# BITS, BYTESSPIHELS

LIMA`99/4A USERS GROUP



### MARCH 1989 VOLUME 5 #3

## THERE ARE NO BUGS IN FUNNELNER'S BM1000 a humble correction issued by Charles Soud

In the Feb 89 issue of BB&P I described an apparent bug in the DM1000 that comes with Funnelweb relating to COPMY DISK. There is in fact no such Funnelweb bug. Tony McGovern and others have been unable to duplicate the problem. I regret any problems I have caused by this incorrect bug report. After several hours of trying to figure out why I DID CONSISTANTLY have problems with COPY DISK of DM1000 I finally figured out that the problem was NOT with DM1000. My problems relate to TURBO COPY, which I was using to generate freshly initialized DSSD disks. See the article below!

## A BUG IN THE "INITIALIZE DISK"OPTION OF TURBO COPY reported by Charles Good

when you initialize a blank disk for the first time by selecting item 3 (Initialize Disk) of the TURBO COPY menu, the resulting disk will have >00 entered at bytes >12 and >13 of sector zero. Byte 12 is where the number of sides is indicated and should read >01 or >02 instead of >00. Byte 13 is where density information is written, and should read >01, >02, or >04.

If you use TURBO COPY to initialize a blank disk DSSD and then later try to copy this disk using the COPY DISK options of either DM1000 or Birdwell's Disk Utilities, problems occur. The >00's at bytes >12 and >13 of sector zero will confuse DM1000 or Birdwell's DSKU into thinking that the source disk is SSSD rather than DSSD. If you are using a blank target disk, the copying software will then automatically initialize the target disk as SSSD instead of DSSD.

Problems with TURBO COPY only show themselves in the showe described specific circumstances, and only of the TURBO initialized disk is in a format other than SSSD. In all other respects a disk initialized or copied with TURBO COPY behaves perfectly normally. I like TURBO's speed and error checking, and I intend to continue to use TURBO COPY for fast disk copying and initialization. With so many fast disk copy programs available, there is little reason to use DM1000 or DSKU for whole disk copying.

If you run into this problem and have trouble copying a lumbo initialized disk with DM1000 or DSKU, you can fix the source disk with a sector editor. For a 2680 source disk, entering >0201 starting at byte >12 of sector zero will do the trick.

##DONE##

### A PROFILE OF THE LINE WEER SHOW

Readers of this newsletter outside the immediate Lima Ohio area may be interested in the following information and comments about the Lima Dhio U6. We do not normally publish much local information, "minutes of the last meeting", "treasurers report", etc in our newsletter because this information is readily available via the grape vine to our local members and is probably of little or no interest to others.

The Lima Ohio UG has met regularly noce a month, 12 months of the year since our founding 4 1/2 years ago. We meet the third Saturday of each month in room 334 Galvin Mail at the Lima Campus of Ohio State University. The meetings are open to the public. Family membership dues are \$15/year for both local and out of area members. Paid members have unlimited free access to the software library either on a lunding library basis (local members) or on a "we copy disks for you at no charge if you provide the disks and pay postage both ways" basis (out of area members).

There are currently 17 paid local members who recieve the newsletter at the monthly meeting, or by visiting the president's home between meetings, or via the grape vine. To save postage, we do not normally mail the newsletter out to our local members. We also have 19 paid out of area members, none of whom are in Ohio. These all recieve the newsletter and software library listing updates in the mail. Three of these out of area members are other TI user groups who have taken paid memberships in the Lima U6 either because they don't publish their own newsletter and want to recieve ours or because they want access to the Lima U6 software library.

We regularly mail our newsletter at no charge to to 7 special individuals as our way of saying "thanks" for the things these special people have done for the TI community im memoral or the Lima UG in particular. We also regularly mail our newsletter to 48 user groups in exchange for their newsletters. This newsletter exchange provides us with a familiatic wealth of information. One of the advantages of our very small size is that it is easy for any of our local members to read all the exchange newsletters. exchange newsletters circulate among our local members in an established pattern. It is probably difficult for large waer erous to give their numerous members easy access to the exchange newsletters. We are slowly building our newsletter exchange. We add new groups to our exchange if they contact ws or if we have a specific reason to contact them. We do not, however, try to send our newsletter to every II user group that appears on a list somewhere because our small local membership and small budget can only handle so much.

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Since the Lina Ohio US has only a small number of local mombers, how did we manage to attract 320 people to our 1988 Mult User Group Conference? Part of the secret was the magic word FREE. There was no admission charge or exhibition charge to dealers or user groups who could have as many tables as they wanted in our exhibit area. Our May 1900 confurence was the first really FREE faire ever for the TI community. We have noticed that this concept of free, or almost free, has recently been used at some other Tl get togethers across the country. Another reason we had so many at our 1988 conference is probably Lima's central geographic location. Lima is within a one day round trip driving distance of many larger places that have active TI user eroups. These places include the following cities with populations exceeding 100000; Detroit, Cleveland, Columbus, Bayten, Cincinatti, Youngstown, Fort Wayne, and Indianapolis.

May do we call our "faire" a Multi User Group Conference?

Because that is exactly what it is. The attending user groups are what really makes the thing work. For example, at our 1988 conference virtually all the technical demonstrations involved hardware and software that did not originate with the Lima UG. Because of our very limited campower and talents, we don't generate such of our own stuff to show off. What we did instead was to arrange for lots of other user groups to come to Lima and show off their talents to us, and to each other. It was great!

Please plan to attend our May 20, 1989 conference. It too is totally free.

### NULTI-USER GROUP CONFERENCE MPSATE Saturday May 20, Lima Ohio

New listing-- Martin Smoley of Northcoast 99ers will a demonstration/tutorial of TI BASE. His TI BASE tutorials have been published in many of our exchange newsletters.

New listing-- Paul Scheidemantle, currently of the Great Lakes 99ers, will be selling his software. He is the author of several freeware and commercial packages relating to graphics. His releases so far include DISK LABELER 99 v2. TI Artist fonts 2-5, TI Artist Borders 2-3, and Picasso Borders. We are informed that Paul will have a new graphics release available by Conference time.

New listing— The Lima User Group has added over 100 flippies (200 SSSD sides) to its software library since the May 86 conference. Copies of these new suftware library additions will be made available FREE to one representative of each user group attending our conference. Printed seftware listings will be available at the conference, and we intend to send advance copies of this software listing to those user groups we know will be attending. This will be sent out with May newsletter. The offer of free goodies from the Lima US software library is made only to user groups and

not to individuals. Individuals may obtain access to our software library by becoming a member of the Lima UG.

Previously published listings:

MAGIC. See the nice editorial comments about this software in the January 89 issue of Micropendium.

--Jim Horn will give a presentation about COMPUSERVE. He is one of the TI SYSDPS.

--Barry Traver will show off the latest software from GENIAL COMPUTERWARE.

--Chris Bobbitt will give a demonstration of the latest seftware from ASSARD SOFTWARE.

-- The MYARC HDFC will be demonstrated by a member of either the Lieu UG or the C.O.M.W.I. UG.

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### AN UNUBUAL HIGH VOLTAGE "DUS" ENCOUNYDRED

by H. F. Muntis Lima Ohio User Group

I recently moved my TI 99/4A equipment from my garage workshop into my house. After setting up and booting several programs, the computer kept locking up. My equipment consists of a console, CorComp disk controller, CorComp RS232 card, CorComp 512K memory expansion, 2 half height PSDD droves, an RXBO printer, a Navarone midgit, and of course an expansion box. After considerable investigation, I determined that disconnecting the printer eliminated the lockup. This fix was no at all satisfactory, as I could not use the printer that way.

After further thought I remembered that my house line voltage was VERY HIGH (125+ volts). So, I installed briefly a VARIAC to drop the line voltage to 115V. This allowed completely normal operation. For those infamiliar with the mame, VARIAC is the trade marked name of GENERAL RADIO CO. for its line of variable voltage transformers. Then I permanently installed an autotransformer to drop the line voltage to 120 volts. Presto! No more lockups.

This is an unusual type of bug, but may occasionally crop up. It might not be readily recognized. By the way I have two or three times complained to the power company. No results yet. Apparently the line from house to garage plus th various line cords caused enough volgage drop at the garage for my equipment to perform there normally.

##DONE##

### IN TRACESCRIPE METH THE BIJIT SYSTEMS AND CAMB by Charles Good

Lima Ohio User Group

### INTRODUCTION:

Lets be honest with ourselves. Probably the biggest single technical limitation of the TI99/4A, besides limited CPM memory, is its lack of an 80 column text display. With only 256 pixels of screen width to play with, there is absolutely no way you can get 80 columns. Each letter would be only 3 pixels wide with no space between letters! Perhaps some of you have seen the 64 column TI Forth editor or the 64 column DV80 text scroll program that is in many user group libraries. These 64 column displays are just awful.

Ves, I know you can simulate 80 columns with left/right windowing as in the TI-Writer or Funnelweb text editors. But actually reading an 80 column page on the 99/4A's 40 column screen with these text editors is a big pain. You have to keep pushing FCTN/5 as you scan left/right on each line, and it is sometimes hard to move your eyes from the end of one line (right margin) to the beginning of the next line (left margin). You can also view 80 column text on the 99/4A's 40 column screen without windowing by using T(ype) with 301000 or V(iew) with DSKU or the Funnelweb 40 column editor, but the resulting text display on the screen is less than satisfactory. Each actual text line wraps on the screen to become two screen lines. You do not get a "what you see is what you get" (NYSIWIG) display and words get cut into two parts at the point of line wrap.

The lack of an 80 column display with the 97/4A is a major reason cited by previous TI users who have sold their TI systems and purchased IBM clones for home use. This is based on conversations I have had with several ex-TI users, including two past TI user group presidents, who have abandoned the TI for IRM land. Hardware and software that permit an 80 column text display is really needed to make our 79/4As technically comparable to the competition and to maintain user interest.

#### THE BO COLUMN CHOICES:

Currently there are only two hardware choices if you want to upgrade your TI to 80 columns, the Myarc Seneve computer-on-a-card or the DIJIT Systems AVPC card, both of which use the TI PE box. Both use exactly the same video chip and thus both have exactly the same capability to produce 80 column text using a screen width of 512 pixels. You can also display up to 512 colors at a time, if you have the right color monitor. This color diaplay is said to be comparable to or better than the display of any other currently available personal computer.

The Geneve currently costs about \$500-\$520 new and gives you a nice 101 key keyboard and lots of CPU memory. There is, however, very little software that takes advantage of all this CPU memory. Nost of the commercial and PD software

available for the Geneve is also designed to run on the 99/4A and thus doesn't use vast quantities of memory. Based upon conversations with Geneve owners present at the New 20 Chirago faire, the answer to the question "What can your Somewe do that the 99/4A can't do?" is usually "Not ouch other than 80 columns and better graphics." These same Geneve users also complained about what their computers would ###T do. This and that software which runs fine on the 99/4A has problems when run on a Geneve. I suspect that the full sotential of the Geneve, with all its CPU memory, may never be utilized. Because of the small user base (estimated in omchange newsletters to be much less than 2000), there is no financial incentive for the few existing II assembly language programmers to write really massive programs that utilize the Seneve's large CPU mearcy. Such software would be too big to work from a 99/4A.

The main subject of this review article, the DIJIT ANYC (advanced video processor card), costs \$220. To date, discounts are not available. Functionally it appears to me to be the equivalent of the Geneve without the fancy keyboard and without the extra CPU memory. With the AVPC and a 99/44 system you can run some of the software that is designed specifically for the Geneve in GPL mode. The AVPC is the enly currently available alternative to the Geneve for BO column work using a system built around the TI peripheral expansion box.

Until recently a third choice existed for 80 column work. Nochatronic, of West Germany, manufactured a circuit board that pluged into the side expansion port of the 99/4A commode and used the same video chip as the Geneve and the AMPC. This product is, however, no longer available. On Feb 15. 1989 I gave TAPE Ltd of Ontario CA a telephone call and talked to the owner Franz Wagenbach. TAPE is the only North Apprican importer of Mechatronic products. Mr. Wagemback tald me that he is completely sold out of all Mechatronics **hard**ware, and with the exception of the TI mouse he does **not** expect Mechatronics to manufacture any more TI hardware products in the future. Mr. Wagenbach did say, however, that if he had in hand 100 prepaid orders he beleived he could convince Mechatronics to resume production of its 80 column peripheral. Uh huh! Don't hold your breath waiting for this TAPE's phone number is 714 787-7706. Mr. Wagenbach stated that he DOES intend to stay in the TI market and offers products not available from other sources. including Mechnatronic XBII Plus (a module I think), the 79/4A intern book, and the TI Mouse (used instead of a joystick from the joystick port).

#### AN OVERVIEW OF THE AVPC CARD:

As currently sold the \$220 AVPC card comes with 120K of VBP RAM governed by the Yamaha V993B video chip. The AVPC card requires the use of a composite monochrome 80 column monitor (\$75-100) or an Amiga compatible RGB analog color monitor (\$275-\$500). See the discussion of monitors

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eleanhare in this newsletter. YOU CAMMOT USE A TV SR A COMPOSITE COLOR NUMBEROR OR A TTL NUMBEROR WITH THE AVPC CARD FOR 80 COLUMN WORK. There are sockets on the AVPC card for an additional 64K of VDP RAM which can be directly accessed by the V9938. However, to date no software has been written to take advantage of this extra 64K, so to keep costs down the AVPC leaves this memory for future expansion. The Seneve also has 128K of VDP RAM and the V9938 chip, but with the **Gene**ve there is no provision for adding the additional **64K.** You plug the card into any empty slot in the PE box and make slight modification to your console, as described below. A DIM 6 video port and a 9 pin DB-9 light pen/mouse port are at the back of the card and stick out the back of the PE box. You run a cable directly from the video port of the AVPC to the monitor video input. For sound, you need a separate cable between the console and the monitor audio input. You have to make these cables or have your dealer make them for you. They are easy to make using the "typical monitor connections" section of the AVPC docs and parts from Radio Shack.

#### NECESSARY CONSOLE MODIFICATION:

"What? Modify the console! Not me," you may be saying. I understand the fear many have of taking your favorite computer apart. Believe me, you can do it. No soldering is required, and the job is only a little more complex than taking the console apart to clean out the cartridge part. The documentation that came with my AVPC is labeled "Preliminary Copy" and contains excellent step by step written directions and detailed diagrams relating to the comsole modification. Morking very slowly while carefully reading the instructions the console modification took me about 1 hour from start to finish. If the job had been at all difficult I wouldn't have attempted the modification.

BIJIT SYSTEMS will do the work for you for \$25. if you ship them your console.

After completely disassembling the console and exposime the mother board the first thing you do is sever one of the wrinted traces on the circuit board. You need a good hand lems and an xacto knife for this job. I used a 10% microscope eyepiece removed from the microscope and turmed weside down for my hand lens. You use the hand lens to make sure that absolutely no metal remains at the point where you are severing the trace. You then remove the console's 🗫 chip from its socket, bend out one of the pins, hook a wiring harness to some of the chip's pins, and reinsert the chip in its socket. The wiring harness has very tiny insulated spring loaded clip hooks resembling the sort of clip hook one finds on the end of a dog leash. I have seen these tiny insulated clips at several area Radio Shack stores. The use of these clip hooks eliminates the need for soldering, and they are quite reliable according to the AVPC documentation.

#### WHAT CAN YOUR COMPUTER DO WITH THE AVPC?

In my opinion 80 column word processing is the most important useful application of the RVPC. The card comes

with a public demain 40 column version of TI-Writer and is also distributed with Funnelmeb v4.13 in 80 columns. Charles Earl told me at the Nov 88 Chicago faire that PRESS will work in 80 columns with the AVPC (if and whan PRESS is ever released).

I am writing this article using 80 column Funnelweb v4.13. I can't imagine ever wanting to go back to a 40 column text editor. I really like the 80 column Funnelweb! One of the nice features is the ease with which you can V(iew) a file that is listed in the ShowDirectory display. You don't have to load the whole file into memory to V(iew) it, and this is nice because loading a large file into memory can seem very time consuming. Just mark one of the 20 displayed files and (if it is a DVBO or DFBO file) press V. The first screen full of text from the marked file appears in 80 columns. The first and last file line numbers of the screen display are also indicated. If you want to look at the mext screen full of text from the file press any key. If you want to abort viewing the file, press BACK and you are returned to the ShowDirectory display. From there you can view another file. If you want to check the contents of another disk while the ShowDirectory is on the screen. just immert the disk, press REDO, and the new disk directory appears on the screen. All of these features of Funnelweb's **80 column** ShowDirectory make it real easy to quickly scam a disk full of text files, such as Central Westchester's "newsletter on a disk", and then read specific files on the screen.

Another thing you get with the AVPC is the ability to display high resolution graphics in up to 512 colors. The card comes with a utility that allows you to view any graphic-that is in MYART format. You need a Geneve to create new pictures with MYART or to convert other graphic fomats over to MYART format. Once these graphics have been created, however, they can be viewed using a 99/4A system that includes the AVPC card. The results are sometimes spectacular. Several nice MYART pictures are included on disk with the AVPC.

A number of graphics demonstration programs and fractal programs originally written on the Geneve work just fine with the AVPC. Some of these are distributed with the AVPC and others are available from the DIJIT Systems BBS. These "gen whiz" demos are fun to look at but don't do anything really useful.

In the area of Terminal Emulation software, there is an experimental version of Fast Term that works, with a few bugs, in 80 columns on the AVPC. TELCO versions greater than 2.0 use the extra VDP memory of the AVPC as a sort of RAM disk to store TELCO modules. Using the AVPC, TELCO executes much faster than it does using a 99/44 without an AVPC card.

I understand that there is a MULTIPLAN patch available that allows the AVPC to display MULTIPLAN in 80 columns. I don't have this software yet.

You are supposed to be able to use mice and trackballs with the AVPC, but I am not sure for what. There is a "mouse/light pen port" on the AVPC. Assembly language mouse routines have been written for mouse use in assembly language software and from XBASIC. DIJIT systems provides these couse routines as well as detailed instructions on how to make cables to properly hook just about any of the currently marketed mice to the AVPC. To date, no software that actually does anything has been written to take advantage of these mice.

As this article is being written, DIJIT Systems is demonstrating a video digitizer (the DIJIT-EYE-ZER) at the Feb #89 TI FEST MEST. This device is said to include Semiocking and "real time frame grabbing". It is a peripheral that attaches to the AVPC card. The digitizer will be able to create a computer image in 1/25 of a second of anything seen by a video camera, a video tape, or off the air and seen by a TV. I have no information on price or other specifications. This sounds like a very serious, and expensive, piece of equipment.

Software not specifically written for the AVPC runs normally in 20, 32, or 40 columns just as it would without the AVPC. Because you are using a better monitor with better resulution the screen display with this software is much sharper. You can easily see every individual pixel of the 256 pixel wide normal screen display.

WHAT YOUR COMPUTER CANNOT BO WITH THE AVPC CARD:

It seems that whenever a new peripheral comes out it turns out that this or that softsware won't work with the new peripheral. This is true for the AVPC, although I suspect that the list of 99/4A software that won't work with the AVPC is much smaller than the list of 99/4A software that won't work with the Geneve.

Any terminal emulator software that uses interrupts will have problems with the AVPC. TELCO works ok, most of the others don't. The problem is with the RGM based software that is part of the various RS232 cards. DIJIT has solved this problem by selling EPROMS for the TI, CorComp, and Myarc RS232 cards that make these cards fully compatible with the AVPC.

Most versions of the Horizon Ramdisk software based ramdisk operating system (ROS) are partially incompatible with the AVPC. The problem shows up in software that is designed to use 80 columns of text. With FUNNELWED for example, you can boot the 80 column FMB editor from a Horizon just fine, and you can without difficulty exit the 80 column editor and go back to other parts of FWB that are stored on a Horizon. However from within the 80 column FWB editor you can only load or save text files with LF and SF to and from a floppy. You can't LF and SF to and from a Horizon if you use FWB's 80 column editor or the public domain 80 column version of TI Writer that comes with the AVPC. Using the FWB 40

column editor causes no problems with LF or SF in 99/4A systems equipped with an AVPC. The solution is simple. Load a corrected ROS into the Horizon's RAM. Such an ROB is available from Bud Mills Services (manufacturer of the Morizon and owner of the Horizon ROS copyright) and from BIJIT. This special ROS makes the Horizon fully compatible with the AVPC. Unfortunately, the ROM based Horizon operating system sold by Benial Computerware cannot be corrected, because it is in ROM. The AVPV card is not compatible in 80 column mode with Beneal Computerware's Morizon EPROM operating system, which exhibits the problems with LF and SF described above.

The following 99/4A software is known by me not to work properly on systems equipped with an AVPC card. There is probably other incompatible software that I don't know about.

---BOOT v4, by John Johnson, will not boot programs from its menu. You can, however, bring up a disk directory with DOOT, mark a program, and then boot the marked program from LDAD A PROGRAM.

appear to work. However, if you load (or type in) XBASIC code after loading EZ-KEYS PLUS, the XBASIC code will not work properly. On systems equipped with an AVPC, EZ-KEYS PLUS does not properly print out 28 column lists of XBASIC code with checksums added.

### MANUFACTURER SUPPORT FOR THE AVPC CARD:

DIJIT systems has a free BBS to support its products. The BBS is available to anyone, not just registered AVPC owners, and the only cost is your telephone charge. The DBS contains text files, software, and MYART picture files in its download section. This BBS was the first in the country to have Funnelmeb v4.13 in 80 columns available for download. Any new software that is found to be compatible with the AVPC is put on the BBS. There is also an upload section and an Email section that allows you to leave and receive messages for DIJIT's owner Tom Spillane.

You can also talk to DIJIT over the phone using plain old feshoned voice communication. I gave DIJIT's voice line a call and almost immediately the phone was answered by Tom Spillane, DIJIT's owner. Tom gave me direct answers to some questions I had about the AVPC, and provided some of the information used in this article. I really appreciate this kind of manufacturer support.

The AVPC is apparently a completely open system. Unlike Myarc, which is keeping to itself important information about its Geneve computer, DIJIT will provide any and all technical information about the AVPC to anyone who asks. In its promotional literature DIJIT mentions a "programming package" that they will send out to those who wish to try their hand

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at programming for the AVPC. Personal communications I have had with Tony McGovern (author of FUNNELMEB) and Charles Earl (author of TELCO and PRESS) indicate that DIJIT Systems has been very generous in providing all needed technical details about the AVPC for programming purposes. To date, DIJIT has not marketed any of its own software and has relied on others to write software for the AVPC. If DIJIT does stay out of the software marketing business there is no reason for DIJIT to keep any details of its hardware a secret. DIJIT apparently does not want to make the same mistakes that II made when II tried to corner the market for 99/4A software.

### THE FUTURE OF THE AVPC CARD:

The AVPC is like the Geneve in that it is a piece of hardware in need of really good assembly language software. There are relatively few really good assembly programmers left in the TI community. Besides the software already available, there is the definite promise of Charles Earl that FRESS will work with the AVPC in BO columns, and a vague muccostion by Tony McGovern (in the doc file that accompanies the BO column Funnelweb editor) that he may do further programming specifically designed for the AVPC. DIJIY's "open system" policy may very well encourage other software programmers to create software for the AVPC. Nevertheless, I think it would be unwise for 99/4A users thinking of "upgrading" to purchase the AVPC and wait for desired software to appear later. There are disappointed Geneve **cumers** who are still waiting for software. Take a look at the software and hardware peripherals described above that are currently available for use with the AVPC and make a purchase decision accordingly. Don't assume that any fantastic new stuff will come along in the future. Maybe it will and maybe it won't. If you don't like what is available now, wait for the future to arrive if it ever does. Personally I find the ability to do word processing in 90 columns with high quality software (Funnelweb, maybe later PRESS) fully justifies the \$220 I paid for my AVPC. Hy AVPC will help maintain my interest in my 99/4A system and postpone, perhaps indefinately, the need to "upgrade" to an IBM clone system.

DIJI? Systems 3540 Adams Avenue Suite B San Diego CA 92116 Voice phone 619-281-2667 or 619-295-3301 188 phone 619-278-0155

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For Jale: Hayes 2400 baud modem with cables asking \$325 Call Pat Johnson 419-221-1641 ext 472

### COLOR AND NUMBERONE MONETORS FOR MEE IN 80 COLUMN WORK WITH 99/4a AND GENEVE SYSTEMS

fEDITOR'S NOTES: by Charles Good. The following article and accompanying chart was prepared by DIJIT SYSTEMS to describe features of the limited number of color monitors that can be used with the Geneve computer, the DIJII APVC card, and the Mechatronics 80 column peripheral (it doesn't qo in the PE box, so I don't call it a card). All three of these use the same video chip. Although the article was propared DIJIT for users of their product, it seems to me to be a good objective comparison of these color monitors. To view in color with any of these three hardware devices you cam't use just any RGB monitor. You must use an "analog RGB momitor" and your choices are limited. You have to look a long time before you find any of the below described monitors in Computer Shopper advertisments. The key words to look for when shopping for SENEVE/AVPC compatible monitors in stores or in advertisments are "AMBGA" or "RGB ANALOG". Any monitor compatible with the Améga should work.

You can, of course, also use an 80 column rated high resolution monochrome monitor with any of these hardware devices. Almost any monochrome monitor will work, and they usually cost well under \$100. Based on my personal in store comparisons, the resolution of almost any 80 column rated memochrome monitor is BETTER than what you can get with a .42 dot pitch Amega compatible color monitor. When I configure FRAMELNEB for color combination F1 (white on black), the bright green text displayed on my monochrome monitor with FLAMELNEB's 80 column editor looks really great. Colors other than black or white show up as various shades of gream. I have found no software that is rendered not usable because of the way "colors" are displayed on my monochrome monitor, although sometimes the monitor's "color" display leaves also be desired.

The "list price" for color monitors shown in the chart below should only be used as a guide, as discounts are often available. For example, DIJIT sells the Magnavox 8CM515 for \$275 plus shipping.

DIJIT Systems
APPLICATION NOTE #1
Rev. 4/10/88

### 80 COLUMN ANALOG REB MONITORS

High resolution analog R6B monitors have been used in industry for a number of years in computer aided design and professional graphics work stations that make those spectacular animated sequences seen on television. These monitors generally have 19 inch picture tubes and are capable of displaying up to 1280 x 1024 pixels. Their costs range upwards from \$2500.

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The need for enalog MGB conitors in the personal computer field has emerged in the last couple of years. The Amiga and Atari. ST have brought with them scaled down graphics capabilities not unlike that of their more expensive cousins. The plethora of graphics cards for the IBM-PC type computer has given rise to the "multisync" monitors with both digital and analog RGB inputs. Even in the world of the TI-99/4A, the DIJIT Systems RGB Conversion Kit requires an analog RGB monitor to display the shades of color generated. And the AVPC as well as other V993B based video cards require analog RGB monitors to display the palette of 512 colors they are capable of generating.

The accompanying chart was prepared as an aid in selecting an 80 column, analog RGB computer monitor. It omits two of the categories mentioned above, namely the industrial type, whose cost makes it inappropriate for the II market (unless you can find a used or surplus one at a bargain price), and the "multisync" or "multiscan" types. A good review of the latter can be found in the February 1980 issue of Byte Magazine. The chart contains the best information available to us and will be revised periodically. As you can see, there is not an extensive selection.

All of the below monitors comform to the EIA RS-343A standard requiring 0.7 volts p-p of video across 75 ohes input impedance. This signal level is the same as required by TV monitors and VCRs and is a worldwide standard. For simplicity we indicate 1 volt. The synchronizing signals required are combined (composite) horizontal and vertical sync having a negative sense at 0.3 volts p-p. The sync is on a line separate from the video.

Two factors effect resolution. They are the dot pitch of the physical pixels on the face of the picture tube and the video bandwidth. The coarsest dot pitch with which you can coefortably view 80 column text on a 14 inch diagonal screen is 0.42mm, making the Thomson 4120 a marginal 80 column performer. Ten Megahertz is the minimum video bandwidth required to pass the high frequency components necessary for sharp edges on alpha-numeric characters. High quality memitors have a bandpass of 18MHz and up.

In general, the higher the resolution, the higher the price. It all boils down to what you are confortable with and what you are willing to pay. You are the final judge. The list prices shown are over a year old and are given for comparison only. Most monitors can be bought at substantial discounts by prudent buyers.

\*\*DONE \*\*

BITS, BYTES & PIXELS Published by Lima OH 99/4A User Group Material contained herein may be copied by any user \$ group as long as credit \$ DV80 files of \$ is given. # most articles in BB&P can # be obtained by sending a disk and return postage. ADDRESS-P.O. Box 647 Veneducia Ohio 45894 Published monthly except July and August GROUP OFFICERS President-David Szippl 419-228-710**9** Vice Pres-Melvin Nomina 419-692-9564 # Treasurer-Leonard Cummings\* 419-738-3770 Newsletter editor and Librarian-Charles Good 419-667-3131 \* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

EDITORS NOTE: The following series of articles was received by the Lima U5 directly from the author, Harold Bingham. Mr. Bingham has corresponded with the Lima U5 for several years and has contributed many of the programs in the Lima U5 software library. Harold likes to trade software, and any reader of this newsletter is invited to write Harold about possible software trades. He is a member of the Doden Utah user group, and some of the following articles have appeared in the Ogden U5's newsletter.

### **ECCUMENTING YOUR PROGRAMS**

By Harold Bingham 1147 36th Street Ogden, Utah 84403 Ogden 99ERS

I am going to make comment on the documentation or "DOC'S" that accompany a program. Some programs don't even have doc's on the disk, and alot of these programs are not very user friendly. Some documentation is written to high

level, and the average user is perplexed and bewildered. The person that created the program knows how to run it and what it will do, but leaves the user confused on it's use. Programs should be user friendly and easy to use too. There are some programs that give the user a menu with selections. These are easy to run. Other programs have secret FCTM and CTRL and number combinations in order to make it do certain things. If one a FCTN or CTRL is used, why not put that on the screen as a guide?

Some programs are in Basics, while others are in Extended Basics, others are in Editor Assembly. These are the most confusing to load and run. No matter what language a program is written in, simple instructions should be written in the doc's on how to load and run, and what the program is used for.

#### IDONE!

LABELING YOUR DISKS WITH CATALOGS By Harold Bingham 1147 3Ath. Street Ogden, Utah 84403 Ogden TI-99/4A User Group

I would like to discuss the Disk Labeler 99 Version 2.0 by Paul E. Scheidemantle of 2762 Lovington, Troy, Michigan 48063. This disk label program is the best one I have come across. By selecting configuration from the menu you can set up various ways that you can print your disk labels on two sizes of labels. You can print the header with one line or two in Pica or condensed and add a date and a sub header. This is a good place to indicate wrether your disk is games. utilities, education, artist, writer or what ever grouping you choose. This helps to pigeonhole the disks. You can also have the programs listed in one, two or three columns and choose the print either compact, subscript, or pica for paper only. Also on the menu it tells you if you can fit the catalog on one label or not. If it won't fit, you can change the configuration and use one line header, and print the programs in three columns. If it still does not fit you can change the size of labels. You can select PID, or RS 232 and change the color of the menu screen. A lot of work has gone into creating this fine program.

If you would like a catalog listing information of what each program on your disk is for, if it is in Basic, XB, E/A you can add this information to each file and save it on another disk in Dis/Var 80 with this program. You can then edit the comments further with Funnelweb and re-save it on disk. No need to have just the disk title on your disks. You can add the catalog and then there will be no question what you have on the disk. If you use this disk you should send Paul E. Scheidemantle a contribution for the good work he has done in creating this program.

#### REDONERE