card. All 4 floppy's were read and written to for verification. Note that the square button for on/off switch is missing. Would someone please donate one? (Wow, he actually got my baby back together and running - phew-sigh-wipe forehead-)



Ready for the main cover to be installed. I chose to install the power supply cover (or wind tunnel) on the chassis first, to ease main cover installation and also to see that everything fits well. Remainder of card cage and the plastic floppy drive support installed as well.

A rear view showing the floppy power cable (excess neatly tucked in upper right of stand alone box) FIREHOSE flex cable is rolled up and stored inside card cage. The stand alone box was not mounted to this p-box.



Well that's my little presentation. I hope you enjoyed it and found it somewhat informative. If the response is favourable to this, other projects can be presented later.

This Information added By Dan O'Quinn

It appears that some where along the way, perhaps when I borrowed this info from David's page one critical piece of information is missing.

Here it is:

When installing the PC Power Supply into your expansion box the 12 volt line from the PC power supply is run to both the 5 volt and 12 volt lines on the expansion box bus. This eliminated the need to remove the regulators from your PEbox cards.

END



TI-99 A/V Modification for the PAL Modulator PHA2036

Information on the Modification made by: [Sergio Viganò](#) (Milan, Italy,
email: vigase@virgilio.it)
pictures: : Fabrice Montupet

Materials

For the Audio Cable:

Flexible conducting one-wire cable Qty: 1 Meter



Male RCA connector.

Qty: 1

For the Video Cable

Flexible conducting two-wires cable Qty: 1 Meter



Male RCA connector

Qty: 1

To prevent any connection error, use different colors for RCA connectors.



Connection to the TV set:

RCA A/V to SCART converter Qty: 1



The Construction

WARNING: ALL THE HANDLING AND MODIFICATIONS PRESENTED IN THIS ARTICLE HAVE BEEN SUCCESSFULLY TESTED. YOU ARE THE ONLY ONE RESPONSIBLE OF ANY DAMAGED COMPONENTS.

The preliminaries

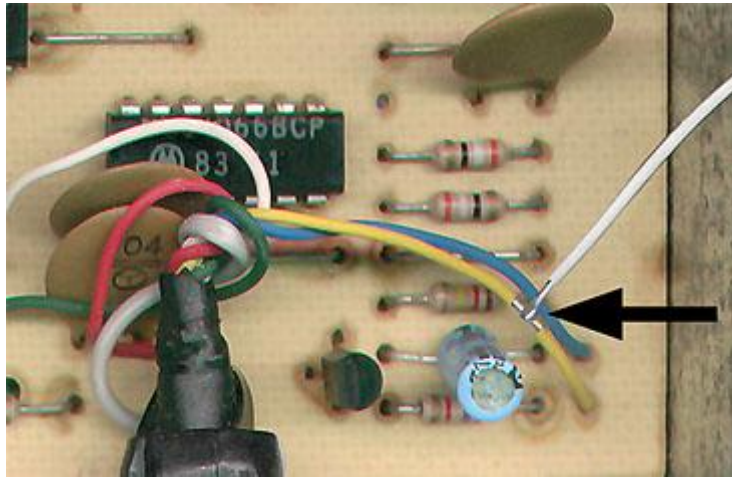
To access to the electronic components of the modulator, remove the two screws, and then, take out the cover.

...From page 12

- 27 ! USAGE:
- 28 ! CHOOSE LEVEL: 1- 3
- 29 ! USE CURSOR KEYS
- 30 ! STEER LEFT: S

continued on Page 22

The Audio Cable



Take out

3-4 mm of PVC insulation from the yellow cable without cutting the wire conductor.

Solder a wire from the center pin of the audio-RCA pin to the cleaned part of the yellow cable; insulate the connections.

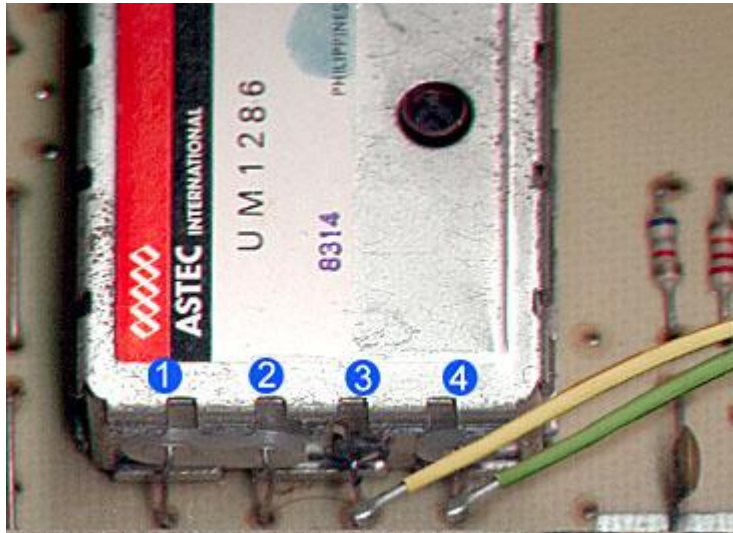


Note : The shield wire of the audio cable isn't used. The TV uses the video ground.

```
31 !           RIGHT:  D
32 !    SPEED UP:  X
33 !  SPEED DOWN:  E
34 !
100 GOTO 150
110 CALL CLEAR: : CALL SCREEN: : CALL
COLOR: : CALL MAG-
```

[continued on page 23...](#)

The Video Cable



Remove

4-5cm of the PVC outer sheath to release the two conducting wires. Remove 2mm of insulator from each of the wires. Solder a wire from the center pin of the video-RCA to the pin #4 of the RF box. Solder a wire from the shield (outer) pin of the video-RCA to the pin #3 of the RF box.



```
NIFY::CALL HCHAR::CALL VCHAR::CALL  
SPRITE::CALL CHAR::CALL COINC  
120 CALL DELSPRITE::CALL LOCATE::CALL  
SOUND::CALL KEY::CALL PATTERN::CALL POSI-  
TION::CALL MOTION  
130
```

continued on Page 25

Connexion to the TV Set



Double check all the connections and take care that the new cables installed do not touch others components. Insulate them if necessary. Cut a small part of the metal case to route the cables outside the modulator and close it.

Connect the two RCA plugs to RCA A/V connectors of your TV set or monitor. If your TV set has only a SCART, you can use an A/V to SCART adapter.

Even with this modification, you can still use the RF output of the PHA2036.

Use only one mode of use (RF / A/V) in the same time: disconnect the unused connector(s).


```
ANZ:: TIME:: BEW:: PU:: KM:: LEB
140 KKK:: XX:: YY:: K11:: S:: A:: K:: J:: I:: ZZ$: :
A$(): : B$(): : !@P-
150 CALL CLEAR:: CALL SCREEN(16):: FOR I=0
TO 14:: CALL COLOR(I, 7, 16):: NEXT I:: CALL
MAGNIFY ( 3 ) :: RANDOMIZE
160 CALL CHAR
( 96, "010303030301030707070703030303FF80C06
OCOC080C0E4FCECF0E0C082C1FE" )
170 CALL CHAR(100, "000000101010080808040
4040000000000000000808081010102020200000000
0" )
180 CALL CHAR(104, "010307070F0F0F1F1F3F3F
1F0701030F80C0E0E0E0F0F0F8F8F8F-
CF8E080C0FO" )
190 CALL CHAR(108, "030E1B1E3F371F1D0F070301
0101030FC0E0B0F0B8F8B0F0E0C080808080C0FO" )
200 CALL CHAR(112, "000000000000085522550
80000000000000000000000885522558800000000
00" )
210 CALL CHAR(116, "FFC5DCCDDDC5FFF0E0C0C0
C0C0C0C0C0FFA7AB2BA-
BA7FF0F0703030303030303" )
220 A$(1) = "0038747E783C1818":: B$(1)
="001C2E7E1E3C1818":: A$(2) = B$(1):: B$(2)
=A$(1)
230 CALL CHAR(120, A$(1), 121, B$(1), 128,
"1818181818181818", 64, "3C4299A1A199423C", 140
, RPT$("0", 32) & RPT$("18", 16) )
240 ZZ$="@ BY CARSTEN ZIEPKE":: FOR I=1
TO LEN(ZZ$):: CALL HCHAR(I+3, 3, ASC
(SEG$(ZZ$, I, 1))): : NEXT I:: CALL VCHAR
(1, 4, 128, 24)
250 CALL COLOR(12, 13, 16, 13, 2, 16)
```

```
260 CALL VCHAR(1, 12, 128, 24)::CALL VCHAR
(1, 24, 128, 24)::CALL VCHAR(1, 11, 120, 24)
::CALL VCHAR(1, 10, 120, 24)
270 CALL VCHAR(1, 25, 121, 24)::CALL VCHAR
(1, 26, 121, 24)
280 DISPLAY AT(1, 3) SIZE(3):"SKI":FOR K=1
TO 11::J=INT(RND* 24) +1::CALL HCHAR(J, 9, 120
)::NEXT K
290 A=10::FOR I=29 TO 27 STEP-1::FOR K=1
TO A::J=INT(RND* 24) +1::CALL HCHAR
(J, I, 121)::NEXT K::A=A+4::NEXT I
300 CALL VCHAR(1, 8, 128, 24)::CALL VCHAR
(1, 30, 128, 24)::CALL SPRITE(#1, 96, 7, 1, 134)
310 GOTO 320
320 CALL VCHAR
(2, 6, 32, 23)::ZZ$="SCHWIERIGKEITSGRAD
123":FOR I=1 TO LEN(ZZ$)::CALL HCHAR
(I+1, 6, ASC(SEG$(ZZ$, I, 1))):NEXT I
330 CALL KEY(O, K11, S)::IF S=O THEN
330::IF K11-48<1 OR K11-48>3 THEN 330
340 CALL VCHAR(2, 6, 32, 23)::CALL SOUND
(400, 110, 0, 310, 0, 510, 0)
350 ON K11-48 GOSUB 370, 390, 420
360 CALL SPRITE
(#27, 140, 2, 3, 81, #28, 140, 2, 3, 177)::GOTO
450
370 ANZ=5::CALL SPRITE
(#2, 112, 4, 30, 102, #3, 104, 6, 170, 150, #4, 104,
6, 120, 130, #5, 108, 8, 60, 170, #6, 108, 8, 80, 112
)
380 RETURN
390 CALL SPRITE
(#2, 112, 4, 30, 102, #3, 104, 6, 170, 155, #4, 104,
6, 140, 130, #5, 108, 8, 60, 170, #6, 108, 8, 80, 110
```

```
)
400 CALL SPRITE
(# 7, 112, 4, 120, 110, # 8, 112, 4, 50, 130)
410 ANZ = 7: : RETURN
420 CALL SPRITE
(# 2, 112, 4, 30, 102, # 3, 104, 6, 180, 150, # 4, 104,
6, 140, 130, # 5, 108, 8, 60, 170, # 6, 108, 8, 80, 110
)
430 CALL SPRITE
(# 7, 112, 4, 120, 104, # 8, 112, 4, 50, 124, # 9, 104,
9, 120, 167, # 10, 108, 5, 20, 155)
440 ANZ = 9: : RETURN
450 CALL PATTERN(# 1, 100)
460 BEW = 0: : TIME = 333: : PU = 0
470 CALL KEY(O, J, S): : IF S = 0 THEN CALL
MOTION(# 1, O, O) ELSE IF J = 83 THEN CALL
MOTION(# 1, O, -15) ELSE IF J = 68 THEN CALL
MOTION(# 1, O, 15)
480 TIME = TIME - 1: : PU = PU + BEW: : CALL COINC
(ALL, I): : IF I = -1 THEN BEW = 0: : GOTO 510
490 IF TIME < 0 THEN 520 ELSE IF J = 69 THEN
600 ELSE IF J = 88 THEN 610
500 GOTO 470
510 CALL MOTION(# 1, O, O): : CALL SOUND(200, -
7, 0): : TIME = TIME - 10: : ON K11- 48 GOSUB
370, 390, 420: : FOR I = 1 TO ANZ: : CALL MOTION
(# I + 1, BEW, O): : NEXT I: : GOTO 470
520 CALL MOTION(# 1, O, O): : FOR I = 1 TO
ANZ: : CALL MOTION(# I + 1, O, O): : NEXT I
530 CALL POSITION(# 1, XX, YY): : CALL SPRITE
(# 28, 116, 14, 200, YY)
540 FOR I = 200 TO 40 STEP - 2: : CALL LOCATE
(# 28, I, YY): : NEXT I: : FOR I = 1 TO 50: : CALL
LOCATE(# 1, I, YY): : NEXT I
550 CALL PATTERN(# 1, 96)
```

```
560 FOR I=110 TO 500 STEP 15::CALL SOUND
(1, I, 0, I+200, 0, I*2, 0)::NEXT I
570 FOR I=1 TO 5::CALL CHAR
(120, A$(2), 121, B$(2))::FOR K=1 TO
50::NEXT K::CALL CHAR
(120, A$(1), 121, B$(1))::NEXT I
580 CALL DELSPRITE(ALL)::DISPLAY AT(8, 13)
SIZE(7):"PUNKTE:"::DISPLAY AT(10, 13) SIZE
(7):PU
590 CALL KEY(O, KKK, S)::IF S=0 THEN
590::FOR I=13 TO 23::CALL VCHAR
(1, I, 32, 24)::NEXT I::GOTO 300
600 CALL MOTION(#1, 0, 0)::IF BEW<-120 THEN
GOTO 470 ELSE BEW=BEW-3::FOR I=1 TO
ANZ::CALL MOTION(#I+1, -BEW, 0)::NEXT
I::GOTO 470
610 CALL MOTION(#1, 0, 0)::IF BEW>120 THEN
GOTO 470 ELSE BEW=BEW+3::FOR I=1 TO
ANZ::CALL MOTION(#I+1, -BEW, 0)::NEXT
I::GOTO 470
```

The end... but...
See you at the AGM! ; -)

