



July
August
1995

Volume 6
Number 6

The *First* Apple IIGs[®] Magazine + Disk Publication!



The Second Sight Card is Finally Here!

Does This Mean That it's Time to
Trash Your Old Monitor?

Mr. Priceguide Helps You Decide by
Telling You What You Need to Know
About Purchasing a VGA Monitor.

Plus, Our Publisher/Trashman Takes
an Close Look at the Second Sight
Card and What it Can, and Can't, do
For Your IIGS.

Programs

MIDI Surgeon v2.0
Faster and More Powerful!

DocAlias, Find Original & Launch Alias
Three Great Programs That Make Aliases More Useful Than Ever!

Reviews

ANSITerm v2.12 - Can it Give Spectrum a Run For it's Money?
The Golden Orchard Apple II CD-ROM - The Ultimate IIGS Software Collection?
The Iomega Zip Drive - It Holds 100MB per Cartridge. But Does it Work With the IIGS?

Plus

Rumors, News and Tons of Other Great Stuff!

Writer's Block

By Steven W. Disbrow

Who Would Have Thought . . . ?

By the time you get this issue of *GS+* Magazine, we will have been in our "new" offices for just over a year! Frankly, I wasn't sure that EGO Systems and *GS+* Magazine would be able to withstand the extra expense of renting an office, but thanks to *your* support, we were!

In fact, this last year (1994) was our best yet! Well, at least in terms of the net profit that we made. Unfortunately, mixed in with last year's good financial news there were a few dark patches that don't bode well for the Apple II market in general and *GS+* Magazine specifically. Let's look at them, shall we?

First, while our profits *were* up, our new subscription and renewal numbers were *way* down. In fact, most of our profit came from the third-party (Procyon and Zip) and stand-alone (Addressed For Success) products that we started selling. If it weren't for those, last year would have been *really* bad financially. (Note that Balloon has been very good for us too, but we didn't start selling it until this year.)

Since no magazine can survive without a steady influx of new and returning subscribers, we have been taking steps to stop this downward trend before it gets too bad. As usual, we are buying up mailing lists and doing as much direct marketing as we can. And, also as usual, I'm going to appeal to all of you to try and convince your IIGS-owning acquaintances to subscribe. (Wait! I just did that! Cool.)

Next, I conducted an informal "survey" on the Internet to try and determine why more folks don't subscribe. The two main reasons I got back were that:

- 1) People simply don't know we exist.
- 2) Lots of folks that do know we exist don't have a clue as to what we are all about.

So, to address both of those problems, I *finally* sat down and compiled a "Frequently Asked Questions" file about *GS+* Magazine. This file *tries* to make people aware of our existence while answering all of the concerns that many people have expressed about *GS+* Magazine. (For example, many folks don't realize that *GS+* Magazine is cheaper than any other Apple II publication currently available, even at

\$36 a year!) This FAQ file has only been available for a week or so (as I write this) but it's already generated quite a few new subscriptions for us!

Second, you might not have noticed it, but the number of advertisers in *GS+* Magazine is slowly, but surely, shrinking. This, of course, is due to the fact that there just aren't that many companies out there any more. So, if you know of a company that isn't advertising with us, let us know about them! (And support the companies that *do* advertise in *GS+* Magazine!)

Is That All?

Well, OK, so there really aren't that many "dark patches" in the IIGS universe. The main problem is that as the market shrinks, it's getting harder to get the word out. So, overall, I guess that the news here at EGO Systems and *GS+* Magazine is actually good news!

Expanding Our Line

In fact, it gets even better! Since more and more of our money is coming from the sale of stand-alone products, we've decided to make even more of those products available through our mail-order business. As I write this, we have already become a distributor of the excellent animation program "Animasia 3-D" (see review in the last issue), and by the time you read this, we will be carrying WestCode's complete line of IIGS products! Best of all, each of these products should be available at a pretty good discount. Check out the EGO Systems ads elsewhere in this issue for our exact prices.

AutoArk

So with all these other products becoming available from us, you are probably wondering, "What the heck is up with AutoArk?"

Well, that's a good question. Believe it or not, the answer is the same one that I gave in our last issue. AutoArk has been delayed because we found even more problems that had to be fixed. Rather than ship a buggy product (which we would have had to immediately update again), I thought it would be best to delay the product yet again, and not ship till we had something a lot more solid. (And, of course, we aren't billing anyone until we actually ship the product.)

But don't get the impression that AutoArk is chock full of bugs. It isn't.

There were just some very annoying problems that I wanted to get solved before the program shipped. The reason that it has taken so long is that ECON Technologies is actually doing the update, and they have very little time to spare for this. So, the turn-around between the time we report a problem and the time we get a fix back can vary from days to weeks. But, as I write this, the last really annoying problem has finally been fixed, and we should begin testing a (hopefully) final version soon. Of course, all these delays mean that the special pricing on AutoArk upgrades will be extended, I just don't know how long that extension will be yet. (Check the [a.Read.Me](#) file on the *GS+* Disk for any last minute information.)

A Conflict?

Now, if you've put all of what you've just read together, you might be saying to yourself, "Wait a second! How can they sell both AutoArk *and* WestCode's HardPressed? Isn't that a conflict of interest?" Well, it *could* be, but I think I've come up with a pretty good solution to this problem: we'll simply sell both products for the same price—\$35. That's still a pretty good discount off the regular price for HardPressed, and it *should* keep us safe from conflict of interest accusations.

KansasFest

If you read our last issue, another question you might have is "What's up with KansasFest?" Well, when our last issue went to press, KansasFest was going to be sponsored by "Power GS." Between the time that we printed the magazine and the time that most of you got your copies, there were some personnel changes in the ad hoc committee putting on the show, and the sponsorship changed hands. Fortunately, this hasn't affected the bottom line: the show will go on, and the dates, times and prices are the same as what was advertised in our last issue. Unfortunately, the contact information for the show *did* change. But, the folks at Power GS tell me that they passed along all of the orders they got to the new sponsor. So, there probably wasn't any major harm done.

TTFN

Well, I think that's it for now! Don't forget that next issue will be our *sixth* anniversary issue! Do we have anything special planned? Ummm, no. But hey, we made it six years!

Diz

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GS+

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Publisher, Editor
STEVEN W. "DIZ" DISBROW

Technical Editor
JOSEF W. "GONZO" WANKERL

Operations Director
ROBERT A. "BOB" RIBARIC

Contributing Editor
ERIK "LURCH" KLOEPPPEL

On the Cover

Believe it or not, a garbage truck broke down right in front of our office the day we had to shoot our cover. So . . .

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(615) 332-2634 (FAX—available 24 hours a day)

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Letters

Dear GS+,

Last week I got a brand new ZipGS . . . Its installation was successful . . . and all my software is now dramatically speeded up.

Unfortunately, since then something has gone wrong. After about two hours working with my computer, it breaks down. The screen becomes black and I can't get the computer to reboot . . .

If I leave the computer alone and then come back about a half an hour later, the computer works fine again—for another two hours.

I believe this strange behavior may be the result of overheating, but I am not sure. Can you help?

Bernard Huber
Gonesse, France

Yes, that certainly sounds like an overheating problem! My advice would be to buy a fan as soon as possible and see if that helps the situation. Of course, the problem with that is that most of the external fans (the System Saver IIGS and the Conservor) that were made specifically for the IIGS are no longer available (see the "Letters" column in the last issue for more on this), so you might have to do some searching to find a used one. You can still buy an internal fan for your IIGS, but they can block access to slot 1 inside the computer. (Alltech Electronics sells an internal IIGS fan for only \$15. Call them at 619-724-2404 for more information.) If you can't find a IIGS-specific external fan, and you don't want an internal fan, I'd suggest that you just buy a tiny "personal" fan and aim it at the back of your computer. That should reduce the heat and give your IIGS more staying power.

Diz

GS+:

This is in reference to a letter from George Kirby that appeared in GS+ V6.N5. [George noted that when he used the ImageWriter.CL printer driver to print labels from AppleWorks GS, the printed information would slowly "crawl" up the page with each successive label. - Ed.] For some reason, if you set the height of your labels to exactly one inch (pick "Show Definition" from the Template menu in AppleWorks GS to change your label's height), what you see on the

AppleWorks GS screen is not what you get when you print. Apparently, AppleWorks GS thinks you've set your label height to just *under* one inch, and when you print, this error accumulates for each label, causing the information to print more and more incorrectly as you move down the page. The solution is to set your label height to just *over* one inch. In fact, one inch plus one pixel will fix the problem nicely.

Sam Erwin
Brea, CA

Thanks for the information Sam! I'm sure that will help out a lot of our readers!
Diz

GS+:

This is in response to Gary Calabrese's letter in GS+ V6.N5 where he asked about getting more than just GIF graphics over to the IIGS from other computing platforms. My own solution is to use a Mac shareware program called GraphicConverter from Thorsten Lemke. It is currently at version 2.1 as I write and is available on all the national online services. It will convert just about anything to anything, graphics-wise (GraphicConverter will also convert to/from IIGS Apple Preferred Format [APF] and IIGS 3200 color pictures). I use it to convert all those Mac & PC GIFs, PICTs, TIFFs, BMP/RLE, MacPaints, etc. to Mac GIF or IIGS APF format so I can put them on a ProDOS diskette via either Apple File Exchange, Apple's PC Exchange control panel v2.0+, or Apple's ProDOS File System extension v2.2+. Or I can set up the Mac for System 7 file sharing, install the "Network: AppleShare" option on the IIGS, connect the Mac and IIGS with LocalTalk connectors/cabling, log onto the Mac from the IIGS, and drag the GIF to the IIGS. Prism will then convert the GIF graphic for use in IIGS programs . . .

This opens a whole new world of graphics and clip art to the IIGS . . . !

Sterett R. Prevost III
Tucson, AZ
Internet: RidgeP@aol.com

Hi guys!

In your article about different types of unarchivers ["The Beginner's Guide to Archives" in GS+ V6.N5], I feel that you

forgot my favorite utility of all time, Tony Marques' Angel. Angel unARCs, unZIPs, unZOOs, and unSHKs files. Best of all, it runs under ProDOS 8, and I've found that it's much faster than PMPunZIP when it comes to unZIPping . . . and it also lets you look at the files in the archive without even unZIPping them.

. . . If you haven't yet, you might want to give it a try.

Colin Williamson
Elizabethtown, PA
Internet: colin.williamson@mdtnbbs.com

Thanks for the letter Colin! I had never heard of Angel before, but after I got your letter I decided to hunt it down. I did, and it does indeed seem to do everything you say! So, if anyone out there is interested in another cool archive program, and you don't mind the fact that it is a ProDOS 8 program, Angel is file number 20,501 in the A2 library on GENie.

Diz

Diz:

In your "Letters" column [in GS+ V6.N5] a guy asked about using an IBM and an Apple IIGS to move WordPerfect documents back and forth from work. Your answer was way too complicated. Try this instead:

1. Save on the PC to WordPerfect v4.2 format.
2. Insert disk into IIGS (with MS-DOS FST and SuperDrive or BlueDisk).
3. Copy the file to a IIGS disk (WordPerfect GS doesn't seem to like PC disks).
4. Run WordPerfect GS.
5. Open the file!

That's it. Note: Some files may need to have the first two lines deleted as they *may* contain garbage. To go back to the PC, use Peter Watson's utilities to copy the file back to a PC disk and then go from there. WordPerfect for the PC will read WordPerfect GS files as if they were WordPerfect PC v4.2 files . . .

Eric Seiden
Miami, FL
Internet: Darsys@aol.com

Well, I did actually know about the WordPerfect GS solution, but I really hate describing solutions that require a user to dig up a piece of software that is no longer available. That's why I went with the longer, EGOed-based solution. But hey, here's another solution...

Dear Diz,

... This is a follow up to Roy Mongrue's letter in GS+ V6.N5 about transferring files to and from MS-DOS WordPerfect. I've had to do the same often, and here are some tricks and tips I thought I would share:

- If you own SoftSpoken's CrossWorks (for the PC), you can save your document in WordPerfect v4.2 format and then use CrossWorks to translate the file into AppleWorks v2.0 word processor format, then transfer the file to the IIGS. This preserves some formatting that EGOed's RTF translator doesn't. (CrossWorks can manage the file transfer from the PC to the IIGS using its supplied null modem cable, but I've also used the AppleWorks GS telcomm module with Windows Terminal and a store-bought cable.)

- I find Peter Watson's tools effective, but confusing. The PC Transporter transfer program is also kind of clunky.

- One alternative is to use HFS (Mac) formatted disks on the PC. A PC program like Mac-in-DOS will let you read and write Mac disks *on your PC* and then you can use these in your IIGS.

- Another solution is to use MS-DOS floppies to move from PC to IIGS and ProDOS floppies from IIGS to PC using Hugh R. McKay's fine freeware program, ProCOPY (for the PC). I find this the easiest way to go...

All of this leads to a suggestion... How about licensing Peter Watson's MS-DOS routines and adding them to CD-ROaM? This would be the next best thing to a write-capable FST.

David Kavanagh
Toronto, Ontario, Canada
Internet: 74220.2637@compuserve.com

Thanks for the tips David! By the way, your idea for a CD-ROaM enhancement is really good. But only time will tell if we can make it happen...
Diz

GS+:

... I have been unable to locate any of the Addison-Wesley books on HyperCard

IIGS and wish that I had bought them earlier. That's what I get for putting it off. I would have bought HyperCard IIGS when it first came out if I had known what it actually was. I was under the impression that it was another HyperStudio-like program, but in reality, the HyperTalk language is another form of BASIC (sort of a Visual BASIC for the IIGS). The program is wonderful, and I have been able to use it for many things that I was not able to do under AppleSoft BASIC. The program satisfies what I have been looking for in a language to program with on the IIGS. All of the other languages available for the IIGS (C, Pascal, Assembly, Modula-2, etc.) require acquiring the entire IIGS library of tool calls, routines, etc., and spending hours upon hours reviewing them to learn the tool calls and syntax. It is beyond my simple budget, and I do not have the time nor the patience to sit down with 6 to 8 manuals and spend hours going over them attempting to learn how to program on the IIGS. HyperCard IIGS has provided me with an opportunity to do a little programming on the weekends and still be able to spend time with the family.

Bottom line: I answered one of your feedback forms and stated on it that I was going to drop my subscription to GS+ Magazine due to the [programming] content being almost all [oriented towards] C programming. I have since reconsidered and will extend my subscription for another year. I do not plan on taking up any C programming, but you are supporting the IIGS and I will support your efforts for another year. Besides, I have gotten many new desk accessories that are useful within HyperCard IIGS from my subscription to GS+ Magazine...

What I am mostly interested in are HyperCard IIGS XCMDs and XFCNs, stacks, tips, and techniques. So, I'd like to request that you consider including some HyperCard IIGS stacks and articles in your magazine... It is a IIGS-only application and programming language (HyperTalk), and therefore in keeping with your motto of being a IIGS-only magazine.

David C. Frye
Virginia Beach, VA

Well, David, the main reason there isn't more HyperCard IIGS or HyperTalk information in GS+ Magazine is that very few people have asked for any! We did have a short-lived regular department (called "HyperActivities") on HyperCard IIGS and HyperStudio several years ago, but it didn't seem to spark a lot of

interest from anyone, so it faded away. (If you can get your hands on them, check out the following back issues of GS+ Magazine: V2.N5, V2.N6, and V3.N1.) However, your letter has made me consider starting that column up again. In fact, we had a couple of HyperCard IIGS projects under way when we dropped that column and I think that they are still around here somewhere... So, I'll see if I can't dust one of them off and get it in the next issue or two.

Diz

Dear Steve:

... I copy disks using Photonix. It works fast and well. But, it will not work with a disk larger than 800K. I would love a patch or a program that can work with 1.44MB disks...

Ralph D. Benson
Dix Hills, NY

Well Ralph, we actually already have a program for that! It's called Replicator and it will work with any capacity disk that you have hooked to your IIGS. (We use it to copy all of the GS+ Disks that we send out.) The latest version of Replicator (version 1.3.1) was in GS+ V4.N2 and it works great with SuperDrives.

Diz

Dear Sir,

... Sooner or later all of the 800K drives that came with our IIGSs will break down and need to be repaired. Could one swap just an internal 3.5-inch SuperDrive mechanism used on a Macintosh with the innards of a dead 800K drive? I understand that an external 3.5-inch SuperDrive can be used as an 800K drive when connected directly to the IIGS's SmartPort...

P. M. Lim
Toa Payoh, Singapore

Hmmm, this is a good question. I've thought about this myself, but to be honest, I just don't know the answer. Since both drives do work when hooked to the IIGS SmartPort, the power requirements should be the same, so my gut feeling is that it should work. But, I've never tried it. So, if anyone out there has tried this, and knows the answer, let me know!

Diz

Greetings!

I just read (and enjoyed!) my first copy of GS+ Magazine (V6.N5).

There was a letter from Pamela Von Olnhausen regarding problems with System 6.0.1 that I'd like to comment on . . .

I've got a ROM 01 GS with 1.25MB of memory in it. I created a "crippled" version of the System Disk and have been using it without problems for almost 6 months. I don't have a hard drive either (but will get one plus a bigger memory card eventually, as I agree it will make life easier).

I only have two fonts on this poor puppy (Shaston and CoPilot.8), but even with the Finder I still had enough space left over for EGOed lite, BackDrop (a Custom Desktop accessory) and my printer drivers.

My point? You don't really need 2MB to use System 6.0.1 . . . sure, you need at least that much to use all of it, but if you're poor and real desperate (like me!) you can work something out.

. . . Somebody once told me I'd have to have a hard drive to use CoPilot [for GENie] too . . . but both it and ProTERM co-exist on a single 3.5-inch floppy and seem to get along together quite well!

Lawrence L. Moore
Washington Park, IL
Internet: goldfish@genie.com

Well, this just proves that where there's a will, there's a way! Thanks for sharing this information with us Lawrence. I'm sure it will give our hard disk deprived readers something fun to do this weekend! (Be that as it may however, we will still officially recommend that folks have at least 2MB of RAM and a hard drive to use System 6.0.1. Otherwise, we'd be swamped with technical support calls from folks trying to use our programs on under-equipped systems!)
Diz

Hi Diz,

. . . I have a Apple CDSC CD-ROM drive connected to a RamFAST/SCSI card, I can get it to play audio CDs but it does not recognize data CDs. I have only tried Mac CDs from magazines and CDs from PC magazines. [Is there some trick in getting them to show up?]

. . . I hope you have some suggestions, as I do not want to spend money on any Apple II or ISO 9660 CDs if they will remain unread . . .

Alan Armstrong
Tyne and Wear, England
Internet: 100332.507@compuserve.com

Well, my first bit of advice would be to find someone with a CD that you know should work and try it. The AUGE CD (reviewed in GS+ V6.N2) or the Golden Orchard CD (reviewed in this issue) would both be good choices for this. But, if you don't know someone with either of those, you can try this:

1) Put one of the Macintosh CDs in the CD-ROM drive.

2) Run the RamFAST utility program and pick the "ScsiUtils" option at the top of the screen. When the list of SCSI devices appears, pick your CD-ROM drive.

3) After a few moments you should see a list of the partitions that are on the CD-ROM. On the left hand side of this list will be a column called "Active." This tells the RamFAST if a particular partition is active or not. If there is an "N" next to a partition name in this column, that partition won't show up.

4) To make a partition show up, click on the "N" and it should turn into a "Y". You can then quit the RamFAST utilities and the partition should show up.

If this doesn't work, contact Sequential Systems technical support by sending e-mail to sequential@hypermail.com.
Diz

Diz,

Here are some questions for you:

1) I just ordered the SoundMeister sound card from Alltech. I read your review in GS+ V5.N1 and am still in the dark. Will the SoundMeister send rSounds to both external speakers (in other words, will I get full stereo with rSounds)? My Super Sonic Stereo card does not and it does annoy me a little.

2) Does Other World Computing (a.k.a. LRO) still exist and support the IIGS?

3) I heard something about GENie making a mouse-driven front-end for IIGS users (like America Online should have). Have you heard anything about this?

Andy Middleton
Millville, NJ
Internet: L.Middleton3@genie.com

1) *The SoundMeister can only play a sound through both speakers if it is a stereo sound and/or if the sound is sent to both speakers by the software that's playing it. Unfortunately, most rSounds aren't in stereo and the Sound control*

panel (the most commonly used sound player I know of) only sends sounds to one speaker.

2) *Other World Computing is still around, and they do still supposedly support the Apple IIGS. But, they still have something of a bad reputation with Apple II owners. My advice is to check with the Better Business Bureau before ordering from them.*

3) *GENie is indeed about to release a mouse-driven front-end for the IIGS. At this point, we've only seen beta versions of it, but it does look pretty cool!*
Diz

GS+:

Thanks for your great article on high speed modems in the January/February 1995 issue of GS+ Magazine (V6.N3). I ordered a Supra 28.8K Fax/Data modem and hooked it up today. Installation was painless. It took me all of two minutes. In fact, it took me longer to remove my old Datalink 2,400 bps modem! Now that I'm cruising along at 28.8K, I thought I'd follow step 5 in the article and tell you how much I enjoy my modem!

It works fantastic with Spectrum v2.0!
I'm pleased!

Krishna M. Sadasivam
Knoxville, TN
Internet: sadasiva@utkvx.utk.edu

We can't read your mind! If you have something to say about GS+ Magazine, you have to let us know! So don't just sit there and stew! Write us a letter! If you don't, it's nobody's fault but your own!

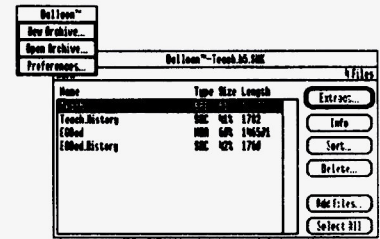
Due to space limitations, letters may have to be edited and we can not answer every letter here in GS+ Magazine. If you want a personal reply, please include an e-mail address (preferred), a daytime phone number (and the best time to call), or enclose a self-addressed, stamped envelope with your letter. If you don't include one of these things, we will try to answer your letter in a future issue of GS+ Magazine.

Please address all letters to:

GS+ Letters
P. O. Box 15366
Chattanooga, TN 37415-0366 GS+

Balloon™ v2.0

Balloon is a new desk accessory (NDA) that allows you to easily create and maintain NuFX (ShrinkIt) archives on your IIGS. Since Balloon is a NDA, you no longer have to run GS-ShrinkIt to extract files from ShrinkIt archives! So, if you use a desktop telecommunications program, like Spectrum from Seven Hills Software, you can manipulate your ShrinkIt archives while you are still online!



Here are a few of Balloon's features:

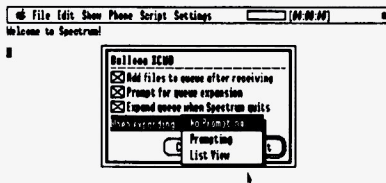
Balloon can extract files from ShrinkIt archives and create new ShrinkIt archives.

Balloon can add/remove files to/from existing ShrinkIt archives.

Balloon recognizes ShrinkIt archives that are enclosed in Binary II, MacBinary and America Online for Macintosh "wrappers."

Balloon lets you have multiple archive and file information windows open at once.

Balloon is Finder friendly! Double-click on a ShrinkIt archive and Balloon opens it automatically! Balloon can also communicate with other system extensions to automatically open files after they are extracted from an archive!



The Balloon package also comes with the Balloon XCMD for Spectrum v2.0. By using this XCMD with Spectrum v2.0, you can have Balloon automatically expand the ShrinkIt archives that you download with Spectrum! You don't even have to open the Balloon new desk accessory!

In addition, the Balloon XCMD for Spectrum v2.0 lets you write Spectrum scripts that give you full access to the Balloon new desk accessory and all its capabilities. For example, you can write a script that will create a new archive and add files to it. Or, you could write a script that would open an existing archive and extract all the files from it to a folder that you specify!

To order Balloon v2.0, send a check or money order for \$25 in U.S. funds to: EGO Systems, P. O. Box 15366, Chattanooga, TN 37415-0366. You can also order with your Visa or MasterCard by calling us toll-free at 1-800-662-3634. Outside of North America, please call 1-615-332-2087. Or, FAX us at 1-615-332-2634. TN residents add 7.75% sales tax. System Requirements: Apple IIGS with System 6.0.1 or later, 2MB of RAM and a hard disk drive. More RAM is *strongly* recommended! Balloon was written by Josef W. Wankerl. Balloon and GS+ Magazine are trademarks of EGO Systems. ShrinkIt is a trademark of Andy Nicholas. Spectrum is a trademark of Seven Hills Software, Inc. America Online is a trademark of America Online, Inc. Apple IIGS & Macintosh are trademarks of Apple Computer, Inc.

MIDI Surgeon v2.0

By David M. Tribby

MIDI Surgeon (which was originally published in *GS+* Volume 5, Number 3) is a desktop application that translates "raw" MIDI music files into MIDI Synth sequence files, making them playable on an Apple IIGS. The first version of MIDI Surgeon would let you perform "surgery" on a MIDI Synth sequence, removing unwanted commands and changing track and channel assignments. It would also allow you to assign instruments to specific tracks.

This new version (v2.0) greatly increases the speed of both the surgery and translation operations (see the "Tuning up MIDI Surgeon" article elsewhere in this issue), adds several new surgery commands, provides additional analysis information, allows the tempo to be changed, and gives a visual representation of the notes being played. MIDI Surgeon v2.0 requires System Software 6.0.1. It's also a good idea to have plenty of RAM available to hold large MIDI and MIDI Synth files.

MIDI Surgeon is *not* just for users who have MIDI equipment attached to their IIGS! Any IIGS user can use the program to translate MIDI songs (commonly available on the Internet or from commercial on-line services) and then play them on an Apple IIGS. If you don't have a "raw" MIDI file, you can experiment with the MIDI Synth songs you already have. Grab one of them from the **:synthLAB** disk (which is one of the disks that came with System 6.0.1) and see if a little surgery will make it sound better . . . or at least different. Use the status window to *see* the number of notes being played. Have fun!

What Are "MIDI" & "MIDI Synth"?

"MIDI" (Musical Instrument Digital Interface) is a series of standards covering the physical connectors, electrical specifications, data formats, communication protocols, and conventions for assigning sounds to instruments. Many different manufacturers sell computer interfaces and musical keyboards that conform to these standards.

Music files in MIDI format contain a series of commands to turn notes on and off, change the tempo, perform special effects such as "bending" pitches and sustaining notes, etc. There can also be embedded text describing copyright information, what instruments should be used, and any other comments the author

wanted to include. The information within the file is divided into tracks, and each track can include information for up to 16 different channels. These channels are typically related to different musical instruments.

"MIDI Synth" is an Apple IIGS tool set that plays a subset of MIDI commands, and the commands are stored in a format that differs slightly from "raw" MIDI. MIDI Synth defines three different types of files:

- 1) The sequence file. Sequence files contain the MIDI Synth commands needed to play a song.
- 2) The instrument bank file. These files define the characteristics of up to 16 different instruments.
- 3) The wavebank file. This is a file which contains 64K of waveform information used by the instruments defined in the instrument bank file.

MIDI Surgeon is not just for users who have MIDI equipment. Any IIGS owner can have fun with this program.

Along with the MIDI Synth tool set, Apple released "synthLAB," a program that allows users to play MIDI Synth songs and modify the instruments used by those songs. The synthLAB application is included on the **:synthLAB** disk that comes with System Software v6.0 and System Software v6.0.1.

Now that we've got a basic idea of what we are working with, let's look at how to install and use MIDI Surgeon.

Installation

MIDI Surgeon comes with the following files:

MIDISurgeon - the GS/OS application file (executable program). You can place it in any folder that is convenient: in its own folder, with other music programs, with utility programs, or in a folder with MIDI and/or MIDI Synth music files. MIDI Surgeon will create a file to record its preferences in the "@:" directory, this is usually the same folder that contains MIDI Surgeon (except on networked systems that boot over AppleTalk).

MIDI.bnk - a new MIDI Synth instrument file to help make translations smoother. I put all of my instrument files into a single folder so I can find them easily. Many MIDI Synth players require that the instrument file be in the same folder as the sequence file that uses it (MIDI Surgeon does not), so you may need to make multiple copies of **MIDI.bnk** if your songs are spread out among multiple folders.

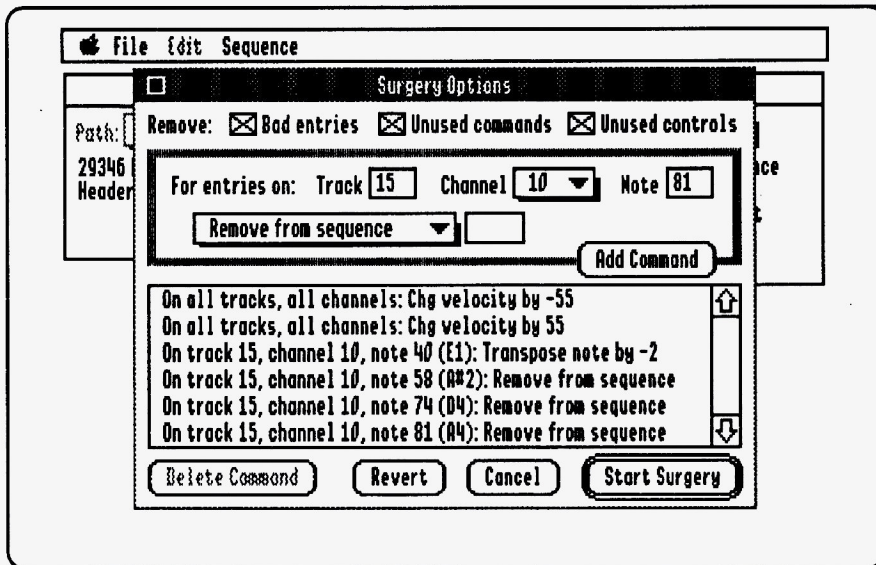
MIDI.wav - the MIDI Synth wavebank file that goes along with the instrument file. It must be located in the same folder (or folders) as **MIDI.bnk**.

midi2gs - a GS/OS shell application file, that only runs under ORCA or GNO. You can place this in any folder, but will probably want it in prefix **17:** for ORCA and **:usr:local:bin** for GNO. You cannot use this program if you do not have a shell to run it from. (Due to space limitations, the **midi2gs** utility is in the self-extracting archive on your *GS+* Disk. Also note that you don't *need* **midi2gs** to use MIDI Surgeon! **midi2gs** is a completely separate program that may be of interest to users that like to work from a command shell. If you don't know what that means, just forget about **midi2gs** and just work with the MIDI Surgeon application.)

liberty.mid - a sample "raw" MIDI file. You could create a **MIDI** folder to hold raw MIDI files, or you could lump the "raw" and MIDI Synth sequence files together in a single folder.

If you want, you could just run MIDI Surgeon from your backup copy of your *GS+* Disk. However, it's recommended that you install it on your hard drive. If you wish, you can copy the above files, using the Finder, to whichever folders you desire. All of the MIDI Surgeon files are in the **Programs** folder on your *GS+* Disk. (You could start simply and put all of these files in the same folder. As you collect more MIDI and MIDI Synth files, you can spread them out into additional folders that are named to describe the type of music.) Or you can use the Installer program that is on your *GS+* Disk to do the job for you.

To install the files using the Installer, read over the example in "How to Use Your *GS+* Disk" and then run the Installer. When you run the Installer, you will see two installation options related to MIDI Surgeon: MIDI Surgeon, and Sequences.



Each of these installation options installs pretty much what its name implies. The MIDI Surgeon option installs the MIDI Surgeon application program along with the **MIDI.bnk** and **MIDI.wav** files, and the Sequences option installs the **liberty.mid** sample MIDI file. For more information on each of these installation options, select it in the Installer and then click on the Help button.

MIDI Surgeon Basics

The basic steps of using MIDI Surgeon to create MIDI Synth files from "raw" MIDI files are very simple. Here's all you need to do:

1. Get a MIDI file.

MIDI files are available from a variety of sources, including on-line services and Internet FTP sites. They usually have a ".mid" suffix. On GEnie, the MIDI library can be accessed from page 430. An FTP location with lots of files is monash.edu.au in the directory /pub/midi/SONGS/. Folks with a World Wide Web browser (like "Lynx" on GEnie or Delphi) should look at <http://www.hk.net/~prs/midi.html> for classical songs in MIDI format.

2. Set the correct file type.

After you get a raw MIDI file, you must make sure that it has the correct Apple IIGS file type or it will not be recognized by MIDI Surgeon. The correct file type is hexadecimal \$D7 (decimal 215). (The auxiliary type should be zero.) You can use the NoDOS new desk accessory (last published in GS+ V4.N4) or your favorite shell (ORCA, GNO, ProSel) to set the correct file type. (Note that the sample MIDI file on your GS+ Disk already has the correct file type.)

3. Use MIDI Surgeon to translate the file.

Launch MIDI Surgeon just as you would any other desktop application. Use the

Open MIDI menu item in the File menu to open the raw MIDI file you want to convert, then click the Translate button in the MIDI File window to create a MIDI Synth sequence.

4. Make it sound good.

Now the artistic part of the conversion begins! Select from your various instrument files (you'll find some good "starter" instrument files on the :synthLAB disk—they will have the file name suffix ".bnk") and find instruments that sound just right with your song. You will probably need to either assign instruments to tracks (using the Tracks menu item in the Sequence menu) or perform surgery in order to override the instrument (or "channel") numbers in the original song. Use the Analysis menu item in the Sequence menu to understand how notes are assigned to tracks, and to

help decide what sort of additional surgery might be necessary (for example, to improve the loudness of the notes). (For more on improving the sound of your converted songs, see the section "That Sounds Funny" below.)

5. Save the Sequence.

After everything sounds just right, use the Save Sequence menu item (in the File menu) to save your MIDI Synth sequence. Package several of your best songs together and upload to your favorite on-line service, or to the Internet.

What's New in Version 2?

Once you've gotten the hang of the basic process of converting a MIDI file to a MIDI Synth song, most of MIDI Surgeon's other options will seem pretty straight-forward. However, there have been a lot of things added since version 1.0 that might not be completely obvious, so let's take a look at those new items now.

New Surgery Features

The surgery window (see first screen shot) has changed significantly from v1.0. As before, you bring up the surgery window by selecting the Surgery menu item from the Sequence menu. At the top of the window, three check boxes allow you to remove bad entries (those containing invalid data), MIDI commands that cannot be executed by the MIDI Synth tool set (Polyphonic Pressure, Channel Pressure, System Common, and Real Time Events), or MIDI controls that are ignored by MIDI Synth (all except Main Volume, Sustain Pedal, and All Notes Off). Table 1 shows MIDI Synth commands and controls.

Table 1: MIDI Synth "Status Byte" (Command) Values

The surgery operations can selectively make changes based upon the type of MIDI Synth commands contained in the sequence.

Value (Hex)	Command
00	Sequencer: marker
01	bad entry
02	Sequencer: set beat
03	bad entry
04	Sequencer: set tempo
05 to 7F	bad entry
80 to 8F	Note Off
90 to 9F	Note On
A0 to AF	Polyphonic Pressure; unused by MIDI Synth
B0 to BF	Set Controller Value
The only controls used by MIDI Synth are:	
	Main Volume (7)
	Sustain Pedal (64)
	All Notes Off (123 to 127)
C0 to CF	Program Change
D0 to DF	Channel Pressure; unused by MIDI Synth
E0 to EF	Pitch Bend
F0 to F7	System Common; unused by MIDI Synth
F8 to FF	Real Time Events; unused by MIDI Synth

The rectangle below the "remove" check boxes contains controls to construct a surgery command. The first line lets you specify the track, channel, and/or note to which the command applies. The Track field is a small LineEdit box in which you can type a number; any text that isn't a number between 1 and 255 is interpreted as meaning "all." The Channel field is a pop-up menu containing all the legal channel values (1 through 16 or "All"). The Note field is another LineEdit box that accepts values from 0 to 127, or in a "note-octave" format, such as "D#3" for D-sharp in the third octave. The second line in the command rectangle has a pop-up menu to pick a command and a LineEdit box to specify the parameters used by some commands.

After you create a command (we'll see an example of how to do this in a little while), click the "Add Command" button to add it to the list immediately below the command rectangle. If there is an error (if you specify a bad destination channel, for example), MIDI Surgeon presents an error message rather than adding the command to the list. If you detect a mistake in a command after it is entered, you can remove it from the list by highlighting it and clicking the "Delete Command" button in the lower left of the window. If you want to cancel the entire surgery, click the "Cancel" button. If all commands have been entered and you want to proceed, click the "Start Surgery" button. Table 2 lists all of the surgery commands that are available.

Surgery commands execute in the sequence you enter them for all entries that match the track, channel, and note criteria at the time of execution. This means that changes introduced by earlier commands can affect whether an entry is affected by later commands.

Table 2: Surgery Commands

Commands marked with an asterisk ("*") are new for version 2.0 of MIDI Surgeon. All commands that have a trailing "..." use the command parameter field.

Change channel to...
Change track to...
* Change velocity by...
* Multiply velocity by %...
* Transpose note by...
* Remove from sequence
Remove pitch bend
Remove sequencer message
Remove program change
Remove controller #...

At the conclusion of the surgery, commands are cleared from the list. You can listen to the results and decide whether to perform more surgery or to close the window. If you don't like the results of the last surgery, click the "Revert" button to bring back the pre-surgery sequence. Click it again to restore the post-surgery version.

New Surgery Commands

MIDI Surgeon v2.0 adds new commands to change the velocity (or loudness) of entries, to transpose notes being played, and to remove entries from the sequence.

Sometimes the notes in a MIDI song play too softly because they were recorded with low values for the "velocity," which indicates how loudly "Note On" commands should be played. Version 2.0 of MIDI Surgeon lets you change the volume in two ways: adding or multiplying. The addition (or subtraction, if a negative number is provided) changes the velocity by the command parameter value. The multiplication option uses that value as a percentage (over 100 to increase, under 100 to decrease); for example 200% would double all velocities. For both types of calculations, the velocity is clipped to a

maximum value of 127 and a minimum value of 1. You can see what the range of velocities for each track/channel is by running an analysis on the current sequence (pick the Analysis menu item from the Sequence menu to run an analysis). With this information in hand, you can easily tell how much you need to add in order to reach the maximum.

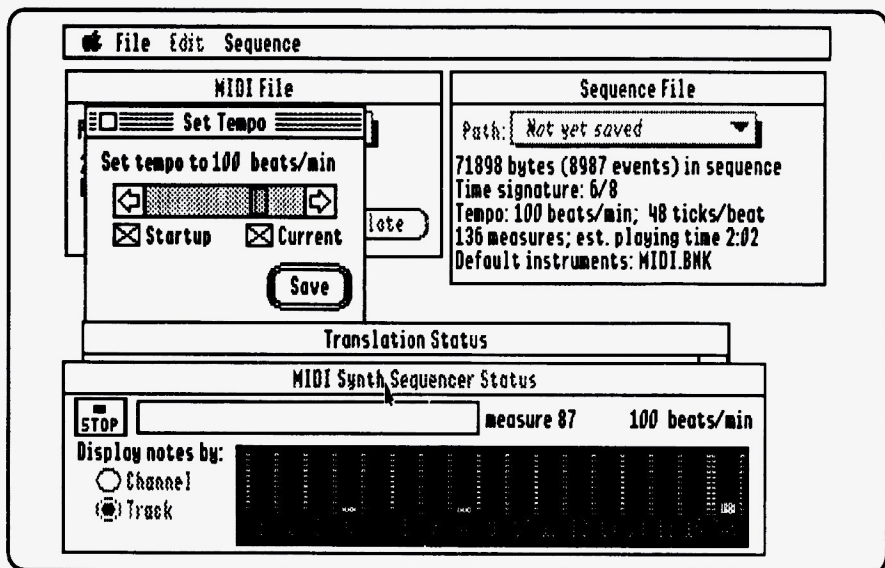
The transpose command increments (or decrements for a negative value) the note value of Note On and Note Off commands. You can use this to change the key of an entire song or to change a "drum kit" note so that a different effect is generated. This is often necessary to match the percussion instruments provided by Apple with the General MIDI standard. (For more on this, see the "That Sounds Funny" section, below.) The command parameter value indicates the number of half steps by which the notes will be changed.

The removal command lets you get rid of MIDI Synth commands entirely. I suggest you first move unwanted commands to a track that was disabled using the Tracks menu item of the Sequence menu. If the music sounds fine without them, remove everything on that track in order to save space in the file.

Status and Tempo

There are two new items in the Sequence menu, Status and Tempo, each of which brings up its own window.

The MIDI Synth Sequencer Status window (see second screen shot) allows you to stop and restart the playing of a song. The "PLAY" button starts playing the song at the current measure and with the current tempo. While the song is playing it turns into a "STOP" button. It can also be toggled by pressing the space bar. (The Play menu item in the Sequence menu plays the song from the beginning using the startup tempo.) The current measure number is reported next to a scroll bar that can be used to change it. Across the bottom of the status window



are 17 meters showing the number of notes being played by each track or channel, plus the total number of notes. The MIDI Synth sequencer can play no more than seven notes at a time and must steal time from other notes when it goes over that limit. For this reason, the meters are green at seven notes and below, but are red when more notes are played. When you see too much red or notes seem to sound clipped, it's time to figure out if any of the tracks can be turned off without losing important notes.

The current tempo is reported in the status window, but, if you want to change it, you must use the Set Tempo window (see second screen shot). Selecting the Tempo menu item from the Sequence menu will bring up this window. The window contains a scroll bar that lets you easily set the new tempo. Below the scroll bar are two check boxes and a "Save" button. To change the tempo, you merely change the value using the scroll bar and then click the Save button. The check boxes allow you to specify where you want the tempo change to be applied. If the "Startup" check box is checked, the tempo value that is stored in the song itself will be changed. If the song is currently playing, the tempo won't change. However, the next time you play the song, it will play using the new tempo. If the "Current" check box is checked, and a song is playing, the tempo of the song will change immediately.

That Sounds Funny

When you first play a translated MIDI file it may sound . . . peculiar. The MIDI standard does not say which instruments are associated with each channel, so you might be playing a guitar on a track that was meant for a tuba. Even stranger sounds occur when a melody line is played by a percussion instrument . . . or vice-versa. So, let's look at why this might happen, and what you can do to work around it.

General MIDI

In order to match the right sounds to each channel, manufacturers have agreed upon a "General MIDI" standard that utilizes the "Program Change" command to assign an instrument to a channel. Each of the 128 possible program numbers correspond to a particular pre-defined instrument. For example, "0" is an Acoustic Grand piano, "19" is a Church Organ, "56" is a Trumpet, "71" is a Clarinet, and "105" is a Banjo. (If you are curious, all 128 instrument names are included in the source file *Surgery.c*, which is in the self-extracting archive on this issue's *GS+* Disk.) Sequences following the General MIDI standard will typically include a

Program Change on each track and channel near the beginning of the song, to set up the appropriate instruments.

General MIDI also defines a percussion "map" for notes on channel 10, as shown in Table 3. So, playing consecutive keys on General MIDI channel 10 does not produce a scale; instead, you hear a series of different drum sounds.

MIDI Surgeon reports embedded General MIDI information in the Sequence Analysis window. When a channel contains a Program Change command, MIDI Surgeon lists the program number and the name of the General MIDI instrument. For channel 10, MIDI Surgeon reports which percussion notes are used.

Using the correct percussion keys with MIDI Synth is tricky. Apple provides three different sets of percussion sounds in their instrument files: Drum Kit 1 is instrument 1 in the *Combo.bnk* file, Drum Kit 2 is instrument 10 in *Combo.bnk* and Drum Kit 3 is instrument 1 in the *Synth.bnk* file. Table 4 shows the waveforms used by each of these drum kits.

A close look at Drum Kit 3 as used by the song *Synth.Seq* (which is provided with synthLAB) shows that the following percussion keys are used:

Note	Drum Kit 3 Sound
43	Bass drum
52	Snare
60	Toms
77	Clap
85	Hi-Hat 1
87	Hi-Hat 2
89	Hi-Hat 3

If you want to use Drum Kit 3 with a General MIDI song, map the percussion track to play instrument 1 and change the General MIDI notes to the closest matching sound (e.g., transpose "39" to "77" and transpose "38" and "40" to "52"). Some sounds might not map to anything that sounds good in the drum kit, and should be discarded. (If all this seems a bit confusing, it is! That's why I put together the *MIDI.bnk* instrument file. You can just use it if you don't want to mess with trying to clean up Apple's instrument files. *MIDI.bnk* isn't *exactly* perfect for General MIDI, but it's about as close as you can get with MIDI Synth.)

New Instrument File

Apple provides five different instrument bank files with synthLAB (see Table 5). Because I often wanted them combined in a different way, I used waveLAB (a freeware program I wrote which is available on many FTP sites and is in the GENie A2 library as file number 22,783) to cut the most useful instruments from several different files and place them into

Table 3: General MIDI Percussion Notes

The General MIDI standard assigns these drum sounds to notes on channel number 10. (Note that notes are shown in "note-octave" format. For example, "C#3" means a "C-sharp in the third octave.")

Note	Sound	Note	Sound
35 B0	Acoustic Bass Drum	59 B2	Ride Cymbal 2
36 C1	Bass Drum 1	60 C3	Hi Bongo
37 C#1	Side Stick	61 C#3	Low Bongo
38 D1	Acoustic Snare	62 D3	Mute Hi Conga
39 D#1	Hand Clap	63 D#3	Open Hi Conga
40 E1	Electric Snare	64 E3	Low Conga
41 F1	Low Floor Tom	65 F3	High Timbale
42 F#1	Closed Hi-Hat	66 F#3	Low Timbale
43 G1	High Floor Tom	67 G3	High Agogo
44 G#1	Pedal Hi-Hat	68 G#3	Low Agogo
45 A1	Low Tom	69 A3	Cabasa
46 A#1	Open Hi-Hat	70 A#3	Maracas
47 B1	Low-Mid Tom	71 B3	Short Whistle
48 C2	Hi-Mid Tom	72 C4	Long Whistle
49 C#2	Crash Cymbal 1	73 C#4	Short Guiro
50 D2	High Tom	74 D4	Long Guiro
51 D#2	Ride Cymbal 1	75 D#4	Claves
52 E2	Chinese Cymbal	76 E4	Hi Wood Block
53 F2	Ride Bell	77 F4	Low Wood Block
54 F#2	Tambourine	78 F#4	Mute Cuica
55 G2	Splash Cymbal	79 G4	Open Cuica
56 G#2	Cowbell	80 G#4	Mute Triangle
57 A2	Crash Cymbal 2	81 A4	Open Triangle
58 A#2	Vibraslap		

a new file, **MIDI.bnk**. Of course, there had to be compromises when I ran short of room for waveforms, so I introduced two new instruments (numbers 15 and 16) that use small waves.

I also tried to lessen the "percussion problem" discussed in the "That Sounds Funny" section by assigning sounds to the appropriate notes on channel 10:

Notes	MIDI.BNK Sound
through 36	Kick (Bass Drum)
37 - 38	Snare
39	Clap
40 - 44	Hi-Hat & Kick
45 - 46	Hi-Hat
47 - 50	Toms
51 - 59	Cymbal
60 & higher	Wood Block

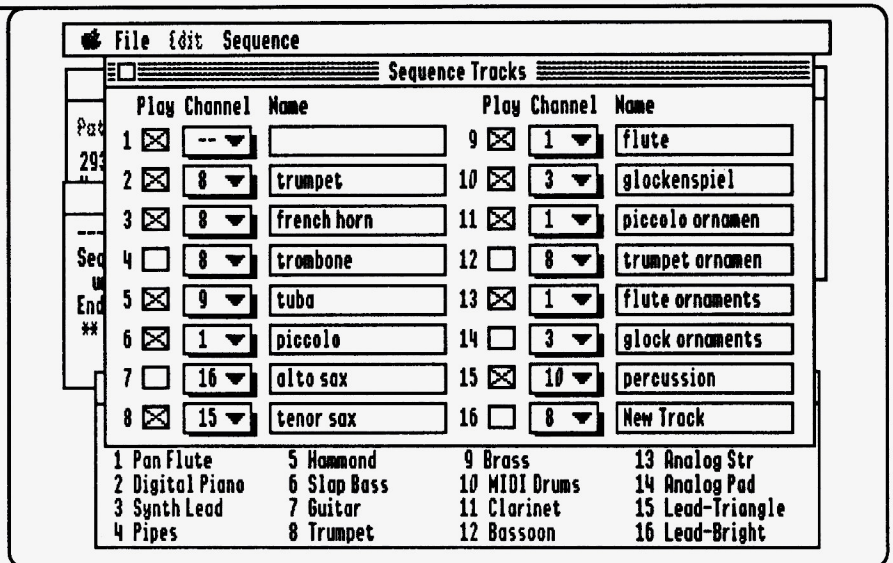
Since the various General MIDI Hi-Hat, Toms, and Cymbal sounds do not occur over a consecutive range of notes, it is still necessary to identify MIDI notes that do not fall within a "good" range and transpose (or remove) them by surgery. (Fortunately, most MIDI songs use only a few of the available percussion sounds.)

Feel free to use **MIDI.bnk** in your translations and distribute it with any songs that you create. (Just be sure to let folks know that it came from **GS+ Magazine!**)

A Sample Translation

We've covered a lot of territory so far. Let's see how you might apply it to translating **liberty.mid**, the sample MIDI file provided on your **GS+** disk.

The first thing to do is open the file by using the Open MIDI menu item under the File menu, then click the Translate button in the MIDI File window. MIDI Surgeon will churn away, spitting out all sorts of information in the Translation Status window. At the conclusion of the translation you can use the Play menu item in the Sequence menu to hear how it sounds. (The song should be familiar to fans of Monty Python or John Philip Sousa.) When you play the song, MIDI Surgeon will automatically open the



default instrument file **MIDI.bnk**. If it's not located where MIDI Surgeon first looks, you will be presented with a Standard File dialog to help MIDI Surgeon find it.

The translation status shows that the person who put the file together gave us a good description of the instruments used on each track. We can use the Tracks menu item under the Sequence menu to assign the closest match in **MIDI.bnk** to each track. When you bring up the Sequence Tracks window, you will notice that MIDI Surgeon has copied the instrument names into the track map. Some of the choices to make for assignments were pretty easy: "Trumpet" for trumpet, French horn, and trombones; "Brass" for tuba; "Pan Flute" for piccolo and flute; and "MIDI Drums" for percussion. There isn't a sax in the instrument file, so I chose the two synthetic "Lead" instruments. There also is no glockenspiel, but the "Synth Lead" has a ringing quality to it. (See the third screen shot.)

With those assignments, the march sounds much better, but the percussion still sounds a bit off and the volume seems too soft in places. In order to address those problems, use the Analysis menu item in the Sequence menu to learn

more about the sequence. Here are the important things I noticed about the sequence:

- The program change names match the comments, so it's compatible with the General MIDI standard.
- Several channels have a maximum velocity of 127, so incrementing velocities in order to make the entire sequence louder would probably compress the sound dynamics at the high end.
- Several tracks have velocities below 50, which is a bit too soft for comfortable listening. So, I suggest using the surgery command:

Change velocity by -55

followed by:

Change velocity by 55

in order to move the quieter notes above 55 without disturbing the notes that are already playing loudly.

- The percussion channel (channel #10) uses notes 36, 40, 57, 58, 59, 74, and 81. (See Table 3 for a description of what sounds these notes represent.) Notes 36, 57, and 59 map into the MIDI Drums instrument, but the "Electric Snare" on note 40 needs to be turned into an "Acoustic Snare" on 38. There are no equivalent sounds for 58, 74, or 81, although the last one ("Open Triangle") seems to fit as a "Wood Block." So, the suggested surgery commands are:

On track 15, channel 10, note 40: Transpose note by -2

Table 4: Apple Drum Kits

Apple's MIDI Synth instrument files contain drum kits that assign sounds to various note ranges. This table shows the waveform names used by each range. In some instances, two different waves combine to form a more complex sound.

<u>Note Range</u>	<u>Drum Kit 1</u>	<u>Drum Kit 2</u>	<u>Drum Kit 3</u>
up through 47 (B1)	Kick	Toms & Kick	Kick
48 (C2) - 55 (G2)	Snare	Snare	Snare
56 (G#2) - 71 (B3)	Toms	Rim & Toms	Toms
72 (C4) - 77 (F4)	Cymbal	Cymbal	Clap
78 (F#4) - 83 (B4)	Hi-Hat	Hi-Hat	Hi-Hat
84 (C5) and higher	Rim	Cymbal & Rim	(Hi-Hat continues)

Apple II Software

Quick Click Morph Puts the G for Graphics Back in Apple IIGs!

You've seen them in movies and commercials, and now your own version of those amazing Hollywood special effects is just a mouse click away. Quick Click Morph starts with two or more pictures from virtually any source and, with a few control points from



you, creates a movie you can play on your Apple IIGs. It even creates 256 color movies without extra hardware!

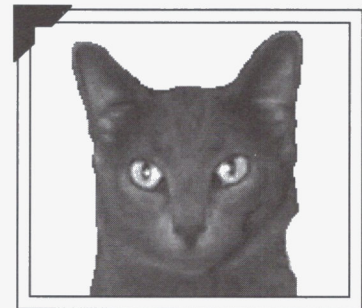
You'll quickly find dozens of uses for morphs. Educators can create morphs showing the evolution of the human skull, stack authors can plug morphs into HyperStudio as attention grabbers, or you can use morphs for the sheer entertainment value.

You can play the morphs you create with any PaintWorks movie player, including the freeware player we include with Quick Click Morph. Our movie player even lets you create movie slide shows! And for those friends or relatives who don't have an Apple IIGs, you can hook a VCR to

your Apple IIGs and record the movie.

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GS-22 Quick Click Morph \$60



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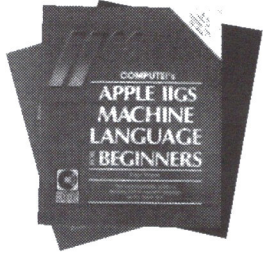
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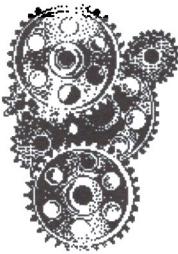
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Table 5: Instrument files

Keep this list of MIDI Synth instrument files handy when you are getting ready to translate files, so you can easily find the "right" instrument.

<u>Channel</u>	<u>Combo.bnk</u>	<u>Demo.bnk</u>	<u>Orch.bnk</u>	<u>Piano.bnk</u>	<u>Synth.bnk</u>	<u>MIDI.bnk</u>
1	Drum Kit 1	Pipes	Pan Flute	Piano	Drum Kit 3	Pan Flute
2	Slap Bass	Voice	Clarinet	Honky Tonk	Slap Bass	Digital Piano
3	Synth Lead	Kybrd	Harp	Steel Piano	Pan Flute	Synth Lead
4	Marimba	Dx Hpsd	Hard Strings	Piano Pluck	Flute 1	Pipes
5	Xylophone	Wood Flute	Bassoon	Hpsd	E. Piano swell	Hammond
6	Flute	Analog Str	Med Strings	Icnc	Hammond	Slap Bass
7	Trombones	Lead Guitar	Trombones	Strange	Brass	Guitar
8	Chiff Flute	Glass			Trumpet 1	Trumpet
9	Dx Marimba	Clarinet	Soft Strings		E. Piano	Brass
10	Drum Kit 2	Guitar	Orchestra		Digital Piano	MIDI Drums
11		Hammond			High Piano	Clarinet
12		FeedBack			Analog Pad	Bassoon
13		A Bass			"Doo"	Analog Str
14		Guitar 5ths				Analog Pad
15		Accordion				Lead-Triangle
16		Trumpet				Lead-Bright

On track 15, channel 10, note 58: Remove from Sequence

On track 15, channel 10, note 74: Remove from Sequence

On track 15, channel 10, note 81: Remove from Sequence

• Track 16 only contains a couple of notes, and listening to them with most other tracks turned off reveals that they aren't useful. So the suggested surgery command is:

On track 16, all channels, all notes: Remove from Sequence.

After performing the surgery, the march sounds pretty good, but there are still places where the notes seem to be clipped. This isn't surprising, considering there are 14 tracks and the MIDI Synth sequencer can only play seven notes at a time. The MIDI Synth Sequencer Status window display meters show the song goes over the seven note limit (into the "red zone") several times, particularly toward the end of the song. After trying various combinations, I found that tracks 4 and 8 duplicate one another, as do 3 and 7. Although it's nice to have two different instruments playing the same line, it's even better to avoid too many notes playing at once. I also decided I didn't need all those ornaments! The track numbers I turned off (by un-checking their "Play" boxes in the Sequence Tracks window) were 4, 7, 12, and 14. Turning off those four tracks made the song sound better to me, but you might find another combination that pleases your ears.

After deciding what tracks aren't necessary, you can either leave them in but turned off or remove them permanently with the surgery command:

On track n, all channels, all notes: Remove from Sequence.

Removing tracks 4, 7, 12, and 14 would reduce the size of the sequence file by more than 14,000 bytes.

After you make these changes, the song should sound *much* better. But, if you still don't like the sound, don't be afraid to keep experimenting!

Hints & Techniques

Here are a few things I've learned from using MIDI Surgeon to translate songs:

Review the translation status comments. The person who created the MIDI file may have included information on instrument assignments that is not entirely translated into the track map, particularly for tracks higher than 16. These comments might be different from the Program Change commands in the song, especially if the song was not generated on General MIDI equipment. So, always review the contents of the Translation Status window after you translate a MIDI file.

Add enough to the velocity of all notes to bring the maximum up into the 120s. Perform an analysis of the sequence and look at the maximum velocities of all the channels. If none of them are above 120 (the absolute maximum is 127), the instruments will probably play too softly. You don't want to disturb the balance of velocity between different tracks and channels, so change the velocity of all notes on all channels with something like:

On all tracks, all channels, all notes: Change velocity by 30.

Make the minimum velocity no lower than 50. Any note played with a velocity less than 50 will be hard to hear. Unless the song has a fade at the end, you will want all of the notes playing in a range where you can hear them clearly. If the maximum is 127 but some channels have notes below 50, you can use two consecutive surgery commands to first subtract 50 from the velocity of all notes, then add back the 50. (We did something similar to this in the example we looked at earlier.) The subtraction will clip all of the low velocities at 1, then the addition will move them back above 50 without disturbing the relative velocities of other notes.

Put each instrument on a separate track. On MIDI files that have several channels on a single track you cannot use the Sequence Tracks window to assign instruments to each channel. Use surgery commands to move each channel to its own track in order to make experimentation easier.

Remove unused commands and controls. Some MIDI files contain a lot of commands or controls that you cannot use on your IGS and just take up space. Note that these are normally removed by surgery unless you un-check the boxes at the top of the Surgery Options window.

Little Things Mean a Lot

Like all good IGS programs, MIDI Surgeon lets you open a file by double-clicking on it in the Finder. This means when you double-click on a "raw" MIDI or MIDI Synth sequence file icon in the Finder, MIDI Surgeon will start and

automatically open the file you double-clicked on. (Actually, you have to run MIDI Surgeon from the Finder at least once before this will work.)

MIDI Surgeon uses a preferences file, **@:MIDISrgn.pref**, to hold the names of folders where you keep the MIDI, sequence, instrument, and text files that you open and save. These folder names are set every time you open or create a file of a particular type, and the changes are written to the preferences file when MIDI Surgeon quits. If you put all of your instrument and waveform files into a single folder, after you open one instrument, MIDI Surgeon will search that folder when it needs to open another. You can also keep copies of the instrument and waveform files in the same folder as the sequences that use them.

Shell-based midi2gs

MIDI Surgeon started out as a much smaller, non-desktop program that could only be run from a shell (such as the GNO or ORCA shell). Because some people

would prefer to do their translations in "batch" mode from a shell script, without manually opening each MIDI file one at a time, that original program, midi2gs, is provided on your **GS+** Disk. You can run it from the GNO or ORCA shell by typing:

```
midi2gs [-v | -V | -h] [MIDI file]
[MIDISynth file]
```

where the vertical bars indicate that you can specify one of the following program options: -v for verbose status messages, -V for very verbose, and -h to get help information instead of executing the command. If you leave out the file names, the [MIDI file] is read from standard input and the [MIDISynth file] is written to standard output. Error and status messages are sent to standard error. Because midi2gs is written in portable C and does not make GS/OS file system calls, the resulting sequence file will not have the correct ProDOS file type. So, you will need to change its file type to \$D5 and its auxiliary type to 0. (You

could write a simple shell script to call midi2gs and then do the file type change automatically.) After doing the translation with midi2gs, you can run MIDI Surgeon on the sequence file to assign instruments and perform surgery.

Go For It!

With MIDI Surgeon and midi2gs, you have the capability to turn music someone else has slaved over into a file that all IIGS users can enjoy. Because MIDI is such a widespread standard, you can find files for any type of music . . . Classical, Country & Western, Jazz, Rock, New Age, Religious, Show tunes, Baroque, Rag Time . . . whatever suits your fancy, it's out there! The **MIDI.bnk** instrument file makes it easier than ever to get the right sound, and you have even more instruments available in the files that Apple ships on the **:synthLAB** disk.

So, find yourself some MIDI files and go crazy! Just be sure to send some of those cool tunes our way when you get finished!
GS+

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Do you like EasyMount? Me too. But, I'll bet that, like myself, you've always secretly wished that EasyMount could make aliases for *documents* as well as being able to make aliases for applications, folders, hard drives, and file servers. Well, your wish has come true!

DocAlias is a Finder extension that takes over where EasyMount leaves off by allowing you to create aliases for document files! With DocAlias installed you can make aliases to your most frequently used documents and then open those documents by opening the aliases!

Installing DocAlias

Before we talk about how to use DocAlias, we've got to get it installed on your system. To install DocAlias, read over the example of how to use the Installer in the "How to Use Your GS+ Disk" article. Then, run the Installer and follow the same steps you would follow to install EGOed lite, right up to the point where you restart your IIGS. (DocAlias is a Finder extension, so it has to go on your startup disk, just like EGOed lite.) After you get back to the Finder, we'll take a look at . . .

Creating a Document Alias

Since DocAlias is a Finder extension, it will appear in the Finder's Extras menu. When a file is selected, the Make Document Alias menu item will be enabled. When you choose this menu item, a Standard File dialog will appear. You can then use this dialog to tell DocAlias where you want the new alias file saved. Once the alias file has been created, you can double-click on it just as you would the original file.

An Example

As an example, let's make and use an alias to one of the files on your backup GS+ Disk. Just follow these steps:

- 1) Install DocAlias as described above. Also, install EGOed lite. (EGOed lite is *not* needed to use DocAlias, but we will be using it in this example.) After both programs are installed, reboot your IIGS.
- 2) Run the Finder and put your backup GS+ Disk in a drive.
- 3) Double-click on the GS+ Disk to open it and then double-click on the folder called **Documentation** to open it.
- 4) Inside the **Documentation** folder should be a file called **EGOed.lite.Docs**.

Click the mouse on this file *once* to select it. (Don't *double*-click on the file!)

5) Pull down the Extras menu and select the Make Document Alias menu item. (If this menu item isn't enabled, make sure the **EGOed.lite.Docs** file is selected.) When the Standard File dialog appears, click on the Disks button and open your boot drive. Type the name "EL.Docs.Alias" into the Standard File dialog and then click on the Save button to save the alias file on your boot drive. That's all there is to making an alias! Now let's see how you would use it.

Using an Alias

To test the alias you just created, open your boot drive and double-click the mouse on the alias file. If you installed EGOed lite, it should open the **EGOed.lite.Docs** file that is on your GS+ Disk. That's all there is to it!

That's It!

I tried and tried to find more to say about DocAlias, but using it is really that simple. Just select your file and then choose the Make Document Alias menu item. In order to make DocAlias so easy to use, there is a lot of behind-the-scenes stuff going on. If you're a programmer and interested in these technical aspects, then read on! If you just want to use DocAlias, you can stop reading here and start making some aliases. (And be sure to check out "Find Original v1.1" and "Launch Alias" elsewhere in this issue.)

DocAlias Documents

I guess a brief discussion of a DocAlias document is in order here. The in-depth description of DocAlias documents is in a file type note on your GS+ Disk (it's in the self-extracting archive). There are basically three things contained in a DocAlias document: the original file's file type, the original file's auxiliary type, and the pathname to the original file. The first two items (file and auxiliary types) are currently unused by DocAlias. When DocAlias needs to do any work, it first checks to see if the original file exists by using the GS/OS `GetFileInfo` call, which returns the current file type and auxiliary type of the file. This way, in case this information ever changes for a file after an alias is created, DocAlias can properly handle it. So, why keep this file type information in the alias file? The answer is "for those times when it's inconvenient (or impossible—like when GS/OS is busy) to perform a `GetFileInfo` call and you need the

info." Also, DocAlias may not always be the only program that processes DocAlias documents, so other programs should have a way to get this information without calling `GetFileInfo`.

Inner Workings

Creating a DocAlias document is very simple: You just write out the three pieces of information to the DocAlias document file. The tricky stuff comes into play when you try to open an alias file. The Finder first sends a `finderSaysBeforeOpen` request. When DocAlias receives that request, it checks to see if the file is an alias file and, if so, the file is queued for later processing. (DocAlias would process the file immediately, but DocAlias must send other requests to the Finder, and sending those requests at `finderSaysBeforeOpen` time will not work. So, they are deferred until the next `finderSaysIdle` request, when it is legal to send requests to the Finder.) When the `finderSaysIdle` request is received, all queued files are processed. First, the alias is resolved (i.e. the original file is found) and a `finderSaysBeforeOpen` request is sent with the information for the original file. If the request is accepted, the next queued item is processed. However, if the request is not accepted, a `tellFinderMatchFileToIcon` request is sent to see what icon is displayed for the file. The result of that request not only gives the icon to be displayed, but also more important information like the pathname of the application which owns the document. If an owning application is found in this information, the original document pathname is added to the message center and the `tellFinderLaunchThis` request is sent to instruct the Finder to launch the owning application. If no owning application is found, a `finderSaysOpenFailed` request is sent and then the next item is processed.

DocAlias also performs one other important task. When the Finder is shutting down, the message center already contains the pathnames of documents to open or print if an application is about to be launched. DocAlias goes through each item in the message center and resolves any alias pathnames it finds there. That way, an application will never see a DocAlias document, no matter what.

That's basically everything there is to DocAlias. If you have any questions about it, let me know! **GS+**

Find Original v1.1

By Josef W. Wankerl

Since DocAlias creates its own type of alias files, I figured I had to change my Find Original program (last seen in *GS+ V6.N1*) so that it can properly find the original document pointed to by both DocAlias and EasyMount documents. I also changed what happens when the original file can't be found: a dialog showing the pathname of the non-existent original file is shown. In version 1.0, Find Original would just beep. Now, for those of you who don't know what Find Original is, read on!

When System Software v6.0 arrived on the scene, a new system extension, EasyMount, allowed users to create an alias to their file servers. Simply opening the alias file would mount the server and bypass the need to go into the AppleShare control panel. When System Software v6.0.1 was released, EasyMount was enhanced to create alias files which pointed to hard drives, folders, and applications. Simply opening the alias file would open the hard drive or folder, or launch the corresponding application. Starting with this issue of *GS+ Magazine*, DocAlias can create alias files which can point to anything that EasyMount can't. (See the "DocAlias" article for more on this.) Alias files are a great concept but, after a while, you tend to forget where all of your original files (the ones your aliases point to) are! Of course, on the Macintosh the ability to find these original files is built right into the Finder. (With the Mac, there's a Find Original button when you get information on an alias file.) To bring the IIGS up to par in this area, I wrote Find Original.

Finding Originals

Find Original is a Finder extension which

appears in the Finder's "Extras" menu. When an alias file (either an EasyMount or DocAlias document) is selected, the Find Original menu item is enabled. When you choose the Find Original menu item, the file that the alias points to is found. The folder containing the original file is opened and the file is selected. If the file can't be found, a dialog will appear alerting you to the fact, and telling you exactly where Find Original tried to find the file. Pretty simple, eh?

For example, if you were to select the **EL.Docs.Alias** file that was created as an example in the "DocAlias" article, and then you pick the Find Original menu item, Find Original will open the folder on your *GS+* Disk that contains the **EGOed.lite.Docs** file. It will also select the **EGOed.lite.Docs** file for you!

Installing Find Original

To install Find Original, just read and follow the same instructions you would use to install EGOed lite or DocAlias. Since Find Original is a Finder extension, it goes on your startup disk just like EGOed lite and DocAlias.

If you are just interested in using Find Original, you can stop reading here. (But, be sure to read the articles "DocAlias" and "Launch Alias" elsewhere in this issue.) If, however, you want to know more about how Find Original actually works, keep reading!

EasyMount Documents

The official description of the file format for EasyMount documents (otherwise known as alias files) isn't complete. After a few unanswered e-mails to friends at Apple, I got fed up with not knowing the

format and took apart a few alias files to see what made them tick. The first part of an alias file is documented in a file type note which is on your *GS+* Disk (in the self-extracting archive). However, with the System 6.0.1 version of EasyMount, there is more information stored in an alias file than is described in the file type note. After tinkering with the alias files for a while, I'm pretty sure I know what the rest of the file description is. Immediately following the documented content of an alias file there is a word (two bytes) which specifies whether the alias points to an item on a local disk or on a file server. If the alias points to an item on a local disk, the word's value is \$0001. If the alias points to an item on a server volume, the word's value is \$0002. Following the local/server word is a complete pathname to the item the alias points to. (In case you want to know the format of DocAlias documents, that file type note is also on your *GS+* Disk in the self-extracting archive.)

Finding Originals, Yet Again

With the EasyMount and DocAlias document file contents known, it was pretty simple to extract the pathname to the original item. From there, the folder which contains the item is opened, and then the item is selected by sending a few requests to the Finder.

That's everything there is to Find Original. I hope you find it as useful as I have! If you have any problems with or questions about Find Original, be sure to let me know! *GS+*

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Mr. Priceguide Investigates VGA Monitors

By Erik "Lurch" Kloeppel

What the heck am I doing discussing VGA (Video Graphics Array) monitors in a magazine dedicated to the Apple IIGS when everybody knows the IIGS requires an RGB monitor? Let me explain . . .

Common lore has it that the "G" in "IIGS" stands for "graphics," yet for years I've chafed at the monitor and graphics hardware we've been forced to use. One need only look at any other computer on the market today to understand what I'm getting at. Who else but a IIGS owner would be satisfied with a 12-inch RGB monitor, attached to hardware that has to be intensively tweaked just to get a measly 3,200 colors on screen?

Granted, when the IIGS was introduced the PC market was suffering with EGA graphics, which were pretty awful. And our hardware limitations have lead some programmers to dizzying heights, pushing the hardware far beyond its original design specs. But we're far, far behind the field today.

Or, we *were*. By the time you read this, the Sequential Systems "Second Sight" card will be shipping in quantity, opening the world of VGA graphics to us forgotten IIGS owners. (See review of the Second Sight card elsewhere in this issue.)

And, since in my book the purchase of a Second Sight card for my IIGS is a forgone conclusion, I need to decide which VGA monitor to hang off it.

But Why, Daddy?

Why is buying a VGA monitor a forgone conclusion? Actually, if you don't regularly use a VGA monitor, you may not understand the need for one. The graphics and text on the IIGS are what you are used to, so you don't feel anything needs to change. For a real dose of culture-shock, though, set up your IIGS monitor next to any VGA monitor. By comparison, the IIGS screen looks, well . . . bad. It's not just the "depth" of the screen (the number of colors displayed), but the lines on a VGA monitor are narrower, and even the text is sharper, and easier to read.

Unfortunately, buying a VGA monitor is not like buying a new mouse for your IIGS. It's even worse than buying a new SCSI hard drive! You have to worry about all kinds of weird things, from the monitor's scan rate to whether it's

"interlaced" or not. Let's begin our journey with a look at what some of these new terms and numbers really mean.

Vital Statistics

We'll start with the density of phosphor dots on the screen. Phosphor dots are used to create the *pixels* (short for "picture elements") that you see on screen. Each pixel is made up of three phosphor dots: one for displaying red, one for green and one for blue. (When the intensity of each phosphor dot is set to a different level, they mix and give an individual pixel its particular color.) The density of the pixels on the screen is usually measured as "resolution." Resolution is essentially the number of pixels on the screen, measured across, then down. So, let's say a hypothetical 17-inch monitor is capable of displaying at least 1,024 pixels across the screen, and 768 down the screen. That's a lot of pixels (786,432 to be exact), but how does it relate to the number of phosphor dots? The explanation can get a bit involved, but here goes . . .

First of all, I have to point out that there are two different technologies when it comes to creating the color phosphor dots themselves, and these differences make a difference in the final resolution of the screen.

The most common technology is called "shadow mask." On a monitor with shadow mask technology, circular red, green, and blue phosphor dots are arranged in a repeating triangular pattern, and each phosphor threesome is called a "triad." (See Figure 1.)

On the other hand, monitors using Sony's Trinitron tube technology use what is called a "stripe mask," where the phosphor is laid out in repeating patterns of short vertical stripes. (See Figure 2.)

This distinction is important, because the two methods are *not* equivalent. That is, a pitch of .26mm on a stripe mask monitor is not the same as a .26mm pitch on a shadow mask monitor. What the heck do I mean when I say "pitch?" The pitch, or "dot pitch" on a shadow mask monitor, is the distance between the center of one phosphor dot and the center of the nearest phosphor dot of the same color. On a shadow mask monitor this is usually a diagonal measure, not horizontal or vertical. On a stripe mask monitor, the

measurement is always horizontal from center to center. (Reference Figures 1 and 2 for some visual help with all of this fun stuff.) Anyway, I'll return to this inequality in a moment.

Now, a little thought will reveal that if you want to display a white pixel, you have to light up all three of the phosphor dots in a "triad"—one red, one blue, and one green. However, (according to an exceptionally good article in the June 1995 issue of *The Computer Shopper*) a good image requires that you actually light up a little *more* than one triad. The rule of thumb is that, for a good image, you need to light up 1.3 triads for each pixel you want to display. If more are lit, the image will be chunky. If fewer are lit, detail will be lost.

To see how closely a monitor you are interested in follows this rule of thumb, you need to do some math, and you need to know two things about the monitor you are looking at: the viewing area, and the resolution of the monitor.

For example, a 17-inch monitor has a viewing area that's usually about 310mm wide. So, assuming a resolution of 1,024 pixels, we divide 310mm by 1,024 pixels and you come up with a pixel that's about .3mm wide. (Don't forget: each pixel is made up of one of our phosphor triads.)

Now, we need to know the actual horizontal distance between phosphor dots (since we measured the viewing area horizontally across the screen). Since we're using a 17-inch monitor to demonstrate this, we'll say it has a pitch of .26mm, which is not at all uncommon. Now, we must use the theorem of Pythagoras and the fact that scan lines for 1024x768 monitors are typically .14mm apart (vertically), to find the horizontal space between pixels. A little wrist motion with the slide-rule shows that the dots are .22mm center to center horizontally. Divide the .3mm pixel size by this spacing value and you come up with 1.36 triads per pixel. (Which is about what we were hoping for.)

Now, if you apply these calculations to a stripe mask monitor of the same pitch, you'll find that to get the same image quality, you would need to buy a stripe mask monitor with a pitch of .23mm. I'm not sure they make these, but I know that I certainly can not afford one if they

do! (That's another good rule of thumb: The smaller the pitch, the larger the price.)

So, what this all means is that the smaller the number used when referring to "pitch," the more phosphor dots on the screen and the better the resolution. OK, I admit this was all fairly obvious from the beginning if you just stop to think about it. What isn't obvious however is that stripe mask monitors have brighter colors, but the shadow mask monitors tend to have sharper images.

(Also, there is a newer compromise technology called "Advanced Shadow Mask." This technology combines some of the aspects of each of the other two types. Most notably, it also uses stripe type phosphor dots, so the pitch is figured the same way a stripe mask monitor would be. From what I can tell, the Advanced Shadow Mask monitors have the flattest screen too, which means less distortion, so it may well be the best type of monitor you can buy. We'll discuss the importance of "flatness" a bit later on.)

The Taste That Refreshes

Another thing to look at is the monitor's "refresh" or "scan" rate. This is how often the image is re-drawn on the screen, not by the computer or video card, but by the electron gun at the back of the monitor's picture tube. Given in Hz (hertz), the higher the number the better. Most common VGA monitors offer scan rates in the vicinity of 75Hz with faster rates being more expensive, and there are "multi-sync" monitors out there that can vary their refresh rates anywhere from 60Hz to 135Hz to match the output from various VGA interface cards.

Lacing—It's Not Just For Corsets!

Most monitors sold today are *non-interlaced*, though you can get an

interlaced monitor if you desperately want one. You really want a non-interlaced monitor, though. What's the difference? Interlaced monitors draw every *other* scan line during a pass. That is, the first time through the sequence, the monitor will draw scan lines 1, 3, 5, etc. The next time through, it will draw scan lines 2, 4, 6 and so on. This makes the monitor work twice as hard to draw a single screen, it takes twice as long, and it adds to the flicker problem discussed later. And since it takes twice as long, animations are jerkier, and just generally slower—which also adds to the flicker problem. (A great example of an interlaced display is your television set.) Non-interlaced monitors draw every line every time, which means your entire display is updated 70+ times a second (this number depends on your refresh rate). This means less flicker, faster animations, and fewer headaches.

Tongue Twisters

There are a dozen other comparison points for monitors: Average Modulation Transfer Function, Misconvergence, Pincushion, Color Analysis, Spatial Uniformity, Maximum Usable Brightness, and Color Temperature. These describe actual placement of phosphor dots, true colors of the display, how accurate the electron gun is, and so on. Each really *is* important, but, unless you are really good friends with a certified technician, you'll likely never know these values for any given monitor. Measuring any of these takes specialized (read "expensive") equipment which you are unlikely to find in the kitchen next to the bread machine. Besides, all you really need to do is look at two monitors side by side and decide which looks better.

It Is the Size of the Ship

Why did I pick a 17-inch monitor for my

example when other, less (and more) expensive sizes are available? Well, for one thing, I'm getting old, and trying to read that chunky text on my IIGS monitor is getting harder and harder with each passing day. But mostly, it's because the "street" prices for 17-inch monitors have lately fallen from the ionosphere down to where the average Joe can afford one. That is, less than \$800.

But, if you are young, or your eyes aren't tired, or you have limited space in which to install the monitor, or are rolling in *limited* funds, by all means, get a 14- or 15-inch monitor.

Deceptive ad Practice?

Speaking of monitor sizes, I don't know why it is, but picture tube sizes are measured diagonally, from lower left corner to upper right. Here in the U.S. we measure the expanse of visible glass, but in other countries, they measure the actual size of the image. Fortunately, on VGA monitors, this is essentially the same thing, but some older monitors had to have a border area around the image to allow for the possibility that the image would stretch and distort over time. It also worked to cover up any possible manufacturing mistakes that allowed poorly controlled electron guns to simply draw bigger images.

I suppose it is easier to say "This is a 15-inch screen" as opposed to, "This screen measures 8.5 by 11 inches." And saying "17 inches diagonally" really does give you a pretty good idea of the screen dimensions, since that diagonal must be the hypotenuse of a right triangle. A little action with your slide-rule . . . um . . . calculator . . . will turn up a good approximation of the actual screen dimensions, even though the screen is rectangular instead of square.

The Earth Is Flat!

Another thing about picture tubes that's becoming more and more important is their degree of "flatness." In older monitors, each phosphor point was equidistant from the electron gun at the back of the picture tube. Obviously, this made for screens with a fairly high degree of curvature—almost like a soap-bubble in some cases, or very deep monitors front to back. Recent advances in technology have allowed monitor manufacturers to adjust the timing involved in firing the electron gun, which in turn allows them to make use of a screen with less curvature.

As you get older, or spend more time in front of your screen, you'll appreciate a flatter screen. On older screens, your eyes had to re-focus as they scanned across the

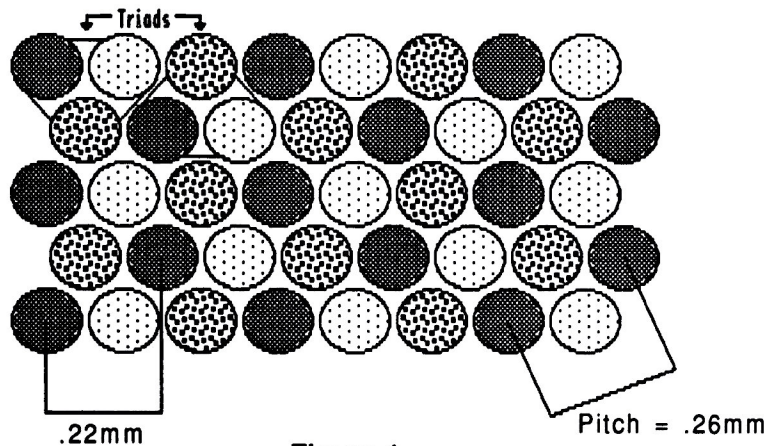
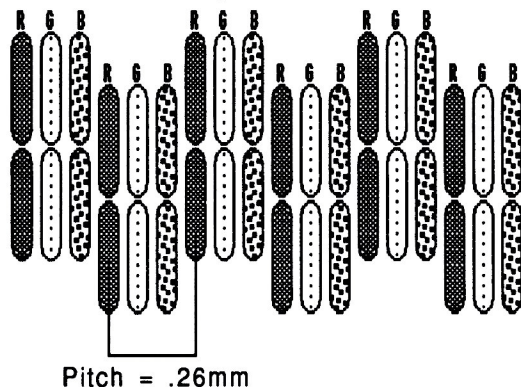


Figure 1
Phosphor Dot Arrangement & Pitch Measurement
For Our Sample Shadow Mask Monitor.

Figure 2
Phosphor Dot Arrangement & Pitch Measurement
For a Stripe Mask Monitor.



screen, since the edges were farther from your eyes than the center of the screen. "Flat" screens do a great deal to obviate this problem; I can sit in front of one for hours on end with no eyestrain.

And More!

In an effort to drum up customers, manufacturers have started adding all kinds of cool options to their monitors—most of which are actually useful. Nowadays there are controls that determine where on the screen the image appears—you can move it up, down, left or right. Then, when it's centered, you can expand the image to fill the entire screen—or shrink it, if it's too large.

The very latest monitors also include controls that modify the stretch of the image top and bottom—frequently a horizontal line at the top of the screen is not exactly the same length as one at the bottom of the screen. Now perfectionists can adjust this "trapezoid" to suit their own particular tastes.

Some monitors let you adjust the color values of each primary color (red, green, and blue). So, if your screen appears to be too red, just diddle with the control and—shazam! It's perfect.

There are even some monitors that are "tiltable"—you can tilt them over on one side and adjust your screen image so that you can see a wider portion of your spreadsheet, or tilt it the other way to see more of that letter you are writing to Santa this year.

The really spiffy monitors have all these controls show up as menu items either on the screen itself, or on a small LCD screen built into the monitor—an onscreen screen, as it were. (Of course, if a monitor's features aren't accessible from the monitor itself, special software would

have to be written for the IIGS to make use of them. So, make sure those special features you want are hardware controlled!)

The high-end VGA monitors even include amplified stereo speakers, and I'm expecting built-in coffee makers and pizza ovens later this year!

What's so Great About VGA?

Well, besides the obvious improvement in resolution, VGA is a widely accepted standard. If your computer can use a VGA monitor, it can use *any* VGA monitor. You can shop around for the best price, a different size, more controls—whatever makes you happy.

Additionally, for about \$30 you can buy an extra cable and a monitor switch box that will let you use one monitor on two computers. Sure, not at the same instant, but how often do you actually use two computers at the same time? I have three computers on my desk today, and I rarely use more than one at a time. Plug them all into one monitor, and each computer can use that monitor at the touch of a button. Presto! By using a VGA monitor, you've just opened up all kinds of space on your desk!

But What About "Old Faithful"?

Let's take a look at the monitor that's most likely sitting on your desk right now: The AppleColor RGB Monitor.

If this monitor were a horse, it would be shipped off to the glue factory. For openers, it's a mere 12 inches (with only an 11.5-inch viewing area) diagonally in size. There are some areas of the computer industry where smaller is better, but this ain't one of them! By today's standards, this is unbearably cramped.

Next in line is the pitch—a whopping .37mm according to Apple, Inc.! Each

pixel is half again as big as most good quality VGA monitors. Think of the difference between a baseball and a 9-inch softball. (For those of you with no life outside your IIGS and the cat, a baseball has a circumference of 6 inches.)

This goes hand-in-hand with the cheezy 640x200 resolution. [Actually, the IIGS monitor *can* do 640x400 resolution, but that's only in interlaced mode, and the standard IIGS System Software doesn't support that mode. - Diz] The PC world gave this up years and years ago when they moved from CGA monitors to VGA. In one fell swoop, IIGS video was rendered second rate, and for years nothing was done about it.

Finally, that abominable 60Hz scan rate. I use a lot of florescent lighting in my home, and the screen flicker is very noticeable. In fact, after an hour or two in front of the screen, I usually have a splitting headache. I suppose the 60Hz scan rate made the monitor easier to design and build, but even in the days when the IIGS was first designed they knew about the effect of the scan rate on humans and could have done something about it.

Insanity Runs in my Family

In days when a complete (basic) IIGS system can be bought for under \$400, does it make sense to spend hundreds of dollars on a new video card and a new monitor when you have a monitor already that meets your needs just fine? Well . . .

I submit that your current monitor may not really be meeting your needs. If you do anything at all with the super-high resolution screen on your IIGS (i.e. you use the Finder or any of dozens of desktop applications), you should see a noticeable improvement in image quality. (The Second Sight card uses "scan line doubling" for the IIGS desktop and other non-Second Sight-specific applications. But, hopefully, it's only a matter of time until somebody patches the Apple IIGS tools to make the super-high resolution screen 1,024x768. Scan line doubling improves the *look* of the super-high resolution screen, but the resolution is still just 620x200 [many thanks to David Empson for pointing this out to me]). If you are a graphics fan, having the improved resolution of a VGA screen will vastly improve how any particular image appears. Imagine looking at a GIF file the way it was meant to be seen, instead of with half the data missing! (Of course, you'll need special software [which just happens to come with the Second Sight card] to view all those extra colors, Platinum Paint won't do it! For more on

this, see the Second Sight review elsewhere in this issue.)

Try this: Open a folder with the Finder. Now take a good look at the white area in that folder's window. Notice those grayish lines running across it? They are most noticeable in the vicinity of text—look inside a capital "O," for instance. This striping makes reading text on the IIGS a lot more difficult than it needs to be. With a VGA monitor, this striping goes away.

If, like me, you spend a significant portion of your day in front of the computer, the pure physical relief of using a larger screen makes it worth every penny.

So, are you really serving your needs by using a monitor that is, by any objective standard, second rate? Even if all you do is play games, the improvement in quality may well be worth it.

Now What?

Well, having vented my spleen and told you that your beloved IIGS monitor is just so much junk, I think the least I can do is make some suggestions about its replacement.

First and foremost, get a monitor with the smallest dot-pitch you can afford. With the price of good monitors so low, I wouldn't look twice at any monitor with a pitch greater than .28mm. Remember, the smaller the number, the better.

Secondly, get the *largest* monitor you can afford—as long as it fits into your workspace! I started out this article raving about 17-inch monitors, but I have a 15 inch—I simply cannot fit a 17-inch monitor onto my current desk. After I re-

build my desk, I'm going to see if I can't afford a 37-inch monitor!

Particularly avoid monitors with refresh rates of 60Hz, since this is a harmonic of the power coming from your wall. If you work near florescent lights, the combination will make your screen appear to flicker. Either that, or buy stock in Tylenol.

Boiled down to one sentence; get the biggest monitor you can afford, as long as it's non-interlaced, has a fast refresh rate, and itty-bitty phosphor dots or stripes. Anything extra is just so much gravy.

So, What's Out There?

After all this, what horrid monitor monsters are out there to take a bite out of your diminutive paycheck? Usually, I'd give you a long list of recommended products along with their prices and where to get them. Unfortunately, there are just too many really good VGA monitors out there to make that practical. (A complete list of available good monitor choices would likely double the size of this issue of *GS+* Magazine.) Instead, do your shopping with the above information and the following price ranges in mind:

In the 15 inch range, the low price seems to be about \$300 for the Magnavox CM2015. The high end was the NEC XP15 at \$626 (in fact, NEC seems to have the high price niche locked up for all sizes, but they are really *good* monitors).

If you were taken by my hypothetical 17-inch monitor, a real one will cost you anywhere between \$559 for the Princeton Ultra 17 to \$1,189 for NEC XP17.

Finally, if you are filthy rich, the Mag MX21P starts the 21-inch monitor price

war at \$1,619, and the NEC XP21 commands a whopping \$2,359.

These prices are drawn from a quick perusal of various and sundry computer magazines, and as indicated represent extremes of price. The *average* price for 17-inch monitors worked out to just under \$800 (\$796 if you want to get picky). There were some monitors that fell outside the above ranges, and they were usually less expensive. But I decided to include only those monitors with an advertised pitch equal to or below .28mm, and the excluded monitors were usually much larger. On the other hand, if I could find no advertised pitch, I included the monitor anyway.

As a general rule, I'd stay away from monitors at the extremes. Low end monitors are usually not as good as one you can get for just a few dollars more, and high end monitors probably far exceed your needs—the law of diminishing returns seems to come into play here.

Specifically, I like the Viewsonic 17. I've seen this puppy and really like it. It's a great monitor, and has one of the smallest pitch sizes available today: .25mm. I'm sure there are better monitors out there, maybe even for less money. But this one has my vote, with an average mail order price of about \$800. So be sure to shop around!

Of course, the great thing about VGA monitors is that they are literally *everywhere*. So, if you've got a Circuit City or Office Depot in your home town, hop in your car and go take a look at the monitors they have available. Then, using this article as your "rule of thumb," you can pick the monitor that's best for you. *GS+*

Errata

On page one of both the AutoArk and Balloon manuals, the patent number given for the Unisys patent on LZW compression is incorrect. The correct patent number is 4,558,302. This will be corrected in the next printing of each manual. (Note that the patent number given on the disk labels for each of these products is correct.)

If you are a magazine-only subscriber and you ordered the *GS+* V6.N4 disk specifically to get II Notes v2.0, you probably know by now that this version of II Notes had a few bugs in it that were corrected in *GS+* V6.N5. However, if you don't want to spend an extra \$6.50 just to

get a corrected II Notes, you don't have too. Just send us your original *GS+* V6.N4 disk, along with a self-addressed return disk mailer and enough return postage, and we'll copy off the latest version of II Notes for you. (If you ordered the *GS+* V6.N4 back issue disk after May 5th, 1995, you should already have the updated version of II Notes. You can use the Finder to Get Info on the II.Notes file to check the version. The latest version is v2.0.1.)

In the table, "File Type and Auxiliary File Type Designations," that accompanied last issue's "ICE" article, there was at least one error. The auxiliary type for Diversi-

Tune instrument files (file type \$D6) should be listed as "\$8002" instead of "\$0002". Also, several recently assigned file and auxiliary types were left out of the table. As soon as an official list of these new assignments is available, we'll publish them here in *GS+* Magazine.

If you find an error in *GS+* Magazine (or in one of our stand-alone products), let us know! Send your findings to:

GS+ Magazine
P. O. Box 15366
Chattanooga, TN 37415-0366

Internet: Diz@genie.com

GS+ Back Issue Information

Jan-Feb 1991 (V2.N3)

- AppleFest/Long Beach '90 & Apple II Achievement Awards
- Interview with Jim Carson of Viessie, Inc.
- Introduction to System Software v5.0.4
- RAM Namer - A CDev that allows you to rename RAM disks
- Reviews: ZipGSX, LightningScan, Design Your Own Home, Print Shop Companion IIGS, Your IIGS Guide, Dragon Wars, 2088: The Cryllan Mission - Second Scenario, Space Ace, Sinbad & the Throne of the Falcon

Sep-Oct 1991 (V3.N1)

- Protecting Your Investment - A Guide to Surge Protection
- A Conversation with Roger Wagner - Part 2
- Working with the Toolbox - Part 4: QuickDraw II
- FGS - A desktop program that generates Fractals
- Reviews: two 100MB hard drives, Nite Owl Slide-On Battery, ORCA/Integer BASIC, ORCA Talking Tools, Storybook Weaver: World of Adventure HyperBole, HoverBlade, Shareware: DeskTop Painter, SoundSmith, IIGS Classic: Bard's Tale IIGS

Jul-Aug 1992 (V3.N6)

- KansasFest 1992
- Introduction to 3-D Graphics - Part 3: Speeding Things Up
- Working with the Toolbox - Part 8: The Control Manager
- Understanding FSTs
- Using rBundles in Your Programs
- Quick Folder - A Finder Extension that allows you to open folders from the Finder's Extras menu. **Needs System 6.**
- Extra Bits - A Control Panel that lets you change the new Battery RAM parameters that System 6 didn't provide a Control Panel for. **Requires System 6.**
- Reviews: ZipGS (10MHz CPU/64K Cache), Gate, Space Fox, Utility Launch & Utility Works

Sep-Oct 1992 (V4.N1)

- Apple EXPO East
- Open From Desktop - A Finder Extension that allows you to open any item on your desktop from the Finder's Extras menu. **Requires System 6.**
- II Notes - A 20-page NDA notepad. **Requires System 6.**
- Miscellaneous Library - A collection of useful routines to use from any programming language that supports linking to standard libraries
- Reviews: ContactsGS, GSymbolix, Kangaroo, ORCA/Debugger, UltraCat, Storybook Weaver: World of Make-Believe

Nov-Dec 1992 (V4.N2)

- Understanding Accelerators
- The Basic IIGS
- Working with the Toolbox - Part 9: The Menu Manager
- Font Reporter - A program that lets you display and print out any font in your system. **Requires System 6.**
- Reviews: AutoArk, 1990 GEM Apple II CD-ROM, IIGS System Transport Case, Out of This World, TrueType Font Collection, Universe Master
- Review updates: Desktop Enhancer v2.0, Pointless v2.0

(All programs after V4.N2 require System 6.0.1, unless otherwise noted)

Jan-Feb 1993 (V4.N3)

- The World at Your Fingertips
- Understanding the Desktop
- Batt Reporter - A program that generates plain English reports from battery RAM configuration files
- Rainbow - Change the colors of your Finder device icons
- GS+ program updates: Battery Brain v2.0, Open From Desktop v1.0.1, Rebuild Desktop v1.1, EGOed v1.9
- Reviews: CV-Ram Memory Card, StyleWriter printer, ProSel-16, TransProg III v1.1, Ant Wars, FloorFiles, Quest for the Hoard

Mar-Apr 1993 (V4.N4)

- Beginner's Guide to Finder v6.0
- Working with the Toolbox - Part 10: LineEdit
- LASERbeam - A program that lets you download PostScript files to a PostScript printer
- Font Memories - A control panel that lets you keep your bit-mapped fonts on a disk other than your startup disk
- EGOed lite - a smaller, faster version of EGOed
- GS+ program updates: Rainbow v1.0.1, NoDOS v1.8
- Reviews: Salvation—Deliverance, DreamGraphix, The Manager, The Passport House Letter, The Lost Tribe, DuelTris

May-Jun 1993 (V4.N5)

- The Scavenger - Use CD-ROMs from other computers on a IIGS
- Apple EXPO West Report
- Anna Matrix - a Cool Cursor Editor
- GS+ program update: Cool Cursor v2.0, Miscellaneous Library
- Reviews: Apple Desktop Bus Mouse II, Baccarat, Key Fonts Pro CD-ROM, MAZER II: The Ghost of Mordaine, Pick 'n' Pile, Shanghai II: Dragon's Eye, Solarian GS, Twilight II, TypeWest

Jul-Aug 1993 (V4.N6)

- System 6.0.1—For Users
- KansasFest 1993
- Catch the WAV: A Guide to Scavenging Sound Files
- Secrets of Writing Twilight II Screen Blankers
- Finder Binder: Avoid the "An application can't be found for this document" dialog by connecting documents to an application
- GS+ program updates: AutoSave v2.0, EGOed lite v1.0.1, Extra Bits v1.0.1
- Reviews: Castle Metacrus, HardPressed, The Lost Treasures of Infocom, Treasures From Heaven: Quest for the Hoard 2, Your Money Matters, Zip Drive

Sep-Oct 1993 (V5.N1)

- So You Bought a Hard Disk... Now What?
- Apple (Jive) Talkin'
- An Introduction to Object Oriented Programming
- File Dump: A complete Object Oriented Programming example
- GS+ program updates: Anna Matrix v1.0.1, Cool Cursor v2.0.1
- Reviews: Applied Engineering's High Density Disk Drive, Apple II SuperDrive Controller Card, MODzap, soniqTracker, ORCA/Pascal v2.0.1, SoundMeister, TypeSet

Nov-Dec 1993 (V5.N2)

- IIGS Maintenance—Part 1: The Mouse and Keyboard
- SCSI ("Simple Connections," Says Igor.)
- Balloon v1.0: A Finder extension that lets you extract files from ShrinkIt Archives
- CD-ROM: An application that scavenges files off CD-ROMs
- KaBloolie! A IIGS version of the game Minesweeper
- Reviews: 3D Logo, Focus Drive Hard Card, Prism, Tulin Floptical Disk Drive

Jan-Feb 1994 (V5.N3)

- IPC (Igor's Playful Code) - A guide to using IPC on the IIGS
- EGOed v2.0: Read and write RTF files, plus a new color menu
- MIDI Surgeon: Convert MIDI data files to MIDI Synth format
- Reviews: Ancient Glory, Apple Extended Keyboard, AudioClips, GNO/ME 2.0, HP DeskWriter 550C Printer, HyperLogo, NCS Pro 240 Hard-Disk, Pedigree

Mar-Apr 1994 (V5.N4)

- Programming the IIGS - Part 1: Getting Started
- Playful - A Finder extra that plays ALL rSounds in ANY file!
- What Is This? - Get formation on any icon you select.
- LASERbeam v1.1 - Now, download PostScript files and FONTS to your PostScript printer!
- Miscellaneous Library - Now you can read Macintosh resources!
- Reviews - Addressed for Success, ORCA/Debugger vs. Splatt, ORCA/Modula-2

May-Jun 1994 (V5.N5)

- Programming the IIGS - Part 2: Programming the IIGS
- Mr. Priceguide Looks at Hard Disks - Advice on buying a hard disk mechanism.
- FLI Convert - An application that converts PC FLI animations into PaintWorks animations!
- MoreSound - An application that lets you change the events in the Sound control panel.
- Reviews - DiscQuest, MS-DOS File Utilities, Salvation: Bakkup v2.0, Spectrum

Jul-Aug 1994 (V5.N6)

- Programming the IIGS - Part 3: GS/OS and the Toolbox
- So You Bought a Hard Drive Mechanism. Now What?
- Working With the Toolbox - Part 12: Standard File
- Clip On - View the System Clipboard from any desktop program
- Sun Dial - A great new clock NDA
- What To Do - NDA to do list manager
- Reviews - Six Pack, The Tines

Sep-Oct 1994 (V6.N1)

- Halloween Fun With Your IIGS
- All About IIGS Graphic Formats
- Find Original - Easily locate the files your Finder aliases point to
- Table Scraps - The best IIGS scrapbook program yet
- Reviews: DiscQuest Encyclopedia, Quick Click Calc

Nov-Dec 1994 (V6.N2)

- Programming the IIGS - Part 4: Program Building Blocks
- Everything you need to know about buying a laser printer
- Working With the Toolbox - Part 14: The TextEdit Tool Set
- Copy Icon - Copies icons from the Finder desktop
- Elucidation - Edits Finder File Type Descriptor files
- Geeker - Edits the Finder's "geek" preferences
- Ultimater I - An Ultima I game and character editor
- Reviews: AUGC CD #1, The SimpleScript Workbook, Ultima I - The First Age of Darkness

Jan-Feb 1995 (V6.N3)

- How to shop for a modem
- All about Nifty List
- Working With the Toolbox - Part 15: The Print Manager
- The GS+ XCMD for Spectrum v2.0
- ElieFont - View any font, just by double-clicking on it!
- GS+ program updates: Cool Cursor v2.0.2, AnnaMatrix v1.1
- The GS+ FAQ File
- Reviews: Financial Genius, GS Invaders, Stalactites, Switch-It!

Mar-Apr 1995 (V6.N4)

- How to buy a CD-ROM drive for your IIGS
- Programming the IIGS - Part 5: TaskMaster
- Special Edition - Alerts you to changes in edition files
- GS+ Magazine Policies or "Where's my magazine?"
- GS+ program updates: II Notes v2.0, Finder Binder v1.0.1
- More of the GS+ FAQ File
- Reviews: Contacts GS v2.0, FAXination

May-Jun 1995 (V6.N5)

- The Beginner's Guide to Archives
- Understanding IIGS Icons
- ICE - Finally, an icon editor that handles both Finder icons and rIcons!
- GS+ program updates: II Notes v2.0.1, Rainbow v1.0.2
- More of the GS+ FAQ File
- Reviews: Animasia 3-D, Blockade, Cogito, BlueDisk PC floppy disk controller

Back Issue Prices

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All prices include postage and handling. (Orders will be sent First-Class to the U.S., Air Mail to Canada and Mexico, and surface mail to all other countries. For Air Mail to all other countries, add an additional \$3 per issue. If you pay by credit card, you will be charged only for the additional postage needed.) *Tennessee residents must add 7.75% sales tax.* Mail back issue requests to: **GS+ Back Issues, c/o EGO Systems, PO Box 15366, Chattanooga, TN, 37415-0366; or call 1-800-662-3634 (or 615-332-2087), Monday through Friday, 9 a.m. to 5 p.m. Eastern Time, to order or verify availability. Please include your phone number on all orders placed by mail (in case we are sold out of an issue)! For MasterCard or VISA orders placed by mail, also include your credit card number, expiration date, and signature. Any issues not listed are sold out!**

Oh, Please!

You aren't going to believe this, I certainly don't, but I've actually been getting calls from people wanting to know if they can believe the new rumor that Apple is about to resurrect the Apple II! The people spreading this rumor have minds that are almost as diseased as, well, mine!

Actually, these rumors are probably offshoots of the publicity surrounding Apple's new "Pippin" video game console. Based on the PowerPC 604 chip, the Pippin is Apple's attempt to carve out a chunk of the multi-billion dollar home-entertainment electronics market. While the Pippin is a fairly nice looking unit, the early word among game developers is that they won't be falling all over themselves to support it. (No, the Pippin won't run Apple II software.)

re: Programming the IIGS

If you are new to IIGS programming, you might be frustrated by the fact that all of the old Apple IIGS Toolbox reference books are kind of hard to come by. That *might* change soon! The ByteWorks is considering updating and publishing all of those books themselves.

Æ Resurrected?

Another hot rumor these last few months is that Applied Engineering is getting back in business. *Don't you believe it!*

While there *is* a new hardware company out there (ABC Direct) that is supporting the Apple II, they are *not* the "remains" of Applied Engineering. Oh sure, ABC Direct is located in Texas, and the guy that runs the place used to work for Applied Engineering—but that was a long time ago! That's all they have in common! Honest! So stop with all the Applied Engineering rumors already! I mean it! Leave me alone about that! Hey! I've got a gun here! Back off! That's better. Now, let's move on.

But Hey!

While ABC Direct *isn't* Applied Engineering, they've still got stuff in the works for the IIGS. Their first product is rumored to be an 8MB RAM card that uses 1MB SIMMs. It's also rumored that ABC Direct is working on a replacement for the discontinued SuperDrive controller card. For more information, contact ABC Direct at 800-481-6782.

Coming Real Soon: AutoArk 95

In case you were wondering, we've gotten

some people from Microsoft to help us with the AutoArk update, so you can bet your bottom dollar that it'll be out sometime this year! No, really! I swear! Honest!

Über-Time

These rumors about a new and improved PC-Transporter replacement just won't go away. The latest is that the potential manufacturer is trying to decide exactly what to include in the package, and how much folks will be willing to pay for it. At this point, the manufacturer is trying to decide between two different models:

1) The first model is a "bare bones" PC emulator. All it would include would be a mid-speed (maybe 50MHz) Pentium chip and the support circuitry to let it run inside your IIGS. If you wanted to hook up a monitor or floppy disk drives, you would have to buy both a Second Sight card (and a VGA monitor) and a BlueDisk card! The price for this would be about \$300.

2) The second model would be the deeeelux model that would only use your IIGS as a place to get power from. This model would include the Pentium chip and support circuitry, along with the hardware needed to control a VGA monitor and several PC floppy drives. (You would still need to buy a VGA monitor and one or more PC floppy drives.) The price for this model (which would truly be an Über-Transporter) would be around \$600.

Number 2 certainly sounds nice doesn't it? Sadly, until the manufacturer can determine which model people would actually be willing to pay for, the project is on hold.

Ask Mr. 8-Ball

For our new subscribers that don't know him, Mr. 8-Ball is our most reliable source for confirming rumors. (Some have said that Mr. 8-Ball used to work for

the Apple publication *develop*—that was actually his brother. And, he didn't work for *develop*, he worked for Apple's Marketing department. But you could probably guess that.) Whenever we have a rumor that we just can't confirm, we don't just run it, we run it by Mr. 8-Ball! So, let's get to those rumors:

Q: I've been hearing that Wolfenstein 3-D might *finally* be coming out for the IIGS within the next few weeks. Is there any chance of this really happening?

A: Don't count on it.

Q: In the last few issues, I've reported that several IIGS programs for browsing the World Wide Web were in development. At this point however, none have appeared. Someone on the Internet put forth the opinion that a IIGS web browser would not appear "in a million, billion years." Is this guy just a jerk?

A: Don't count on it.

Q: D'oh! Oh well, given that, is it possible that GENie might actually get all of their Internet services working before the end of the summer?

A: You may rely on it.

Q: Well, that's certainly good news! What about the GENie front end for the IIGS... Will it be done about the same time?

A: Don't count on it.

Q: One last question... Is it true that someone is working on a utility to convert PC PostScript and TrueType fonts to a format that will be usable on the IIGS?

A: Ask again later.

GS+

Top 10 Reasons the Second Sight Card Was Delayed

10. Jawaid Bazyar mistakenly assigned to Deep Space Nine for three months.
9. Two words: Spring Break!
8. Laws of electronics constantly being changed by God.
7. Had to take time off to fulfill "Contract With America."
6. Chip suppliers thought "Yandrofski" was a made-up name.
5. Lead engineer had to serve on O.J. jury.
4. First design based on hard to find vacuum tubes.
3. Initial batch of monitor cables only 2-inches long.
2. Couldn't decide which old photo-copier to print manual on.
1. Constant phone calls asking, "Is it shipping yet?"

How to Use Your GS+ Disk

The first thing you need to do is **make a backup copy of your GS+ Disk with the Finder!!!** Do *not* make your backup on your hard disk! Instead, copy the GS+ Disk to another 3.5-inch disk (this is *very* important). Next, put the original in a safe place. If you are having a problem making a backup copy, give us a call at (615) 332-2087. If your disk is damaged, let us know, and we'll get a new one to you as soon as possible.

Before you attempt to use your backup GS+ Disk, please take a few minutes to read the **a.Read.Me** file on it for any last minute corrections or information. If you do not already have our EGOed lite text editor installed in your system, you can use the Teach application supplied with System Software v6.0 to read this file.

Installing the Software

To install the software on this issue's GS+ Disk, start up your computer using System Software v6.0.1 or later. (Note that all of the programs on this issue's disk [except EGOed lite] *require* System 6.0.1!) Next, place your *backup* copy of the GS+ Disk in a drive. (You *did* make a backup didn't you?) Now run the Installer program that is on your backup GS+ Disk. (From the Finder, just double-click on the Installer icon.) *It is extremely important that you use the Installer that is on your backup GS+ Disk! Do not use any other copy of the Installer!*

When the Installer window appears, select the item you want to install from the list on the left-hand side of the window, and the disk you want to install it on from the list on the right-hand side of the window. Then click on the Install button. For more information on using the Installer, refer to your IIGS owner's manual.

Installing EGOed lite

The following is a detailed example of how to install EGOed lite. The other programs are installed in a similar manner.

- Start up your IIGS with System Software v6.0 or later—the version of EGOed lite that is on this GS+ Disk *requires* System 6! (Your GS+ Disk is *not* a startup disk, so don't try starting your computer with it.)
- Insert your backup copy of the GS+ Disk into a drive and run the Installer program that is on your backup GS+ Disk. It is *very*, *very* important that you run the Installer that is on your backup

GS+ Disk and *not* some other copy of the Installer.

- When the Installer finishes loading, click on the Disk button on the right-hand side of the Installer window until your startup disk appears. (If you only have one 3.5-inch disk drive, you will have to remove the backup GS+ Disk from the drive and replace it with your startup disk. You should also refer to the "Making Room" section below for hints on how to free up room on your boot disk.)

Please Remember . . .

The contents of the GS+ Disk are not public domain or shareware! We depend on your honesty to stay in business. Please do not give away copies of the GS+ Disk or any of the programs on it. If you do, we will not be able to stay in business. It really is that simple!

- On the left-hand side of the Installer window, you will see a list of the items on the backup GS+ Disk. One of the items in this list should be "EGOed lite." (If EGOed lite is *not* in this list, quit the Installer and begin again. Be sure that you are running the copy of the Installer that is on your backup GS+ Disk!) Once you see the EGOed lite item, click the mouse on it so that it becomes highlighted.
- Click the mouse on the Install button in the middle of the Installer window. The Installer will then install EGOed lite on your startup disk. If you only have one 3.5-inch disk drive, you may have to switch disks several times. Just insert each disk as the Installer asks for it.
- When the Installer has finished, click on the Quit button in the middle of the Installer window. This should cause your IIGS to restart.
- When your IIGS finishes restarting, pull down the Apple menu and select EGOed lite (note that you have to be in a

desktop program like the Finder to have access to the Apple menu).

- When it finishes loading, notice that EGOed lite has its own menu bar. Select Open from the *EGOed lite* File menu and then put your GS+ Disk in a drive. You should see a list of the files and folders on the GS+ Disk.
- Open the **Documentation** folder on your backup GS+ Disk and then open the file **EGOed.lite.Docs**. This file contains complete documentation on how to use EGOed lite. *Please take a few minutes to read this documentation.*

Making Room

If you do not have a hard drive, you will probably have to remove some files from your startup disk to make room for the new desk accessories, control panels, and other system files on your GS+ Disk.

Towards that end, we have prepared the following list of "expendable" files that you can "safely" remove from your System Software v6.0.1 startup disk to free up some space. (We've put quotes around "expendable" and "safely" because almost *all* of the files in the IIGS System Software have some sort of use! The files listed here are the ones that are the "least" useful for a specified hardware setup.)

Be sure that you *never* delete *any* files from your original System Software boot disk! Always work on a backup copy!

System Software v6.0.1

If you use the System 6.0.1 **:Install** disk to create a minimal, 800K, System 6.0.1 boot disk, that disk will have 26K free when the installation is finished.

It must be noted that *all* of the files on this disk are *very* important and the files that you can *safely* remove depend, for the most part, on your hardware setup. So, please read all of these instructions carefully before removing *any* files.

The first two files you can delete depend on what you will be doing with your IIGS. If you will not be running AppleSoft BASIC programs, you can remove the file **BASIC.System** (11K) from the root directory of the disk. If you will not be running ProDOS 8 software, you can remove ***:System:P8** (18K).

If you do not care what time it is, you can delete the following file:

***:System:CDevs:Time** (10K)

After that, the files that you can safely remove depend on your *hardware setup*.

If you have a ROM 01 IIGS, you may delete the file:

*:System:System.Setup:TS3 (42K)

If you have a ROM 03 IIGS, you may delete the following file:

*:System:System.Setup:TS2 (37K)

If you do *not* have a 5.25-inch drive, you may delete the following 8K file:

*:System:Drivers:AppleDisk5.25

If you do *not* have a printer, you may delete the following file:

*:System:CDevs:Printer (5K)

Finally, if you have deleted all control panels, and you won't be installing any control panels from the GS+ Disk, you can also delete the 18K file:

*:System:Desk.Accs:ControlPanel

Removing some or all of these files will give you ample room (up to 138K on a ROM 01 IIGS and up to 133K on a ROM 03 IIGS) on your startup disk to install EGOed lite or any of the other system utilities from your backup GS+ Disk.

What is EGOed lite?

EGOed lite is a new desk accessory (NDA) text editor that we provide in each issue of GS+ Magazine.

When you install EGOed lite on your startup disk, you can use it to edit and print ASCII text, Teach, AppleWorks Classic and AppleWorks GS word processor files from inside any desktop program that properly supports NDAs.

To use EGOed lite, you must install it on a IIGS System Software v6.0 (or later) startup disk with at least 40K of free space.

Note: You will *not* be able to print from EGOed lite or any other desktop program when using an 800K, System 6.0 boot disk. (There isn't enough room for all of the required drivers and control panels.)

If you want to save even *more* space, you might want to consider using Autopilot (from GS+ V4.N1) as a replacement program launcher. With Autopilot installed on the minimal System 6.0.1 boot disk, initial free space goes up from 26K to 163K! You can then use Autopilot to autolaunch the Finder from a second 3.5-inch disk drive and still have plenty of room on your boot disk for lots of system extensions. For more information on Autopilot, refer to the "Autopilot v2.0" article in GS+ V4.N1 or give us a call.

Self-Extracting Archive

We use GS-ShrinkIt v1.1 to compress the *source code* and related files on the GS+ Disk into a *self-extracting archive*. To extract the files from the archive, simply double-click on the GSP.V6.N6.SEA program on your backup GS+ Disk. *You do not need to have a copy of GS-ShrinkIt in order to use the programs or other materials on this GS+ Disk!*

DISKLESS?

If you did not receive the disk with this magazine and have decided you would like to have it, just send a check or money order for \$6.50 to:

GS+ V6.N6 Disk Offer
P. O. Box 15366
Chattanooga, TN 37415-0366

Or call us at 1-800-662-3634, Monday through Friday between 9 a.m. and 5 p.m. Eastern Time, to bill it to your MasterCard or VISA.

Tennessee residents please remember to add 7.75% sales tax. (\$7.00 Total)

Price includes First-Class delivery to the U.S., air mail to Canada and Mexico, or surface mail to all other countries. Add an extra \$3 (\$9.50 total) for air mail to all other foreign countries.

IMPORTANT!

Use scissors or a knife to open disk bag!
Do not attempt to pull bag away from magazine!

However, you will gain better control over the files you wish to extract if you have GS-ShrinkIt v1.1. If you do not have GS-ShrinkIt v1.1 and you would like a copy, check with your local user group or give us a call here at **GS+** Magazine and we will try and help you locate a copy.

What's on the Disk?

There are seven items in the root directory of this disk:

a.Read.Me

A lot can happen from the time we send this magazine to the printer and the time we get ready to mail them out. If anything does happen, we will put everything we can find out about it in this file. Please read this file before using your **GS+** Disk.

Documentation

Due to a lack of space, this folder only contains the EGOed lite documentation file. The other files normally found in this folder (like the complete **GS+** Glossary and the complete **GS+** FAQ File) are in the self-extracting archive.

GSP.V6.N6.SEA

This is a self-extracting archive (SEA) containing the source code and related files for all the programs contained on this **GS+** Disk. The archive also contains the midi2gs shell utility, the Miscellaneous Library, and the complete text of the **GS+** FAQ File.

Also in this archive you will find a folder called **Talk.To.GSPlus**, which contains our feedback form, a troubleshooting guide, a problem form, and our writer's guide.

The feedback form is a plain ASCII text file. Extract it from the archive, fill it out and send it in to let us know what you thought of this issue.

The troubleshooting guide contains tips on how to resolve some of the more common problems you may experience while trying to use the programs on your **GS+** Disk. If you are having a problem, *please* read this file before you go to all the trouble of filling out a problem form! If the troubleshooting tips don't help, *please* fill out the problem form and send it to us! These are Teach files, you may use EGOed lite to view them.

The writer's guide is a Teach file that explains what you need to know to write for **GS+** Magazine—you may view it with EGOed lite or the Teach application.

Technical information, such as the Miscellaneous Library documentation is supplied in the archive as well. To extract the files from the archive, simply double-click on this file from the Finder. You will then be presented with a dialog asking you where you want the files extracted to. Note that if you try to extract *all* of the

files from this archive at one time, they will *not* fit on an 800K disk!

Icons

This folder contains icons used by the various programs on the **GS+** Disk. This folder also contains the **FType.GSPlus** file type descriptors which contain all the file type assignments for **GS+** Magazine.

Installer

This is the Apple IIGS Installer. The installer requires System Software v6.0 or later. Run it to install the other programs on this issue's disk. For more information on using the Installer, be sure to read the example on the previous pages.

Programs

This folder contains the EGOed lite, DocAlias, Find Original, Launch Alias, and MIDI Surgeon programs. Use the Installer provided on your **GS+** Disk to automate the installation of these files. EGOed lite requires System 6 to operate. All the other programs on this disk require System 6.0.1. This folder also contains a folder called **Sequences**. Inside this folder is the **liberty.mid** file. This is the MIDI file used for the example in the "MIDI Surgeon v2.0" article.

Scripts

This folder contains the scripts used by the Installer to install the files from this **GS+** Disk. **GS+**

How to Get System 6.0.1

Everyone should have a copy of System 6.0.1. Fortunately, we have a license to distribute it to our magazine-and-disk subscribers as a part of their subscription. Unfortunately, we can't afford to mail all five of the disks that System 6.0.1 takes up to every magazine-and-disk subscriber. However, we still want to make it easy for you to get System 6.0.1. So, if you are a subscriber to **GS+** Magazine with the companion **GS+** Disk (sorry, but we can *not* distribute System 6.0.1 to our magazine-only subscribers), send us the following items and we will send you System 6.0.1:

1) Five (5) *blank and formatted*, 3.5-inch diskettes to our P. O. Box address (which is shown on the back of your magazine). We are asking for "blank and formatted" disks because formatting takes time that we don't have, and it's a great way to tell if a disk is good before you send it to us. *If you send us a bad disk, we can't afford to replace it.*

2) A *self-addressed* return disk mailer with enough postage on it to mail the

five disks back to you. (Foreign subscribers without access to United States postage may include four International Postal Coupons instead. See your local post office to obtain these.) *If you don't provide a postage-paid, self-addressed return mailer, your disks will be considered "gifts" and will be used for backups.*

3) That's all. Don't send any money. We don't want any money for this.

How Else Can You Get it?

If you are a magazine-only subscriber, here are some other ways to get System 6.0.1.

Your Apple dealer. Bug them until they get it in for you. The retail price is \$39, but that includes manuals. The part number is #A0077LL/A. For the name of your local Apple dealer, call (800) 538-9696.

Your user group. Take your own disks and they should only charge you a small copying fee. Some user groups may have it already copied for you and available for

a nominal charge. (Note that some user groups make these services available only to their members. Of course, you do plan on joining, don't you?) If you need to know where your local user group is, call the Apple User Group Connection at (800) 538-9696 extension 500.

The Byte Works. You won't have to bug them, they have it in stock, and ready to ship. The item number is "APDA-47" and the price is \$24.95. To order, give the Byte Works a call at (505) 898-8183.

And, of course, if you have a modem, you can download it from your favorite online service. The total download time is about 5 hours at 2,400bps.

Important Note! Before you get System 6.0.1, you should make sure that you have the appropriate hardware to run it. To run System 6.0.1, you will need at least 2MB of RAM and a ROM 01 or ROM 03 IIGS. A hard drive is also very strongly recommended! **GS+**

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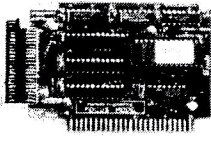
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ANSITerm v2.12

By Paul Parkhurst

Retail price: \$69

Requires 512K, 3.5-inch drive and a modem. Installation on a hard drive requires about 360K of disk space.

Not copy protected.

Parkhurst Micro Products

2491 San Ramon Valley Blvd, Ste I-317

San Ramon, CA 94583

510-837-9098

Internet: PMP@GENie.com

Reviewed by Dustin Heyworth

Oh Say Can You ANSI . . .

I get really irked when I call up a local PC BBS and have to endure telecommunicating with a PC that expects me to have "ANSI" emulation so it can present menus, logon screens, and the like using color graphics. For years I've been using ProTERM, which will support ANSI in a limited, monochrome way, so I wind up answering "No" when these systems ask me if I can support ANSI. (And even then, lots of these systems send me ANSI text anyway!) Spectrum v2.0's support of ANSI is somewhat better, but it's still not perfect.

There is hope, however. For the past few years, Paul Parkhurst has been improving his terminal program, ANSITerm (originally reviewed by "Big" Dave Adams in *GS+* V3.N4). The current incarnation, version 2.12, is a very well-rounded competitor in the IIGS telecommunications market.

So What Does it do?

ANSITerm's main claim to fame is the fact that it gives you living-color ANSI emulation as good as any of the PC communication programs out there. In fact, I'd say that ANSITerm's emulation is the best I've seen on any non-PC computer. I'd even say it's as good as any I've seen on PC's! (Of course, I've only used the shareware program "COMit" on the PC, so I'm not sure if I've seen everything that true ANSI emulation on a PC has to offer.)

ANSI?

For those who don't have V3.N4 of *GS+* Magazine, or don't have it handy, I'll summarize Dave's excellent explanation of what "ANSI" is. The American National Standards Institute (ANSI) sets standards for all manner of things, including codes that computers can interpret to display graphics on screen. These codes can be sent via modem, so remote users can see fancy graphics when they dial into a BBS with ANSI emulation. The graphics that are sent and received aren't really much more detailed than the old MouseText character set like you'd find on an old Apple IIe, except they are in color, which means you can make the menus on an ANSI BBS look really colorful and pretty. (By the way, don't buy ANSITerm thinking you can log on to the Internet and see pictures of photographic quality in real-time—ANSITerm *isn't* a World Wide Web browser!) [The "ANSI Standard" used on PC BBSs isn't really 100% ANSI-compliant, it's actually a jumbled subset of the ANSI standard - Joe.]

Features Galore

When ANSITerm initially hit the market, it was the first program in the IIGS world to combine ANSI emulation with the features many of us have come to expect in a good Apple II or IIGS communication program. The program is written in 100% 65816 assembly language for speed, and ANSITerm uses a custom SHR character generator instead of QuickDraw II to help further boost the program's speed. Several terminal emulations are supported, including the PC-ANSI BBS standard, and the "ProTerm Special" emulation common to many Apple II bulletin boards. Support of high-speed modems, a scrollbar buffer, and support of all the common file-transfer protocols such as XModem, YModem, and ZModem were in the first release of ANSITerm.

When the jump was made to version 2.0, lots of new goodies were added. Paul must have had a copy of Dave's original review in front of him when he wrote the new code, because everything that Dave

Adams griped about got added or fixed in version 2.0. Dave wanted (and got): a break key, enhanced scrollbar support, a text editor, a macro language, more terminal emulations, and the Kermit file transfer protocol. I'll talk some more about most of these new goodies in just a bit.

But Paul didn't stop at version 2.0! The current release of ANSITerm (v2.12) comes with almost 60 pages of manual additions to cover the stuff added since version 2.0. There were several bug fixes implemented, lots of macro stuff added (the section explaining the new macro commands easily takes up half of the pages in the update), and a few new commands, including a "capture to editor" command that allows the editor to do double duty as a capture buffer, and commands to allow execution of a macro script file along with a command to show online cost, so you can see just how much money you're giving to your favorite online service, or Ma Bell.

When you send Parkhurst Micro Products your seventy bucks, you get back a cute little three-ring binder with everything you need inside. ANSITerm includes certificates for introductory memberships and free online time with both GENie and Delphi, along with the manual in loose-leaf format (which makes adding manual updates a snap), and four quick reference cards. Keep these handy, especially if you're gonna do anything with the macros, because it can get a little complex.

ANSITerm's got power in spades. Although it is a ProDOS 8 program (which means you can kiss your new desk accessories goodbye while you use ANSITerm [Note that although ANSITerm is a ProDOS 8 program, it still *requires* a IIGS - Joe.]), and has a PC-style interface that can be a little bewildering at first, there's plenty of horsepower under the hood of this program. Should you need help remembering your Command-p's and Command-q's (and what they do), you can reach a help screen by typing Command-?. One of the four quick

reference cards also shows this list of the main terminal commands.

GENie subscribers who use the CoPilot front-end program, take note: ANSITerm will be one of the programs that you can use with CoPilot by the time you read this. I never did get to sign on with it, but I did get the scripts up and running, and I did get to speak with beta-testers and Paul Parkhurst (who wrote the scripts for CoPilot, as well as the ANSITerm program itself). From what I saw, the ANSITerm scripts win the beauty pageant among the various CoPilot scripts; they are very colorful and well done. The screens and menus for the script portion of CoPilot that runs inside ANSITerm look a little better than the versions for other telecommunications programs, while providing all the features included in the other versions.

One look at the macros section of the main manual or the update, and it becomes clear to you how complex scripts such as the ones used in CoPilot are possible. This macro language is easily a match for Spectrum's or ProTERM's for complexity—it's almost a development environment unto itself! As a proud *non*-programmer who uses automatic logon macros and not much else, looking at the manual section on ANSITerm macros gave me the same sinking feeling in the pit of my stomach as when I tried to write my first Pascal program in college. It all looks wonderfully complex and capable, but I'm about as qualified to discuss the pros and cons of ANSITerm macro programming as I am to read this review to you in Mandarin Chinese. From what little I gleaned from reading the macro section though, it looks like pretty much *anything* you can do in ANSITerm can be a task you can write a macro for. It's kind of like UltraMacros for Appleworks: If you have the time, knowledge, and desire, you can write a macro to do nearly anything. For folks like me, however, we'll stick to auto-logons and writing simple ten-line scripts, and we'll count ourselves lucky to have all that extra power should we ever need it.

The VT-100 emulation in ANSITerm is a new feature since version 1.0, and it was noteworthy to me, since I have to use VT-100 to access my student account at the university I attend. ANSITerm's VT-100 support blows the doors off of ProTERM and Spectrum. In fact, I had major headaches even getting Spectrum's VT-100 display to show me anything but garbage when I logged on to my student account, and when it worked, it was a standard monochrome text display. ProTERM also works only in

monochrome, which is a bit drab when you run Lynx. Granted, ANSITerm's VT-100 emulation only gives two-color support, but even that is a vast improvement over the other programs I use to access my account, including ProTERM, Spectrum, and ZTerm for the Macintosh.

ANSITerm is no longer the only kid on the block with color ANSI support however. Spectrum 2.0 has ANSI support, but it was patchy at best for me, and the colors weren't as rich as they are in ANSITerm. Also, the display is a little slower, and if you switch back to the IIGS desktop to get at your new desk accessories or any of Spectrum's features such as the scrollback, editor, or capture buffer, your screen will probably be hosed when you get back into ANSI mode. Spectrum gets an "A" for effort, but given a choice between the two, I'll take ANSITerm's ANSI emulation any day of the week.

Another advantage ANSITerm has over its competitors is the way it handles memory allocation for its various components. ANSITerm dynamically adjusts memory as needed between the terminal, editor, and scrollback. In plain English, this means that you're no longer stuck with a 45K editor buffer (as with ProTERM), or stuck with whatever memory the system decides is left over for an application to use (like Spectrum). If you have a 3MB text file you want to edit, and you have that much free memory, ANSITerm will let you load and edit it. Just try that trick with *any* other Apple II communications program. (Well, Spectrum *might* let you, but when was the last time you actually *had* 3MB free inside Spectrum?)

And if you fill up prodigious amounts of memory with your scrollback buffer, no problem. ANSITerm has several methods of dealing with a full scrollback. You can either clean out *all* the scrollback, save it to disk then clear it, or clear out half of it. There's even an AutoSave feature so you can hang on to important stuff. You can even set the AutoSave to do its thing when you're quitting ANSITerm, so your scrollback doesn't go into the great big bit bucket in the sky if you forget to save it.

Another nice thing about ANSITerm is that it provides good support for modems both young and old. I was able to use both my ancient Applied Engineering DataLink 2400 and my new InfoTel 14.4 modems with no problems.

Problems?

For some inexplicable reason, ANSITerm would crash at random for the first few

days after I installed it. I think it's some kind of INIT conflict though, because it behaves itself when I shift-boot or 8-boot (i.e. hold down the "8" key when booting) directly into ProDOS 8 before running ANSITerm.

Other than the random crashing, the only other real problem I ran into was doing ZModem file transfers from my school's server. Anytime I started a transfer, it would be immediately aborted. A call to PMP's tech support traced the source of the problem, after Paul called cross-country to log on to my server. Unfortunately, some PC boards and UNIX servers ignore the parameters that ANSITerm tries to define when it begins a file transfer—when ANSITerm is basically trying to tell the host, "OK, I can take in this much data into my buffer, then I gotta stop and dump it to disk." Since the host won't listen, ANSITerm says "The heck with you," and aborts the transfer. This *isn't* really ANSITerm's problem, but that's cold comfort on those rare occasions that it happens.

The Last Word

ANSITerm was, in Dave Adam's words, "a diamond in the rough" back in the days of version 1.0. However, with all of the enhancements, bug fixes, and improvements that have been done since then, version 2.12 has become a very polished gem indeed. I think that ANSITerm can rightfully take a place next to the other giants in the IIGS telecommunications world such as ProTERM and Spectrum. It is a mature, stable program that has all of the features of any of the other major programs, plus a few extras that it does just a little bit better than rest of them, such as full-color ANSI, VT-100, and VT-52 support. It takes a little retraining to acquaint yourself with ANSITerm's interface if you've gotten used to using another program, but the benefits ANSITerm offers make it worth your while. If you're using your IIGS to access a local ANSI BBS, or to do some net surfing (with Lynx) thru an Internet provider, ANSITerm deserves a shot. GS+

Golden Orchard Apple II CD-ROM

Price: \$65

Shipping: \$2 to U.S.A.
\$3 to Canada or Mexico
\$5 to anywhere else

Requires an Apple IIGS with a CD-ROM drive and a SCSI card. (A hard drive, System 6.0.1 and 4MB of RAM are recommended.)

Jim Maricondo
P. O. Box 11005
Stanford, CA 94309-1005
Internet: digisoft@hypermall.com

Reviewed by Steven W. Disbrow

Here's the problem: You bought a CD-ROM drive for your IIGS, and you can't find anything to use with it. (Well, obviously you haven't been reading *GS+* Magazine very long! We've reviewed several CD-ROMs for the IIGS... but I digress.) So, you've been looking high and low for something, *anything*, to stick in that CD-ROM drive. Well, look no longer, the Golden Orchard Apple II CD-ROM is finally here!

(Hmmm, it sure does take a long time to type "Golden Orchard Apple II CD-ROM!" So, I'm going to call it the "GO-CD" from now on. [Hey, I could have called it the "GOAT-CD!"])

What is it?

The GO-CD is a CD-ROM containing over 600MB of Apple II and Apple IIGS content. Of that 600MB of stuff, almost all of it is IIGS-specific. (There are a few megabytes of stuff for users of older Apple II computers, but a lot of that stuff also has a IIGS "slant" to it.) So, as far as I'm concerned, that makes the GO-CD the first Apple IIGS-specific CD-ROM produced.

On the GO-CD, you'll find all kinds of stuff for your IIGS, including: System Software (several different versions), utilities, fonts (TrueTypes and bit-maps), graphics (in many different formats), sounds (also in many different formats), applications, source code and lots, lots more.

How do You Use it?

Well, depending on the SCSI card you own, using the stuff on the GO-CD is either "easy" or "mostly easy." If you own an Apple II High-Speed SCSI card, you just stuff the CD in your CD-ROM drive and go. If, however, you own a RamFAST/SCSI, you have to do a small amount of work before you can use the disk.

Basically, you have to use the RamFAST utilities to activate the various partitions on the CD-ROM. If you don't activate the partitions, none of them will show up in the Finder (or any other program). This isn't the GO-CD's fault, but it is annoying. It's especially annoying when you realize that you are going to have to do this every time you turn your computer off and on again! As if that weren't nasty enough, the RamFAST can only have eleven SCSI volumes mounted at any time—and there are *seven* different volumes on the GO-CD! So, if you already have several volumes mounted you'll have to pick and choose among the seven CD volumes that you want to activate.

But, once you get the disk mounted, it's pretty much smooth sailing from there. One reason for this is that very little of the material on the GO-CD is compressed. This means that if you are in the Finder perusing the GO-CD and you find an application that you want to run, you just double-click on it and the Finder runs it! So, you don't have to waste time, and disk space, uncompressing something to check it out—only to find that it wasn't worth the effort.

Another nice thing about the GO-CD is that the first partition on it is a bootable ProDOS partition with a minimal System Software v6.0.1 setup installed on it. (The other six partitions are in HFS format, so you'll need to boot with System 6 or 6.0.1 just to get at them.) Of course, booting from a CD-ROM drive is a bit slow, so this is probably something you would only do in an emergency—like when your hard disk crashes and you have no other bootable disks.

What's on it?

Once you have your GO-CD mounted and you are ready to take a look at it, what sorts of things will you find? Well, as I said before, most of the stuff you find will be just for your IIGS. To be more specific, you'll find:

- Lots of graphics - Everybody seems to love graphics, and the GO-CD has got plenty of them! There's IIGS-format graphics, GIF graphics, PaintWorks animations and a whole slew of other types of graphics for you to look at. Some of the stranger formats (like the "DL" movie format) even come with applications so you can view the graphics without having to convert them to IIGS format first. (There are also some very naughty graphics on the GO-CD, which will certainly offend some people. I'll talk about that a bit later.)

- Lots of source code - One place the GO-CD really shines is in all the source code that is on it. There's source code to show you how to write just about any kind of IIGS program, as well as source code from *other* computing platforms. These "foreign" source files might not seem useful at first, but on close examination, they show how to read lots of different types of files (mostly foreign compression formats), which *could* be ported over to the IIGS.

- Lots of stacks - If you like either HyperStudio or HyperCard IIGS, you'll be in hog heaven with the selection of stacks on the GO-CD. The only problem is that some of these are "my first stack" affairs, and not very useful. Some, however, like a stack showing the periodic table of elements, are quite cool.

- Lots of applications and utilities - In fact, an entire partition (about 80MB) of the GO-CD is devoted to applications! You'll find graphics applications, games, productivity, etc. If it's a freeware or shareware Apple II application that's come out in the last five years, chances are you'll find it here. (In fact, I found several applications here that I hadn't ever been able to find *anywhere* else. Stuff like: HyperC, GSForth, and Little SmallTalk.)

- Lots of system extensions - We all know that system extensions (new desk accessories, Finder extras and the like) are probably the most popular type of IIGS software there is. Accordingly, the GO-CD has a *ton* of these little beauties on it.

- Lots of other stuff - A lot of the stuff on the GO-CD defies classification, so there is a partition just for miscellaneous items that didn't fit anywhere else. Unfortunately, some of this miscellaneous stuff is, well, useless. For example, I don't know why, but there's an old list of phone numbers for people that work at Apple. Another example is a set of text files that tell you how to invest in the gold market. What the heck is *that* doing on here?

Of course, there's a *lot* of material on the GO-CD that I haven't even mentioned. Some of it is great, some is good and some of it is downright... odd. But, for the most part, the GO-CD contains a good mix of useful stuff. Best of all, it's relatively current, and the focus of most of it is squarely on the Apple IIGS.

So, What's Wrong With It?

Well... the main problem I have with the GO-CD is that there is quite a bit of material on it that seems out of place, or

even useless. For example, the list of phone numbers and the investing information I mentioned earlier. In addition, there's a copy of the *GS+* Magazine Writer's Guide (huh?), a picture of the guy that put the CD-ROM together, and some other really weird stuff that seems to have no purpose other than to just be there. There isn't a *lot* of this stuff, but it does seem to point to either intentionally padding the disk with filler material, or simply not paying attention to what was going on the disk. (There is also some duplication of material on the disk, which also indicates a lack of quality control.)

Another example of filler on the GO-CD can be found in some of the hypermedia stacks that I mentioned earlier. Many are only half finished and several others are obviously first attempts at stack construction. Surely there must have been some better stacks to choose from!

Another problem is that a lot of the graphics and sound files are not in what I would call the most "convenient" form. For example, many of the sound files aren't in rSound format. So, if you find a sound you want to use with the Sound control panel, you'll have to convert it to rSound format before you can use it. (This of course, is a nit-pick.)

There is no overall index or table of contents to tell you what is on the GO-CD. This isn't really a very big problem however, because most of the partitions and folders have names that make it fairly easy to find what you want. However, with the sheer volume of stuff that's on this disk, it would have been nice to have a "one-stop" place to search for a particular file.

The last problem I have to address is that some of the graphics on the GO-CD are of an adult nature. Fortunately, most of the pictures are clearly marked as "X" rated and, for me personally, this isn't much of a problem. Unfortunately, there are some naughty pictures on the disk that *aren't* marked as adult, so there is the chance of an unsuspecting person stumbling across one. (Most of the unmarked pictures are "R" rated however, and not truly "X".) Be that as it may, the biggest problem here is that the GO-CD was touted as a collection of Apple II software, and not a collection of Apple II software and adult pictures. Not mentioning that this material was on the disk was a very serious oversight. Besides, just because a picture of naked people is in Apple II format, that doesn't make it Apple II related. (Of course, if the Woz were in some of these pictures, that would be a different story!)

Conclusion

Personally, I was a little disappointed with the GO-CD. The main reason for this was the lack of quality control and the resulting dubious value of some of the material on the disk.

However, these less than useful files make up a very small percentage of the total material on the disk. On the whole, this is a very complete collection of Apple IIGS related material. Like the AUGE CD that I reviewed a few issues back (*GS+* V6.N2), it's probably worth having just for the fact that it's a great archive of IIGS System Software. But, is it worth having if you've already got a great archive of IIGS System Software (like the AUGE CD)? Well, yes. The GO-CD is also an excellent source for software that you probably won't be able to find anywhere else. If you don't mind the presence of the adult material and running into the occasional useless file, I would recommend that you get a copy.

GS+

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or RamFAST/SCSI card.

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801-778-1000 (U.S.A.)
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Internet: info@iomega.com

Reviewed by Steven W. Disbrow

Buzzzzzz

Around the beginning of this year, there began to be a "buzz" about a new SCSI hard drive that had just become available for the Macintosh. According to the buzz, this new drive was small, light, and it used removable cartridges that each held up to 100MB. At first, this wasn't really big news in my book. Small, light, high-capacity, removable hard drives had been available before (i.e. the 200MB SyQuest drive), but they never really caught on because they were just so dang expensive, and/or because they used non-standard media.

This new drive was different though, because, unlike the drives before it, it was inexpensive. Actually, it wasn't just inexpensive, it was downright *cheap*! The prices at the top of this review say it all: \$199 for the drive (*including* one 100MB

disk), and then additional 100MB disks are just \$19.95 a pop! Compare this to the cost of a low-end SyQuest drive (about \$200 for the drive [which doesn't usually include a cartridge], and then additional disks are around \$50 each, and they only hold 44MB), and you'll see why folks began buying up these drives like there was no tomorrow.

Of course, like all neat new innovations, this new drive wasn't *intended* to be used with an Apple IIGS. So, for several weeks, there was lots of discussion in the Apple II community as to whether or not the IIGS could even use this cool new hardware. The answer is: of course it can! However, there are two tricks involved:

- First, you actually have to get one of the things! The demand for the Iomega Zip Drive has been so incredible that, when you order, you should be prepared to wait at least two weeks before you get yours.
- Second, you will probably want to re-partition and reformat all of the disks that you buy to use with the Iomega Zip Drive. Why? Well, when you get a Zip Disk (even one that's formatted for the Macintosh), it will already have *three* partitions on it. Two of these partitions are tiny (just 5K each), and simply can't be used by your IIGS. Since they can't be used on the IIGS "as is," when you first put the disk in the Zip Drive, your IIGS

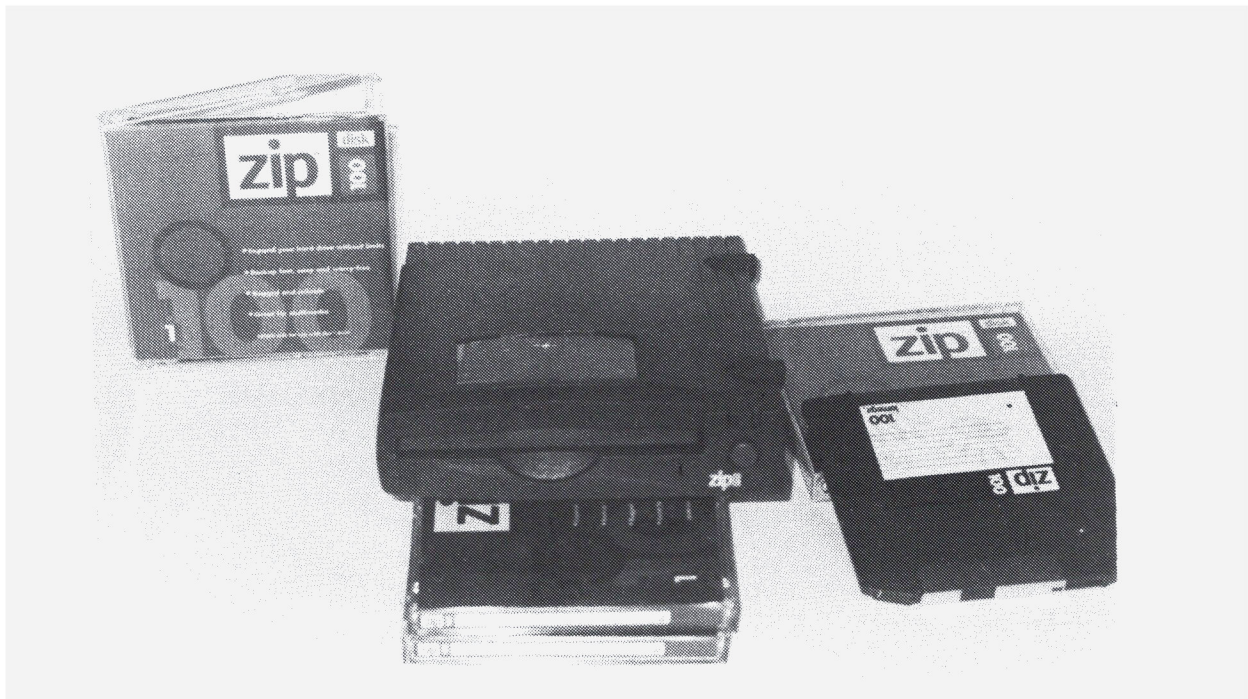
will ask you to reformat these tiny partitions. If you do this, you'll end up with two 5K ProDOS partitions and one huge (100MB) HFS partition. Unfortunately, the only way to get rid of these useless little 5K partitions is to re-partition the disk. (Besides, most folks will want at least one 32MB ProDOS partition on each Zip Disk.)

Let's Look at It

Now that we've gotten a little background on this product (and answered the question of if it can be used on the IIGS), let's back up a little and look at the drive itself.

As I said before, the Iomega Zip Drive is a disk drive that uses removable media. (The Zip Drive is more a "floppy" drive than a "hard" drive, because the media itself isn't very rigid. But, it's tough for a lot of people to refer to a 100MB disk as a "floppy" disk!) Physically, the drive itself is a little wider than your 3.5-inch disk drive, and a little shorter vertically. The drive only weighs about a pound (with a disk in it), but it does have a small external power supply that weighs about as much as the drive itself. (The Zip's power supply is smaller than your typical "power brick" that many older hard drives use, but it's still large enough to cover two outlets on your power strip.)

One reason the drive is *so* light is that its shell appears to be made of a really thin and flimsy plastic. However, the drive



must be fairly tough, because Iomega packs it in a carton made of material that wouldn't be able to protect raw eggs from a three-foot drop! The drive is also intended to be portable—just disconnect it and run with it, no special case needed. However, because of the really dubious nature of the material the drive is made of, I'd advise extreme caution when handling this drive.

On the front of the drive are two lights (one showing power status, the other showing drive activity), an eject button and, of course, a slot for the disk. On the back of the drive you'll find two 25-pin SCSI connectors, an emergency disk eject hole, a SCSI ID selector, and a switch for setting the SCSI termination of the drive. We'll look at each of these in a moment, but first, did you notice that something was missing? What could it be . . . ?

That's right! There's no power switch! Apparently Iomega expects everyone to use a power strip or similar device to turn the Zip Drive on and off. This isn't really that big a deal, most folks already use power strips to turn their peripherals on and off, but it is indicative of the corners that were cut with this drive to get its price down to that "magic" \$200 mark. (Of course, like all SCSI devices, the Zip Drive needs to be powered up before you turn your computer on, so hooking it up to a power strip would probably be a good idea even if it had a power switch.)

Now, let's look at that stuff on the back of the Zip Drive. The two SCSI ports are the first thing you'll notice. Having two

of them is really great, but since they are only 25-pin connectors, you'll need to have some 25-pin to 50-pin SCSI cables if you need to add the Zip Drive to a chain of devices with 50-pin connectors. Iomega includes a 25-pin to 25-pin SCSI cable with the Zip Drive, so if the Zip Drive is your *only* drive, you won't have any problems. (The Apple II High-Speed SCSI card and the RamFAST/SCSI card both have 25-pin connectors for hooking to the first SCSI device, so you wouldn't need any other cables to hook up just the Zip Drive.)

The next item of interest on the back of the Zip Drive is the emergency disk eject hole. This is similar to the emergency eject hole that you'll find on your Apple 3.5-inch drives: you insert a straightened-out paper clip, push, and out pops the disk. But, Iomega says that you should *never* use this hole to eject a disk while the power is on. (They don't say what dire results may ensue, but it's not that hard to turn off the power, so why tempt fate?)

Finally, we have the two switches that set the Zip Drive's SCSI ID and termination. Every SCSI device ever made should have easy-to-read switches like these! (But then, what engineer thought that users would ever know enough to want to change this stuff?) The termination switch is especially nice: slide it up and termination is off (and you can put the drive in the middle of your SCSI chain), slide it down and termination is on (and you can put the drive at the end of your SCSI chain). The SCSI ID selector

switch is also nice, but it's another example of the corners that were cut to keep this drive inexpensive. You see, unlike most other SCSI devices, the Zip Drive can only have a SCSI ID of 5 or 6. This is fine, unless you want to hook more than two of these puppies up to your computer. It could also be inconvenient if you already have two devices with the IDs 5 and 6. Overall however, its a minor problem, which, for the price, I can easily live with.

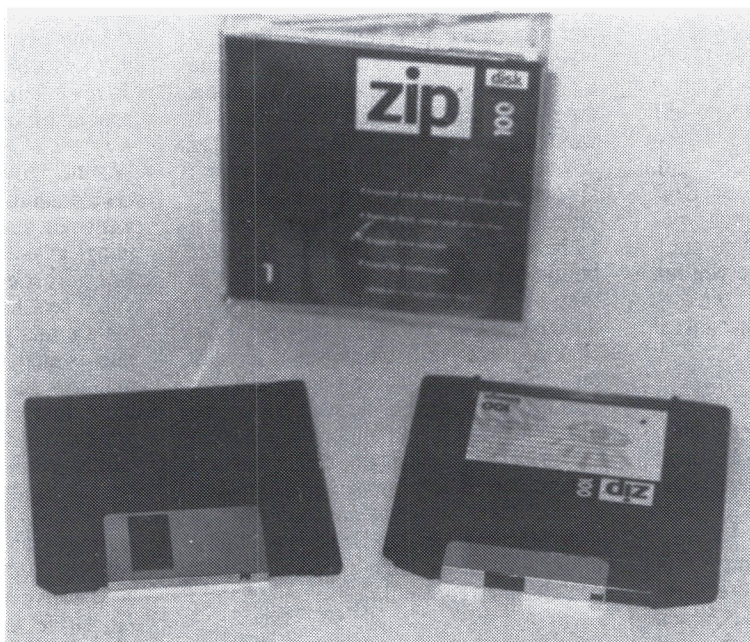
What About the Disks?

While the drive itself might appear fragile, the disks that the Zip Drive uses (which are called "Zip Disks") are anything but! They are slightly longer and wider than a standard 3.5-inch disk and almost twice as thick. The media inside the disk is fairly well hidden from view, but from what little of it I could see it appears to be even thinner than the media in a 3.5-inch disk. I suppose that's why the disk casing is so thick and sturdy—to protect the very delicate media inside. (Well, duh!)

If you spend some time looking at a Zip Disk, you'll notice two odd things about it:

First of all, there is a strange crystalline-looking "patch" on the back of the disk. What's it for? I don't really know! (I called Iomega's technical support several times to ask them about this, but I never could get through to a human.)

The second weird thing about these disks is that there doesn't appear to be any way to *physically* write-protect them! This



might be what the strange patch is for, but I don't really know.

Of course, on the Mac and the PC, you can write-protect a Zip Disk using the software that comes with the drive. On the IIGS however, we don't have that software, but you *can* still write-protect your disks. How easy or difficult that process is depends on which SCSI card you have. I'll talk more about this later.

Hey! I Said It Works!

As I said earlier, the Zip Drive was not intended to be used with the IIGS. Fortunately for us, the Zip Drive is a SCSI drive, so if you have a SCSI card in your IIGS, you can use the Zip Drive and you don't have to worry about *what* Iomega intended! However, the way the Zip Drive works with your IIGS will vary slightly, depending on *which* SCSI card you have plugged into your IIGS. But before we look at these differences, let's look at what you can expect regardless of which SCSI card you have.

First and foremost, the SCSI version of the Zip Drive *will* work with a IIGS equipped with a SCSI card. (I keep saying that, but it *does* bear repeating!) However, there is an IBM PC-specific version of the Zip Drive that *will not* work with the IIGS. So, if you decide to get a Zip Drive, make *absolutely* sure that you are getting the Macintosh SCSI version. (Your best bet to be sure of this is to order your Zip Drive from one of those catalogs with "Mac" at the start of its name. This is what I did.)

Second, in order to use the Zip Disks with your IIGS, you will want to re-partition and reformat them before you use them on your IIGS. (See above for an explanation of why.) If you own a RamFAST card, this means using the RamFAST utilities to do the deed. If you own an Apple II High-Speed SCSI card, this means using the Advanced Disk Utility to re-partition and reformat your Zip Disks. (Hint: Make sure you put a Zip Disk in the Zip Drive before you run your utility program. Otherwise, the disk you want to format may not be recognized at all!)

Beyond that, once you have the Zip Drive hooked to your IIGS, you can pretty much forget about it. It acts just like a hard drive, except it's a lot smaller, a lot quieter, and the disks come out!

Another important thing to point out is that while the Zip Drive does use disks that are *about* the size of an old 3.5-inch disk, this is *not* a standard 3.5-inch drive! Don't *ever* put anything other than an

actual Zip Disk into the Zip Drive, or you'll seriously screw up the drive!

RamFAST vs. High-Speed

So, once you've got the Zip Drive hooked to your SCSI card, what kind of "traps" can you expect? Well, if you've got a RamFAST/SCSI card, almost none. Hooked up to a RamFAST card, the Zip Drive behaves exactly the way you expect it too. Want to eject a disk? Push the eject button or drag the disk icon into the trash. Want to change disks? Eject the old one and put in a new one. It's a complete no-brainer. The *only* problem that you'll have with a Zip Drive hooked to a RamFAST is that you can't easily write-protect your Zip Disks. To write-protect a Zip Disk, you'll have to use the RamFAST utilities. This is extremely inconvenient, but it works.

When you hook the Zip Drive to an Apple II High-Speed SCSI card, things get a bit trickier. The drive behaves in basically the same way as it does with a RamFAST card, but there are lots of little things that just don't seem right. For instance, when you eject a disk in the Finder, the icon for the disk will sometimes stay on the desktop. Even dragging the icon into the Trash can won't make it go away! Actually, ejecting and trashing disks is the main problem that High-Speed SCSI card owners will have. Sometimes it works like it should, sometimes it doesn't. Also, the number of partitions that you put on a Zip Disk seems to have something to do with the problem. For example, whenever I made one big HFS partition on my Zip Disk, ejecting disks worked just like I expected it to. However, if there was more than one partition on the disk, things started to get weird. Dragging all of the partitions into the trash would sometimes remove all but the first partition, and other times it wouldn't do anything. Also, when I shut down my computer, the Zip Disk wasn't always ejected at the end of the shut down process. This meant that I had to eject it by hand—no big deal, just push the eject button. The only problem with this is that, according to the Zip Drive documentation, you should only put a Zip Disk in the drive if the power is already on. So, if the disk doesn't eject, and you turn off the power, it means a trip to the old emergency eject hole before you turn the drive back on again. This has the potential to be *very* annoying. (Actually, most of these problems are probably due to the fact that the Zip Drive is a SCSI-2 device [which the High-Speed SCSI card can't handle very well].)

Of course, the universe tends to balance annoying things with pretty cool things.

In this case, the cool thing is that if your Zip Drive is hooked to an Apple II High-Speed SCSI card, you *can* easily write-protect your Zip Disks! To do this, simply go to the Finder, put a Zip Disk in the drive and select a partition on it. Then pick the Icon Info menu item from the Special menu and, when the Info window shows up, click the mouse on the "Locked" check box! The selected partition is now write-protected! (This actually works for *any* standard SCSI drive hooked to an Apple II High-Speed SCSI card.) This is very nice. It's just too bad the RamFAST can't do this too.

Who Needs it?

This is a good question. If you already have a hard drive, do you really need this thing? Well, maybe not, but if you've ever done the "floppy shuffle" backing up your hard drive, just imagine how nice it would be to put *all* of that 80MB hard drive on *one* tiny little disk! Or, imagine having a couple of Zip Disks, each with a different version of the IIGS System Software on it. This would be a great way to organize all of those old games that will only run under certain versions of the System!

But what if you don't have a hard drive yet? Is the Zip Drive a good "starter" hard drive? Well, from a cost point of view, the answer is a big "yes!" For less than \$400 (which includes the cost of a RamFAST/SCSI card), every hard drive-less IIGS owner out there can have a 100MB hard drive that takes up almost no desk space! (And, like we've said over and over, having a hard drive will make you think your IIGS is a completely new computer!) The only problem with using the Zip Drive as a primary hard drive is that it is a bit slower than most fixed hard drives. But, it will be *much* faster than booting off of a regular floppy disk!

Wanna Buy a SyQuest, Cheap?

OK. I admit it. This review looks like I went out of my way to find "negative" things to say about the Zip Drive. But, if you go back and re-read my comments, you'll see that all the things I've pointed out are really just nit-picks. The bottom line is that this is a really wonderful product! In fact, if you can ignore all of the corners that Iomega cut to keep its price down (only two SCSI IDs, flimsy casing, etc.), it's probably the *best* mass storage product to come along since the original SyQuest drive! If you've been feeling cramped for storage space or you've been waiting for a really inexpensive and *big* hard drive, getting a Zip Drive for your IIGS could be just what the doctor ordered! In fact, I think I'm going to order a few more! GS+

Second Sight VGA Video Card

By: Andrew Vogan
Joseph A. Yandrofski
Jawaid Bazayr

Price: 8-bit Video - \$169
24-bit Video - \$199

Requires an Apple IIGS and an AppleColor RGB monitor. A VGA Monitor is *very* strongly recommended! System Software v6.0.1 is required for the supplied SecondView software. This board must be installed in slot 3 on a ROM 01 IIGS. (You can perform a hardware modification to install the card in another slot.) It can be installed in slots 1 through 6 on a ROM 03 IIGS. (There is also a Second Sight model that can be used by the Apple IIe. It costs \$169.)

Sequential Systems
1200 Diamond Circle
Lafayette, CO 80026
303-666-4549
Internet: sequential@hypermall.com

Reviewed by Steven W. Disbrow

Where Ya' Been?

"Hi there! Say, how long have you and your IIGS been under that rock? A year? Well then, you probably haven't heard about the new Second Sight VGA Video Board for the Apple IIGS have you? Well, crawl out from under there and I'll tell you all about it . . ."

The Second Sight VGA Video Board is an expansion card that lets you hook an industry-standard VGA (Video Graphics Array) or Super VGA monitor to your IIGS. But that's not all it can do for you! If you don't have a VGA monitor, you can also hook your old AppleColor RGB monitor (i.e. a standard IIGS monitor) up to the Second Sight card and it will allow your IIGS monitor to work at a resolution of up to 640x400! Your IIGS monitor will also be able to display up to 256 colors at once, without dithering!

What You Get

When you order your Second Sight card, you'll get a small box containing the Second Sight card, a manual, and two cables for connecting a monitor to the Second Sight board. One of the cables is for connecting your old AppleColor RGB monitor, and the other is for connecting a VGA monitor. (Note that you *can* hook both cables up at the same time, but you shouldn't! The Second Sight can only drive one monitor at a time and bad things could happen if you try to run two monitors directly from the Second Sight card. There *is* a way to use two monitors

at once however, and I'll talk about that later.)

The card itself is fairly normal looking, and you install it much like you would any other Apple II expansion card. The only catch is that if you have a ROM 01 IIGS, the card *must* go in slot 3. (You can perform a hardware modification [which is described in the manual] to your IIGS that will let the Second Sight card live in a different slot, but only a qualified computer technician should attempt it.) The problem with this is that most IIGS owners will have an accelerator card in slot 3, and the cable for the accelerator probably won't be long enough to reach another slot. Fortunately, the Second Sight manual describes a cool little trick that ZipGS owners can use to make the cable reach from slot 1. (TransWarp GS owners *should* be able to move their accelerator to slot 4 . . . I think the cable is long enough.) If you have a ROM 03 IIGS, you can put the Second Sight card in slot 1 through 6, but *not* slot 7 (or the memory expansion slot).

Once you've decided which slot to put the card in, the only other trick is installing the appropriate cable and running it outside your IIGS. The only problem you will encounter here is that the cables supplied with the Second Sight card don't "mount" correctly in any of the "knockouts" in the back of the IIGS. This basically means that you have to just leave the cable hanging out the back of the IIGS. (No big deal, but I did waste a few minutes trying to figure out which hole the cable was supposed to fit.)

After you have the board installed, all you need to do is connect your monitor's cable to the Second Sight's cable, turn on the power, and presto! The "Welcome to the IIGS" screen is on a VGA monitor!

Well, OK, there's more to it than that. So, let's take a look at what you can expect to find after you hook up your Second Sight card.

Overall Differences

Regardless of the type of monitor you hook up to the Second Sight card (either a new VGA or your old Apple RGB), you will notice that a few things have changed after you install the Second Sight card.

The first thing I noticed was that, whenever the Second Sight displays a text-only screen (like the classic desk accessories screen) the text looks exactly like the standard set of characters that you see on an IBM PC! The only real problem I had with this (after I got over the initial shock) was that some of these

PC-style characters aren't 100% equivalent to their Apple II counterparts. For example, the Apple II vertical bar character that is often used to draw boxes on the text screen does not leave gaps when you place one above another. Unfortunately, the same can't be said for the PC-style vertical bar that's used by the Second Sight card. However, I don't use that many text-only applications, so this won't be much of a problem for me.

The biggest difference that you'll find with your monitor hooked to the Second Sight card is that a few of the Apple IIGS's video modes simply aren't supported. For example, at this point, the old Double Hi-Res video mode just doesn't work with the Second Sight card. While Double Hi-Res was never used very much by Apple II programmers, this does have the unexpected side-effect that the IIGS self-test simply won't be visible on a monitor hooked to the Second Sight card! (Part of the self-test apparently runs in Double Hi-Res mode, which means that it just doesn't show up on screen.) Another missing video mode that could prove bothersome is Fill-Mode. Again, Fill-Mode isn't used very often, but it can show up (or not show up in this case) in some very surprising places. For example, the program Animasia 3-D (reviewed in *GS+ V6.N5*) makes extensive use of Fill-Mode to generate fast animations. If you play one of these animations back through the Second Sight card, part of it will show up, but it will look very, very strange indeed!

Hooked on RGB

One of the nicest things about the Second Sight card is that if you don't want to spend the money for a new VGA monitor, you don't have to. The Second Sight card will quite happily send its video output to your old AppleColor RGB monitor. Not only that, but, with the right software, it will give you increased resolution (up to 640x400, interlaced [for more on interlacing, see "Mr. Priceguide Investigates VGA Monitors" elsewhere in this issue) and a much better selection of colors to work with (up to 256 pure colors, with no dithering).

The key to these improvements is, of course, having "the right software." At this point, there is only one such piece of software: the SecondView program (which we'll discuss in a bit). Everything else that you use will be the same old software, with the same old graphics. But, there *will* be a few tiny differences . . .

For me, when my RGB monitor was hooked to the Second Sight card, the

overall quality of the picture seemed a bit smaller and sharper. This made me very happy indeed and I decided that I wouldn't even need a VGA monitor! But, a few minutes later, I found myself shaking my head and doing double-takes at the screen . . . the image seemed to be "swimming" and it was giving my eyes fits! After a few more minutes passed the swimming went away, but then I began to notice a pretty intense flicker on the screen (the florescent lighting in my office probably didn't help), and a high-pitched whine seemed to be filling the room. I tried working with this setup for as long as I could, but I just couldn't take it. So, the next day I bought an ultra-cheap VGA monitor to use with the Second Sight card.

To be fair, I have to point out that the swimming, flickering, and whining that I noticed will *not* be noticeable by everyone! Different people have different tolerances for these sorts of things. So the motto here is that if you are a "sensitive" type, like myself, you probably won't be able to get away with using your old monitor with the Second Sight card. (I should also point out that Sequential Systems is aware of these problems and is working to correct them. In fact, I was told that they *had* corrected them and I may have gotten a bad board. Either that, or my RGB monitor was flaky. It's an *old* monitor, so the latter may well be the case. It's also very likely that the "swimming" effect was being caused by some sort of electrical interference from something in my office. Given the number of gadgets on my desk, I'd say that's not too far-fetched.)

Very Cool VGA

After I bought and hooked up a VGA monitor, things got a *lot* better. The swimming, flickering and whining went away, but the overall look of the screen was . . . odd.

If you are a long time *GS+* Magazine reader, you know that I use desktop applications almost 100% of the time. So, the first thing I did after hooking up my VGA monitor was to go into the Finder to see how things looked. The VGA monitor I bought is a 14-inch monitor, and, by default, it takes the image that it gets from the Second Sight card and fills the screen with it. This means that an image that was intended for a 12-inch screen was being blown up to fill a 14-inch screen. The result was a very "blocky" image that looked very strange at first. As time passed however, I got used to the big blocky letters and I really began to appreciate the fact that I could now actually edit articles at a size of

10 points without getting a headache! Eventually though, the blocky effect began to bother me again . . . After all, wasn't the point of the Second Sight card to *improve* the video output of the IIGS?

So, I began to fiddle with the controls on the monitor and found that I could actually shrink the image on the screen so that it became about the same size as the image that came out of my old IIGS monitor. Best of all, the decreased size *didn't* make the image look worse, it made it look better! The text was sharper, and I could *still* read it at 10 and even 8 points! The only problem with this solution was that I was now using my 14-inch monitor as a 12-inch monitor with a big black border around the image!

Which brings me to the next thing I noticed: my border color was missing! Normally my IIGS display has a green border, but now, on the VGA monitor, the border was black. A chat with Jawaid at Sequential Systems confirmed what I suspected: VGA monitors simply don't like displaying the normal IIGS border color. Ah, well, who cares? For me, the border was always just wasted space.

After working with the VGA monitor for a while I began to notice that graphics seemed to draw a little slower. I can't really describe the effect, but it's most noticeable when you pull down a long menu or when a Standard File dialog box is drawn. Fortunately, the slowdown isn't too bad (at least not with a ZipGS installed), and since the delay is only between the Second Sight card and the VGA monitor, it doesn't actually affect the *overall* speed of the computer.

It took a while for me to catch it, but the most subtle, and best, difference that I noted with the VGA monitor attached is that those annoying black lines that run across the Super Hi-Res screen simply weren't there any more! Since I use a plain white background in all my desktop programs, it now looks like all of my programs are running on top of a nice white piece of paper. This may not sound like a big difference, but it seems to be much less stressful on my eyes as the days go on.

OK, so using a VGA monitor gives you a nicer overall image for your desktop programs, but what about the increased resolution? What about all the colors?

Well, as I said before, to get at the extra colors and improved resolution that the Second Sight card has to offer, you have to use software written *specifically* for the Second Sight card. In other words, just

plugging a Second Sight card into your IIGS won't turn Platinum Paint into PhotoShop and it won't turn GraphicWriter into PageMaker. Your old IIGS desktop software will run at the same resolution and with the same number of colors that it always has. The main difference will be that the video will seem to be crisper and, in general, just plain look better.

Getting a SecondView

So, you need special software to *really* take advantage of what the Second Sight card has to offer. At this point, there is only *one* piece of software that can do this. It's called SecondView and it comes with the Second Sight card.

If VGA graphics were the norm on the IIGS and I were *just* reviewing SecondView, it would probably get two thumbs down, a golden turkey, and a raspberry. The program only displays a few types of graphics, it tends to crash quite a bit and it doesn't have any real "features." But hey, given that SecondView is the only VGA game in town, it ain't so bad.

The main purpose of SecondView is to let you look at GIF, TIFF, and PICT graphics in all their glory. Accordingly, the two main things you can do from inside SecondView are open a picture to look at, and quit the program.

The version of SecondView that came with my Second Sight card would open GIF files, PICT files and 8-bit TIFF files. (Sequential Systems sent me a new 24-bit version of the program, but I didn't have time to test it for this review. See the [a.Read.Me](#) file for any last minute info on this.) The disk that SecondView comes on also contains some sample pictures for you to look at. (These are the same pictures that were in the famous Second Sight ad on the back of *GS+* V6.N1.) So, how do they look?

They look freakin' *great!*

In fact, they even looked freakin' great on my old AppleColor RGB monitor!

The Second Sight card and the SecondView software do such an amazing job of displaying graphics that I had a hard time believing that these pictures were coming out of my IIGS! But they *were* coming out of my IIGS, and picture after picture, the results were just as amazing. If you've ever suffered from graphic envy, spending just one minute with the Second Sight card, the SecondView software, and some killer GIF files, will cure you!

It's In Tomorrow's Mail!

GNO/ME - \$89

GNO/ME stands for the "GNO Multitasking Environment." GNO/ME is a command shell that brings multitasking to your IIGS. Using GNO/ME, you can start up multiple tasks (like compiling different parts of a program) and have them execute concurrently! GNO/ME can also be used as a replacement for the ORCA command shell and is compatible with all of the ORCA utilities and languages

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. (More RAM is strongly recommended for multitasking!) Price includes First Class shipping to U.S. Surface mail shipping to the rest of the world is an additional \$5. Air Mail shipping to the rest of the world is \$10.

Splat! - \$39.95

Splat! is a *source level* debugger for use with ORCA/C, ORCA/Modula-2, and ORCA/Pascal. With Splat! installed, you can step or trace through your program's source code while your program executes! You can also view and set the values of variables and you can even view complex data structures, like Event records, and watch their contents change as your program executes! If you program the IIGS, you need Splat!

System requirements: System 6.0 or later, 2MB of RAM, a hard drive and either ORCA/C, ORCA/Modula-2 or ORCA/Pascal. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$4.

Switch-It! - \$39.95

Switch-It! is a program switcher and launcher that allows you to have more than one IIGS application in memory at the same time.

You can switch between these applications instantly, just by picking the application you want to work with from the menu bar at the top of the screen! Switch-It! also comes with several new desk accessories (NDAs), that allow you to easily copy data from one application that you have in memory, and then paste it into another application.

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$4.

Pick 'n' Pile - \$20

Pick 'n' Pile is a great game for your IIGS that would probably remind you of Tetris, if Tetris had walls, flowerpots, wildfires, bombs, and death heads! In Pick 'n' Pile, your job is to clear the screen of various colored balls, by stacking them on top of each other. As you try to accomplish this task, some helpful items appear to make your job easier (like the bombs), and other items appear to make your job more difficult (like the death heads). It's extremely addictive, and a lot of fun!

System requirements: System 5.0.4 or later, 1MB of RAM. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$3.

ZipGS Accelerator - \$189

Are you tired of waiting on your IIGS? Well then, plug in a ZipGS accelerator card and get ready to blow the doors off of your favorite programs! With a ZipGS 8/16 accelerator installed, your IIGS will run at a snappy 8MHz instead of the wimpy 2.6MHz it's running at now. The Finder will run faster, AppleWorks GS will run faster, EGOed will run faster, in fact, just about *everything* that you do with your Apple IIGS will happen faster!

And the ZipGS is simple to install! All you have to do is remove the CPU chip, plug the ZipGS into the CPU socket, plug the ZipGS circuit board into either slot 3 or 4 and then you are ready start computing at ludicrous speed!

System requirements: A ROM 01 or ROM 03 Apple IIGS and a burning desire to go faster!
Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world.
Air Mail shipping is an additional \$5.

Addressed For Success - \$35

Addressed For Success is the *only* IIGS-specific label design and printing application available! With it, you can quickly and easily create and print labels on any IIGS-compatible printer, using any font that you have. Addressed For Success comes with dozens of pre-made label templates for use with Avery brand labels, or you can easily design your own templates for use with other brands of labels. Addressed For Success also performs bulk sortations for reduced postage costs, prints postal bar codes, and allows you to include up to three different graphics on each label!

System requirements: System 6.0 or later, 2MB of RAM and a hard drive. Price includes First Class shipping to U.S., Canada, Mexico, and surface mail to rest of the world. Air Mail shipping is an additional \$3.

The Very Fine Print

All product names are trademarks of their respective owners. Orders for in stock items are shipped no later than the next business day. We accept Visa and MasterCard. Personal Checks and Money Orders (made payable to "EGO Systems") are also accepted. Overnight shipping is available at additional cost, call for details! Product support and warranties are provided by the manufacturer, however, we will replace any defective merchandise, and we will give a refund for anything that you decide you don't want, provided that it is returned to us with all materials intact. (Sorry, shipping charges are *not* refundable.) You can FAX your order to us at 1-615-332-2634, 24 hours a day.

Our hours are 9 a.m. to 5 p.m. Eastern time, Monday through Friday. To order, call:

1-800-662-3634 or 1-615-332-2087
EGO Systems, P. O. Box 15366, Chattanooga, TN 37415-0366

What Else Is There?

At this point, I've told you that the Second Sight card (with a VGA monitor) will improve the overall video quality of your IIGS desktop programs, and that, with the appropriate software, the images you can get out of the thing are nothing short of incredible. What's left to talk about?

- The documentation. The Second Sight documentation is a fairly straight-forward booklet that shows you how to install the card, tells you about the SecondView software, and tells you what to expect from the various monitors you can hook up. It also includes a question and answer section, tells you about Sequential System's toll-free technical support, and gives a bit of technical detail on how the Second Sight card works. It's not a spectacular manual, but it gets the job done.

- I should also point out that current versions of Sequential's DiscQuest and DiscQuest Encyclopedia software do *not* yet take advantage of the Second Sight card. Sequential is working on updates however, and they might even be available by the time you read this.

(Be sure to send in your registration cards for these packages if you want to know about these updates!)

- If you are planning to use an Apple Multi-Scan monitor with your Second Sight card, you will probably need to contact Sequential Systems to get a special adapter. Apple, in its infinite wisdom, equips some (if not all) of its monitors with non-VGA-standard plugs and finding an adapter is next to impossible. (I called every cable company in the country and none of them could come up with an appropriate adapter.) Fortunately Sequential Systems plans on making these adapters available for people that need them. (Note that this will be a custom cable, so Sequential might have to charge you a few bucks for it.)

- If you have a *fast* animation (around 30 frames per second) and you play it through the Second Sight card, you'll notice that the animation looks jerky or that some frames are missing. This is even noticeable in some Twilight II screen saver modules.

- On a VGA monitor, you might sometimes notice that a couple of pixels that *should* be on the far left side of the screen are on the right side of the screen. To fix this, just pop into the text-based classic desk accessories menu and then go back to the desktop. (Sequential is

working to fix this, and it only happens once in a while.)

- With the Second Sight card installed you can hook two monitors up to your IIGS. Just plug your old AppleColor RGB monitor into the regular video out port and plug your VGA monitor into the Second Sight card. Both monitors will show the same thing (except when an ultra-cool graphic is being shown through the Second Sight card), but this setup *could* lead to some interesting two-monitor software.

- Finally, you'll find that after you've seen your IIGS video up on a VGA monitor, you won't *want* to go back to that tiny little AppleColor RGB monitor! Don't say I didn't warn you!

Conclusion

The Second Sight card is an *amazing* product. Best of all, it's a product that could bring some excitement back to the IIGS development community and may result in a (tiny) avalanche of new IIGS software. Unfortunately, the information needed to make this happen hasn't yet been released. Sequential Systems needs to move quickly and get the appropriate developer information into the hands of programmers so that they can start taking advantage of what this board has to offer. Of course, programmers won't write software for the Second Sight card until lots of people buy them. And people won't be inclined to buy them until there's lots of software.

Of course, if the Second Sight card improved the resolution of all of that old IIGS software that's out there, just about *everybody* would want one, and they

would want it *right now!* So, another thing Sequential Systems needs to do as soon as possible is to put out a patch for the IIGS System Software that will let most (if not all) of our old software take advantage of some of what the Second Sight card has to offer.

So, that brings us to the question, "should you buy one?"

Well, if you are a programmer, yes. Supporting the Second Sight card could very well represent the future of the IIGS marketplace. If you want to stay on top, you will have to support it whenever possible.

If you aren't a programmer, but you are unhappy with your current monitor, I'd also say yes. The improvement in video quality, even for old non-Second Sight-specific software, is probably worth the investment.

On the other hand, if you are happy with your monitor and don't see what all the fuss is about with these GIFs and such, you should probably wait and see what kind of software comes out for the Second Sight card in the next few months. But, as soon as you see something that you can really use, I'd advise you to snatch up a Second Sight card and a VGA monitor as quickly as you can!

Where Ya' Going?

"So there you have it. Pretty cool huh? So, uh, why were you under that rock anyway? The O.J. mess? Really? What? You want to know if it's over yet? Um, well, actually . . . here, use my phone to order yourself a Second Sight card and then I'll join you under that rock." GS+



Tuning Up MIDI Surgeon

By David M. Tribby

MIDI Surgeon v2.0 performs its translation and analysis functions significantly faster than version 1.0. This article was written to explain how it was done. It is intended for programmers who want to learn a few tricks about improving code performance, and it assumes that the reader is fairly knowledgeable about programming in general.

The basic method for improving software performance is to identify the "inner loop" of a program (the code that is executed the most) and focus your efforts on speeding up its execution. There are various speedup methods—translation from a high level language into assembly language, holding values that are calculated several times in variables, changing logic so a lower-level routine doesn't have to be called so many times, removing unnecessary code, etc.—but it doesn't do much good to spend time improving code that is seldom used. For example, don't bother to hand optimize startup, shutdown, or error handling routines.

Faster Translations

MIDI Surgeon is written in ORCA/C, which provides a "profiler" that will show the number of times each subroutine is called. Using the profiler involves recompiling with the appropriate debug pragma options set (see the ORCA/C manual for information on debug pragmas) and executing the program under the Prizm desktop environment, *not* the text-mode ORCA shell or the GNO shell. (The Splat! debugger can also profile code execution, but I don't have any experience with that product, so I can't really discuss its use here. However, the concepts presented here should easily work with the Splat! debugger.) I prepared midi2gs (which uses the same basic translation routines as MIDI Surgeon) and gave it a short MIDI file to translate. (Using a large file would have been tedious because of the slowdowns introduced by using the Prizm profiler.) The profiler works by counting the number of times a routine is

executed and by determining how much time is spent in each routine. While the profiler can count the exact number of times routines are entered, the amount of time spent within a routine is actually an estimate given by a random sampling using the system heartbeat, and may not be exact. However, the sampling is good enough to provide likely places to look for performance improvements. The results of profiling midi2gs with the small test file are shown in Table 1. (Note that the table only shows those routines using over 1% of the total time.)

Seven changes to translation code made it twice as fast. One change to analysis code made it nearly ten times faster.

The profile showed that several of the MIDI file access routines (egetc, readtrack, readvarinum) were high in the list of execution time. Because I did not write them (these are public domain MIDI access routines), I was reluctant to make modifications and possibly introduce nasty side effects. (Also, the ORCA/C manual warns that the profiler may report "suspicious" results for routines involved in disk I/O, leading me to believe the I/O routine numbers were overstated.) Of my own routines, it looked like TimeStamp, CombineTracks, and act_channel were the most likely candidates for improvement.

My test case for conversion was a MIDI file nearly 62,000 bytes in length, and containing over 15,700 MIDI events. I ran midi2gs (compiled with no debug code and most optimizations on) from the GNO shell and used the "time" command to determine how long it took to execute. The unmodified code took 110 seconds to do the conversion. Using the profile

information from Table 1, I then performed seven different modifications on this code. These modifications, and the time they saved, are summarized in Table 2.

In the CombineTracks routine, one easy way to spend less time was to allocate more memory to hold MIDI events. So, I increased the number of entries allocated from 50 to 150. Since each entry was fairly small, this did not cause memory problems. In addition, allocating 1,500 empty entries on startup rather than the original 50 was even more efficient, since most MIDI files have at least that many events to translate. These simple code modifications (change "A" in Table 2) saved seven seconds—a 6% improvement. Change "B" was closely related: don't free memory when done with a track, but reuse that allocated memory for the next track. Unfortunately, this had a much smaller effect: one second was saved, or less than 1% of the original time.

TimeStamp is a very short routine (see Figure 1). Its purpose is to put the three MIDI Synth time bytes in the correct order to form a long integer. It was coded so that it would be portable to other computer systems. (For example, I have compiled and run midi2gs on a Hewlett-Packard UNIX workstation, even though the HP 9000 stores long integer bytes in the opposite order from the Apple IIGS.) The performance cost of this portability was high because the TimeStamp routine is called each time one entry is compared to another, and that happens *thousands* of times—even for a small sequence. After replacing the ORCA/C code with seven assembly instructions (change "C"), execution time dropped by a whopping 21 seconds!

The "D" change reduced the overhead of making unnecessary subroutine calls. In order to get maximum performance, I ran the test conversion without requesting

Table 1: Results of Profiling midi2gs

The list has been sorted by heartbeat counts, and only routines using over 1% of the total time are listed.

Routine	Times Called	# Heartbeats	% of Total Heartbeats
egetc	7515	4251	22.5
TimeStamp	8990	3639	19.3
CombineTracks	25	2742	14.5
filegetc	7627	2568	13.6
readtrack	27	2278	12.0
act_channel	1547	1604	8.5
readvarinum	1751	971	5.1
msgadd	839	233	1.2

Table 2: Results of Seven Code Modifications

Each of these modifications resulted in a performance improvement.

<u>Modification</u>	<u>Time Saved (% of Original Time)</u>
A: More efficient memory allocation	7 sec (6%)
B: Reuse memory for next track	1 sec (1%)
C: Code TimeStamp in assembly	21 sec (19%)
D: Avoid sprintf if not "verbose"	2 sec (2%)
E: Convert part of act_channel to assembly	4 sec (4%)
F: Write assembly routine to copy sequence entries	3 sec (3%)
G: Avoid floating point math in time conversion	30 sec (27%)
Total time saved	68 sec (62%)

progress messages (low verbosity). The routine for printing status messages checked the verbose flag and, if it was set, printed the string passed as a parameter. By moving the verbose check back to each of the places the routine was called, the program got slightly larger but it avoided the instructions to call and return from an unnecessary routine. The status routine was called in two dozen places, but making the change only saved a couple of seconds.

The act_channel (channel action) routine doesn't do much: it allocates new entries if needed, converts the timestamp value, and fills in the pieces of the new entry. The "A" change helped the efficiency of the memory allocation step.

I thought that re-coding the assignments of the various fields (including timestamp) into assembly would have an impact similar to the "C" TimeStamp change. Alas, the "E" modification only shaved four seconds, no doubt because this code is used much less frequently than TimeStamp. Similarly, an attempt to optimize the copying of an individual sequence entry (change "F") only saved 3 seconds, probably because the system routine it replaced, memcpy, was already efficiently coded.

The last, and biggest, translation change ("G") was made to act_channel. The timestamp conversion mentioned earlier is necessary because MIDI Synth expects a quarter note to take 96 MIDI ticks.

Because sequences can use other ratios, the long integer representing the tick number must be scaled. MIDI Surgeon does this by setting the scaling factor to:

```
tick_mult = 96.0 / (float)
tick_val;
```

when it reads the MIDI file value. It used the scaling factor in act_channel to convert the number of ticks:

```
timestamp = Mf_currenttime *
tick_mult;
```

This harmless looking instruction ended up costing a tremendous amount of time because it involves floating point multiplication, something the Apple IIGS does slowly. Even worse, the conversion was totally unnecessary when the tick_val count happened to be 96. In most of the cases where a conversion was required, a simple integer multiply or divide was all that was needed. Removing the need for floating point arithmetic made the setup code longer and more complex: it checks for specific cases and sets the address of the appropriate conversion routine. But setup is only done once, and it saved a total of 30 seconds (over a *quarter* of the original execution time) for the conversion of the test file.

Putting all the changes together made conversions take less than half of their original time.

Faster Analysis

The other area of performance improvement was in the sequence analysis routines (which are also used for sequence surgery). The analysis and surgery of sequences is not performed in the shell-based midi2gs program, so I could only test in the desktop version of MIDI Surgeon. Rather than use the Prizm profiler on a desktop program (which can be difficult with large desktop programs), I chose optimizations by "search and guess." In order to see the results of code changes, I added code to report the amount of time an analysis took.

Figure 1: TimeStamp Conversion Code

The following code takes the three byte timestamp in a MIDI Synth sequence item and combines them into a long integer. The original C code is at the top, while the replacement assembly code is at the bottom. The change resulted in a 19% performance improvement for the entire program.

```
static long TimeStamp(SeqItemRecPtr entry) {
    long timestamp;
    /* Copy high-order byte */
    timestamp = entry->TimeStampHigh;
    /* Shift high-order byte into position */
    timestamp = timestamp << 16;
    /* Add the middle and low bytes */
    timestamp = (long) entry->TimeStampLow
        + (long) (entry->TimeStampMid << 8)
        + timestamp;
    /* Return result to user */
    return (timestamp);
}

static long TimeStamp(SeqItemRecPtr entry) {
    long timestamp;
    asm { /* Optimize this operation for IIGS */
        LDY #1 ; Get the high byte
        LDA [entry],Y ; from byte offset 1
        AND #0x00FF ; in the entry.
        STA timestamp+2 ; Store in high word of result.
        INY ; Get the low & mid bytes
        LDA [entry],Y ; from byte offsets 2 & 3.
        STA timestamp ; Store in low word of result.
    }
    return (timestamp);
}
```

I found it much more difficult to get accurate timing in the desktop environment. I ran the same analysis several times and got results that differed by more than 10%. Running directly from the Finder rather than under the GNO multi-tasking environment improved the stability of the results somewhat, but I finally had to remove about five desk accessories and inits (which must have been executing in the background and eating up time) before I could get consistent results for all of the time trials I ran.

I won't describe all the changes I made to improve the analysis and surgery commands, because most made no real difference. However, one had a tremendous payoff: I cut the analysis time by almost *ninety percent* by checking the "Stop" button in the progress window less often. Instead of checking if the user has hit that button after processing each entry, MIDI Surgeon now checks after every 32nd entry. All I can conclude is that the DoModalWindow tool call must incur a tremendous amount of overhead when it is called!

I hope other programmers will be able to learn something from my experiences. Sometimes a small change will have a big impact, and other times a significant effort will hardly be noticeable. Sometimes the answer is conversion to assembly language, but other times the key is changing the program's logic. Just remember to be sure that you have a way to accurately time the results of each change you make. And, whenever possible, narrow down your search to the code that is the most used and focus your efforts there. **GS+**

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The GS+ FAQ File

By Steven W. Disbrow

Each day, we get asked a lot of questions related to the IIGS. Some of these questions get asked more frequently than others, so we've decided to answer them once and for all in this department, "The GS+ FAQ File." If you have a question about your IIGS, take a look at the following questions and at the file GSP.FAQ that is on your GS+ Disk. (This file is in the Talk.To.GSPlus folder that is inside the self-extracting archive. The GSP.FAQ file contains the previous installments of this department and your question may very well be answered there.) If you can't find an answer to your question, give us a call or send us a letter and we'll try to answer it as quickly as possible! (By the way, just in case you were wondering, "FAQ" stands for "Frequently Asked Questions," and it is pronounced "fack.")

Q: I have a disk that I think is bad. How can I verify that the disk is really bad?

A: If you use the Finder, this is a very simple thing to do. (Lots of other programs let you verify disks too, but *everybody* should have a copy of the Finder, so that's what this example will use.) Here's a step-by-step example:

1) First, if you aren't already running the Finder, run it.

2) Next, put the disk that you want to verify into a drive. (Note that the Finder can verify just about any disk that shows up on the desktop. So, you could verify your hard disk or even your RAM disk if you wanted to. For this example, we're going to assume that you are verifying a 3.5- or 5.25-inch disk.)

3) When the disk shows up on the desktop, click the mouse on it once (not twice!), to select it.

4) Now, pull down the Finder's Disk menu and select the Verify menu item (it's near the bottom of the menu).

That's it! The Finder will begin to verify the disk you selected. The way it does this is it reads in each and every block of information on the disk. If the Finder can read a particular block without encountering an error, it assumes that the block is "good" and proceeds to the next one. If the Finder can read all of the blocks on the disk without any errors, it will tell you that all of the blocks on the disk are good. On the other hand, if there

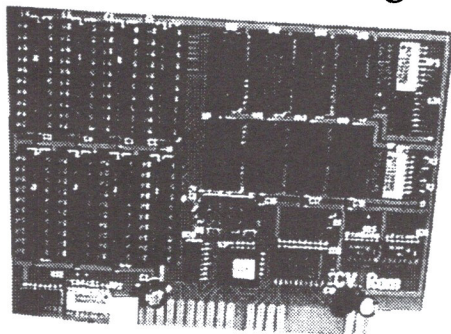
was an error, the Finder will tell you that there were one or more errors and it will ask you if you would like to see a list of the bad blocks that it found on the disk. This sounds nice, but the list itself is just a list of the actual block numbers (i.e. 300, 451, etc.) so they probably won't mean much to you. (They sure don't mean much to me!) However, this list can show you how many "problem spots" that a disk has. A much more informative operation is to "validate" the individual files on a disk.

Q: OK. So how do I validate the files on a disk?

A: Well, assuming that you are again using the Finder, this is just as simple as verifying a disk, and much more informative. To validate all of the files on a disk, do exactly what you did in steps 1 through 3, above. Then, at step 4, instead of picking "Verify" from the Disk menu, pick the Validate option from the File menu. When you do this, the Finder will start validating all of the files on the disk you have selected. The difference is that instead of reading the contents of the disk a block at a time, the Finder will read each *file* on the disk, one after the

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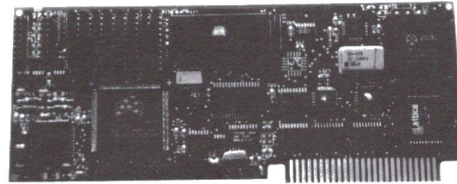


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other. If there are no errors during this operation, the Finder will tell you that the files on the disk appear to be OK. If there is an error however, the Finder will tell you that one or more of the files are damaged and offer to show you a list of them. If you tell the Finder to show you this list, it will show you, by name, exactly which files are damaged. This is much more helpful than the simple bad block listing that the Verify operation gives you.

Another good thing about the Finder's Validate operation is that you don't *have* to validate all of the files on the disk. If you just suspect one file of being bad, you can simply select that file with the mouse, and then pick the Validate menu item from the Finder's File menu. The Finder will then validate that file, and only that file. (You can also select multiple files and/or folders and validate them if you want to.)

Q: What's the difference between "freeware," "shareware," "public domain," and "commercial" software?

A: "Freeware" is software that the author has made freely available, while still retaining the copyright to the software. This generally means that you can distribute the software, but you can't change it in any way, and you usually

can't resell it for money without first getting the author's permission.

"Public Domain" software is software to which the author has given up *all* rights. In other words, you can use the software for whatever purpose you wish. So, you could change the software or resell it if you wished, even without the original author's permission.

"Shareware" is software that the author has made available for free *distribution*, but, the author still retains the rights to it, and, expects payment for it from anyone that uses it. Generally, this payment is expected if you use the software for more than a specified period of time and find it useful. If, when that time passes, you continue to use the software, you are expected to pay the shareware fee to the author. If you don't continue to use the software, you are expected to pass a copy on to a friend, and then delete your copy. If you wish to resell shareware, you usually need to get the author's permission.

"Commercial" software is software which is sold for profit and to which the author retains all rights. Commercial software is protected by United States and international copyright laws and may *not* be distributed or copied unless the publisher specifically allows it. (Some

publishers will allow purchasers of their commercial software to make a backup copy of the software.) In other words, commercial software is software that you *must* pay for before you can use. The software that is on the GS+ Disk is commercial software.

Q: My GS+ Magazine mailing label says "Expires: V9.N6". I just paid for another year! How could my subscription have expired already?

A: The thing to notice here is that the label says "Expires" and not "Expired." Your subscription hasn't expired, the label is just telling you when it *will* expire. The information that comes after the word "Expires" tells you the volume (in this example, nine) and the issue number (in this example, six) of your last issue of GS+ Magazine. To see how close your subscription is to expiring, check the volume and issue number printed in the upper right-hand corner of the front cover of your latest issue of GS+ Magazine. (Note that the "Expires" information is *inclusive*. So, if your label says "Expires: V9.N6," the last issue you receive will be volume nine, issue number six. Also note that there are six issues in one volume of GS+ Magazine.)

Q: What's the difference between "SCSI" and "IDE" hard disk drives?

A: SCSI and IDE are simply two different standards that are used to connect peripherals (usually hard drives) to a computer. The biggest difference between these two standards is the computers that they are most often used on. The SCSI standard is usually used on Macs and Apple IIs, while the IDE standard is usually used on IBM PCs and compatibles. SCSI and IDE devices are *not* compatible with each other, so you can't, for example, plug an IDE hard drive into your RamFAST/SCSI card.

Q: How can I use IDE hard disks on my IIGS?

A: Just as you need a SCSI controller (like the RamFAST/SCSI card) to use SCSI disks with your IIGS, you'll need an IDE controller card to use IDE drives with your IIGS. At this point, I only know of one IDE controller card that is made for the IIGS: the MicroDrive card from SHH Systeme. For more information on this card, see the "What's New?" article in *GS+* V6.N4 or contact:

SHH Systeme
Dipl. Ing. Joachim Lange
Bergstrasse 95
82131 Stockdorf, Germany
Internet: lange@tasha.muc.de

Q: I've installed EGOed lite on my system, and I like it. But, I wish it could do more! Is there an EGOed "heavy?"

A: Yes there is. The latest version of EGOed is 2.0 and it can be found in *GS+* V5.N3. EGOed v2.0 has a *lot* more features than EGOed lite, including: color text, reading (and writing) Rich Text Format (RTF) files that were created on a Mac or Windows machine, smart quotes, Undo/Redo, and a ton of other cool stuff.

Q: I recently bought a Macintosh to use with my IIGS. How can I share files between them?

A: There are two basic ways to share files between a Mac and a IIGS: by using floppy disks, and by setting up a small AppleShare network.

If the Mac you bought has System 7.5 (or later) installed on it, it should be able to read and write the ProDOS disks created by your IIGS. So, from your IIGS, you can just copy the information you want to take to the Mac onto a 3.5-inch ProDOS disk and insert that disk into the Macintosh.

If however, your Mac doesn't have System 7.5 (or later) on it, you will have to use System 6.0 or System 6.0.1 on your IIGS to create an HFS format disk that the Mac will be able to read. ("HFS" stands for "Hierarchical File System" and it's the file system that the Mac uses.) To create an HFS disk on your IIGS, use the Installer that came with the IIGS System Software to install the

HFS File System Translator on your boot disk. After that, you will be able to format disks using the HFS file system. You can then copy your files to these disks, take them to the Mac, and the Mac will be able to read the disk just as if it had been created on the Mac.

The other method of sharing files is done by hooking your IIGS and Mac together into a small network. An in-depth discussion of how to do this would take up several pages so, I'll just refer you to the article "Apple (Jive) Talkin'" in *GS+* V5.N1. This article will tell you everything you need to know about setting up this network (and it's got lots of cool pictures and definitions to help you out). Hooking up your IIGS and Mac in this way will make sharing files between the two computer as easy as copying files to and from a hard disk!

Of course, simply getting the data to and from the Mac is only half the battle. You will still need IIGS programs that can read the Mac files you are interested in and you will also need Mac programs that can read the IIGS files you are interested in. For more on this, see the article, "The Scavenger" in *GS+* V4.N5. **GS+**

GS+ Glossary

In each issue of *GS+* Magazine, we present a glossary of some of the more common terms in the IIGS world and some of the more uncommon terms that we use in each issue. If you have a term or bit of jargon that you would like to see explained, let us know and we'll try to get it in a future "Glossary" installment. Also, don't forget about the glossary that's in your IIGS owner's manual! At this point, it contains many more terms than the *GS+* Glossary! (Entries marked with an "*" have appeared in previous installments of the *GS+* Glossary and are repeated here for our beginning readers or because they have relevance to topics discussed in this issue.)

Alias*

An "alias" is a small file that "points" to another file. So, for example, if you have an alias for a folder, and you double-click on the alias file in the Finder, the Finder looks inside the alias to determine which folder it points to, and then opens that folder. The best thing about aliases is

that you can create them and then move them to another place on your hard disk (or even on a different disk). You can then use the alias as if it were the original, without having to find the original file.

ANSI*

"ANSI" stands for "American National Standards Institute." ANSI is a committee that sets standards for things. For example, in the computer field, ANSI recently established a standard version of the C computer language.

MIDI*

"MIDI" stands for "Musical Instrument Digital Interface." MIDI is a series of standards covering physical connectors, electrical specifications, data formats, communication protocols, and conventions for assigning sounds to instruments and transmitting those sounds from one MIDI instrument to another.

Partitioning*

Partitioning is the act of splitting one

physical hard disk into several smaller logical disks, that your IIGS will see as separate disk drives. Partitioning is required if you want to use ProDOS on a hard disk larger than 32MB (the maximum disk size that ProDOS can recognize is 32MB).

Pixel*

Pixel is short for "Picture Element." A pixel is the smallest dot that the computer can display on its screen.

Phosphor*

The display on your IIGS screen is made up of tiny picture elements or pixels (see below). Each of these pixels is, in turn, made up of phosphors. In fact there are three phosphors in each pixel: a Red phosphor, a Green phosphor and a Blue phosphor. (Hence the term, "RGB monitor.") When these phosphors are "turned on," they glow in their respective colors. Since these phosphors are so close together, their colors blend together to form a single, colored pixel on the screen.

Launch Alias

By Josef W. Wankerl

Alias files created by EasyMount and DocAlias can be a great help in keeping your hard drives organized. However, sometimes you may want to start your system without those extensions installed. Without these extensions installed, your alias files are useless. Double-clicking on them in an extension-less Finder simply brings up the dreaded "an application can't be found for this document" dialog. To combat this situation, I wrote Launch Alias. Launch Alias is an application which knows how to resolve alias files even if the EasyMount and DocAlias system extensions are not installed!

Installation

The installation of Launch Alias is a two step process. First, you use the Installer program on your GS+ Disk to copy the Launch Alias program to your hard drive. (You can install it in any folder and on any disk you want to.) Once Launch Alias has been installed, you *must* launch it from the Finder before you can use it!

The reason for this is that when you run Launch Alias from the Finder for the first time, it tells the Finder that it can handle both EasyMount and DocAlias documents. Normally, of course, if you opened an EasyMount or a DocAlias document, either EasyMount or DocAlias would handle it. But, if no extensions are installed (which is what happens when you shift-boot), those programs won't be around to handle those files. By running

Launch Alias that first time, you make sure that the Finder will send those files to Launch Alias if EasyMount or DocAlias isn't around. Launch Alias is not a desktop application, it's just a "hand-off" program, so it has no user interface. So, after running Launch Alias that first time, you'll just return to the Finder. You can tell that Launch Alias has been installed properly when you return to the Finder by looking at any aliases you have created with DocAlias. If Launch Alias was properly installed, these files will have a custom icon instead of the normal "dog-eared document" icon.

Trying Things Out

To see how Launch Alias works, you should first make a couple of alias files using EasyMount and DocAlias. (This is a good place to point out that Launch Alias only knows how to use EasyMount documents that point to *applications*. Launch Alias will just ignore any EasyMount document that points to a folder, a hard drive, or a file server.) Now restart your computer and hold the shift key down so that no system extensions are loaded. When you enter the Finder, just double-click on one of the alias files you've created.

If you double-click on an EasyMount document which points to an application, Launch Alias will look for the application and, if it finds it, the application will be launched. If the application can't be

found, Launch Alias will simply return to the Finder.

If you double-click on a DocAlias document, Launch Alias will attempt to find and launch an application which can open the document. Launch Alias does this by searching the invisible Desktop files and any active old-style Finder icon files that are on your currently online volumes. It does this just like the Finder does, searching the Desktop files first and then searching the Finder icon files. (Launch Alias will skip any Finder icon files which you have inactivated using the Finder's Icon Info menu item and checking the Inactive check box.)

If Launch Alias can find an application for the document, it will launch the application and tell it to open the document. If the application can't be found, Launch Alias will just return you to the Finder.

Simple, eh?

That's everything you need to know to use Launch Alias. (If you want to see how Launch Alias actually searches the desktop databases and the Finder icon files, check out the source code! It's in the self-extracting archive on your GS+ Disk.) I hope that Launch Alias will make those times you have to shift-boot a bit less trying! As always, let me know if you have any questions about or problems with Launch Alias. **GS+**

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GS+ Magazine is published bimonthly and sold for \$5.00 an issue for the magazine only, and \$8.00 an issue for the magazine + disk. But, if you sign up for a 1-year subscription (six issues) or a 1/2-year subscription (three issues), you can save up to 25%! To sign up, send this completed form (or a copy) along with a check or money order (payable to "EGO Systems"), or your credit card number, to:

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What's New?

Compiled by Steven W. Disbrow

Notice to RAMFast Owners

Normally, I edit the press releases that we get. In this case however, doing so would probably mess up something important. So . . .

"If you have a Revision D RamFAST, serial number approximately 3700 to 4700, manufactured by C.V. Technologies, you will want to remove your board from your computer and verify the part numbers U15 and U17.

The part numbers will be either 18CV815 or 18CV825. If the part numbers are 18CV825, you need to have the parts replaced.

The "15" and "25" at the end of those part numbers represent the speed of the parts in billionths of a second ("nanoseconds," or "ns"). The 18CV815 part is thus faster than the 18CV825 part.

If you are having reliability problems with your RamFAST and the serial number is approximately in the range above, you will want to check it for this problem.

A reason to have the parts replaced, even if you're not having problems at the moment, is that the parts get marginally slower with age—and the 18CV825 parts were barely fast enough when they were new. As they age, the parts start failing.

Another reason is that when C.V. Technologies discovered this problem, they found and corrected another minor problem. This bug, which exists in RamFAST cards that have the 18CV825 parts, will cause compatibility problems with the Second Sight card, and should be fixed.

The "fix" requires that these two parts be replaced by experienced technicians. Sequential Systems currently charges \$35 for the upgrade.

Call 800-999-1717 (303-666-4549 if you can't dial 800 numbers) to get a Return Merchandise Authorization (RMA) code. The turn-around time will be approximately three days."

On the Move!

Four Apple IIGS-supporting individuals and/or companies have recently announced that they are "on the move."

First up is Peter Watson, creator of those amazingly handy MS-DOS Utilities (see review in *GS+* V5.N5). Peter hasn't

actually moved, but he does have a new e-mail address. Here's every which way to contact him:

Peter Watson
P.O. Box 493
Doncaster VIC 3108
Australia
Internet: paw@asclink.net.au

Next is Pegasoft of Canada. The physical address of Pegasoft hasn't changed, but they do have a new preferred e-mail address. Here's everything you need to know to contact them now:

Pegasoft Software
R.R.#1 Honsberger Ave.,
Jordan Station, ON
Canada, L0R 1S0
Phone: 905-562-4267
Internet: tiamet!ken@wizbang.coutts.on.ca

Next we have Animasia. Their situation is exactly the opposite—their physical address has changed, but their e-mail address (and phone number) has remained the same as before. If you need to contact Animasia, here's what you need to know to do it:

Animasia
12175 Science Drive #3
Orlando, FL 32826
Phone: 407-380-9932
Internet: Animasia@genie.com

Finally, we come to the ByteWorks. They haven't actually moved, but they do have a new presence on the World Wide Web that I thought you might like to know about. Here's their new URL (Uniform Resource Locator) on the Web: "<http://www.hypermall.com/byteworks/>".

Better Business With Webs?

Speaking of the World Wide Web, did you know that you can now contact the Better Business Bureau through the World Wide Web? Well, you can! Of course, this has little to do with the IIGS market (unless you are having trouble getting something that you've ordered from a IIGS mail-order company), but I've always wanted to say something like, "You can now contact the BBB on the WWW." Here's the URL for the BBB: "<http://www.cbbb.org/cbbb/>".

What's New With SSII?

The newsletter, *Shareware Solutions II*, has recently announced several new subscription options. Let's take a look at them, shall we?

1) A One Year, 6 Issue Subscription: This subscription starts with the current issue of *Shareware Solutions II*. The cost is \$25 for U.S. or Canadian delivery; \$40 for delivery anywhere else in the world. Please note that all issues are mailed by First Class or Air Mail.

2) The First 12 Issues (2+ years worth of newsletters): Previously named "The Complete Shareware Solutions II Collection," this subscription begins with the Premiere July, 1993 issue and runs through Volume 2, Issue 6 (due to appear in late-1995). Included in this collection are all of the back issues published to date. This 12 issue subscription is available for only \$35 to subscribers in the U.S. or Canada, and \$50 for International subscribers. Please note that all issues are mailed by First Class or Air Mail.

3) The First 18 Issues (3+ years worth of newsletters): This subscription includes the first 18 issues of *Shareware Solutions II* (the first 3+ years!), includes all the back issues published to date, and will run through Volume 3, Issue 6 (due to appear in late-1996 or early-1997). This 18 issue subscription is available at the discounted rate of only \$55 to subscribers in the U.S. or Canada, and \$75 for International subscribers. Please note that all issues are mailed by First Class or Air Mail.

If you need more information on *Shareware Solutions II*, you can send e-mail to joko@crl.com or you can write to the address below. If you want to subscribe, make your check or money order out to "Joe Kohn", (U.S. funds only. Sorry, but no charge cards, purchase orders or COD orders will be accepted.) and send your subscription order to:

Joe Kohn
Shareware Solutions II
166 Alpine Street
San Rafael, CA 94901-1008

My Dad Calls Her "Patches"

We've got this cat, Sassy, that my dad always calls "Patches." (Dad's kind of old, so we humor him.) Anyway, the only thing that this has to do with this item is that Seven Hills Software has released a *patch* program for Spectrum v2.0 that fixes a problem that can occur when attempting ZModem downloads. Basically, what happens is that the transfer generates a lot of CRC/Checksum

errors and eventually the transfer simply aborts. This is due to an error in some host programs (i.e. it's not really a Spectrum error), that you might encounter as you telecommunicate with your IIGS. Now, usually, at this point I would tell you what the file number on GENie is for the patch program. This time however, I don't have to do that, because Seven Hills Software has graciously agreed to let us put the patch program on the GS+ Disk! The program is called **Patch.ZReceive** and it's in the **Programs** folder, along with a text file (**Spec.Patch.Docs**) that describes how to use the patch program. (Note that this patch *only* works with Spectrum v2.0! Don't try to use it on any other version of Spectrum!)

More FAX

If you own FAXination from Vitesse (see review in GS+ V6.N4), you'll be interested to know that v1.6 of the FAXination software is now available on the Vitesse BBS. This latest version incorporates several cool changes including:

- A bug in the FAXination printer driver which sometimes caused one or more pages of certain documents to be improperly scaled has been found and fixed.
- You can now set a prefix and suffix which are appended to the phone number each time you dial.
- A new "Line Noise Compensation" feature forces FAX transmission speed to slow down. This is useful in cases where the FAX appears to connect properly, but the received document is completely or partially garbled.
- Error messages have been modified. If the modem experiences "No Dial Tone," "Busy," "No Carrier," or similar conditions unexpectedly, the error message you see will reflect this fact. If the error is an unexpected condition related to the FAX protocols, a generic error is generated indicating a "FAX Protocol Error."

To get your update to v1.6 of the FAXination software, call the Vitesse BBS at 714-776-4254 and follow the instructions that came in your FAXination package.

You Won't Believe This One!

But, it's true! Vitesse has recently announced a *fantastic* buy on a CD-ROM drive that you can use with your IIGS. Actually, it's *two* CD-ROM drives that you can use with your IIGS. Here's the deal:

Vitesse is selling a hard drive enclosure, with space for four 5.25-inch half height devices, that just happens to already have *two* single-speed CD-ROM drives inside it! For those of you that don't speak "techie" that means that when you buy this thing, you get *two* CD-ROM drives in an enclosure that has space left over for *two more* devices! And, it also includes a power-supply, so all you have to do is plug it into your RamFAST/SCSI card and go! (These drives apparently aren't compatible with the Apple High-Speed SCSI card.)

OK. So far, this product hasn't exactly been "unbelievable," a little odd maybe, but what's the unbelievable part? Well, would you believe that this thing only costs \$79? I am not making that up! You get two CD-ROM drives, an enclosure and a power-supply for just \$79! What's the catch? There's a couple, but they aren't too bad:

- 1) These drives are "pre-owned," which, of course, means "used." But, Vitesse tests every unit before it's sold, and each unit comes with a 90-day warranty.
- 2) The drives are only single-speed. (But, this isn't that big a deal for IIGS owners since there aren't any IIGS games on CD-ROM that would require a faster drive.)
- 3) These drives are the type that require a CD-ROM to be put in a "caddie" before you can put it in the drive, and a caddie is not included. A single caddie will cost you about \$10 extra.
- 4) No SCSI cable, or SCSI terminators are included. This will also cost you a bit extra.
- 5) Shipping is \$15 extra, but that's still just \$94 for two CD-ROM drives!

So, if you've been thinking about getting a CD-ROM drive for your IIGS, this might be a real good reason to go ahead and take the plunge! For more information, contact:

Vitesse, Inc.
P. O. Box 929
La Puente, CA 91747-0929
818-813-1270

Go Faster, Go Cheaper

GENie has just announced that as of August 1st, 1995, there will no longer be a surcharge when connecting to GENie at 9,600 baud! In addition, the surcharge for GENie's Canadian subscribers will be dropping to \$5 (Canadian) per hour. Finally, GENie subscribers will be able to

use SprintNet to access GENie at 14,400 baud. (However there was no word on if there will be a surcharge for 14,400 baud access.) Hmmm, now if GENie can just get that Apple IIGS front-end finished, GENie might become what America Online *should* have been! If you already subscribe to GENie, send e-mail to "GENIE.MGMT" for more information. If you don't yet subscribe to GENie, you can get more information by calling 800-638-8369 (in Canada, call 800-387-8330).

What's Your (File) Type?

In other GENie-oriented news, the Apple II Programmers RoundTable on GENie ("A2Pro" for short) recently announced that it is now the official keeper and assigner of Apple II file type and auxiliary type designations. So, if you are an Apple II programmer and you need a new file type or auxiliary type for your new program, you now get that new type assigned through A2Pro and *not* through Apple Computer, Inc. While this might sound (at first) like another case of Apple "downsizing" its Apple II support, this is actually very good news. For the last few months, it's literally been *impossible* to get a file type or an auxiliary type assigned for new products. With A2Pro taking over this particular task, things should begin to get much better for Apple II developers.

A2Pro also announced that it would begin publishing updates to the file type database on a quarterly basis. Considering that the last "official" listing of assigned file types was published back in 1992, this is very good news indeed!

So, if you need a file type for your new program, write to A2Pro to get a file type assignment application. You can request one via e-mail by writing to "A2Pro@genie.com" or you can send a self-addressed envelope to:

A2Pro Technical Support
P.O. Box 4641
Redondo Beach, CA 90278-8841

Got a new product or service for the IIGS? We want to help you tell the world about it! Send your press release to us by one of the following means, and we'll try to get it in the next issue of GS+ Magazine!

Internet: Diz@genie.com
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Chattanooga, TN 37415-0366

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Readers can place an ad in the GS+ Classifieds for only \$5. This price buys you 25 words in one issue of GS+ Magazine. Additional words are just 25 cents each. The GS+ Classifieds are a great way to contact *thousands* of other IIGS owners.

The deadline for inclusion of a classified ad in the next issue (Volume 7, Number 1) of GS+ Magazine is July 24, 1995. Simply send your ad along with your name, address, phone number, number of issues to run, and payment (made payable to "EGO Systems") to GS+ Classifieds, P. O. Box 15366, Chattanooga, TN 37415-0366; or call us at (615) 332-2087, Monday through Friday between 9 a.m. and 5 p.m. Eastern Time, to place an ad with your MasterCard or VISA. You can also FAX us your classified ad by calling (615) 332-2634.

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Contact: Pegasoft Software
Box 276
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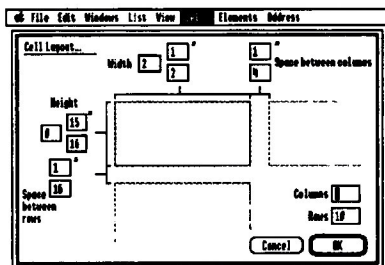
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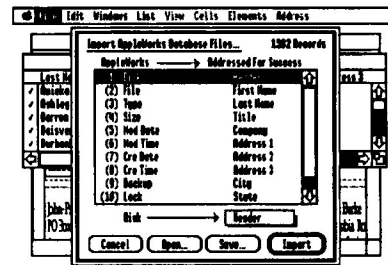
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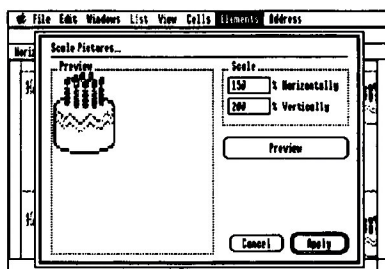
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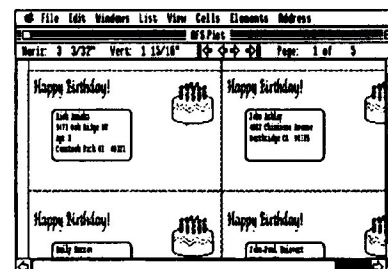
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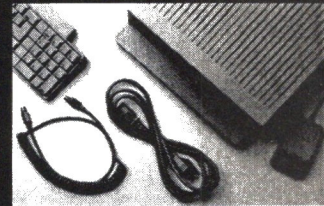


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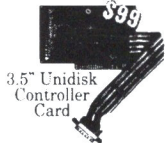
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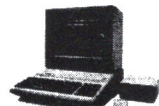
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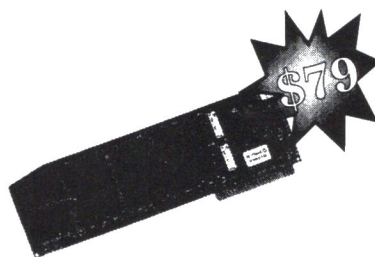


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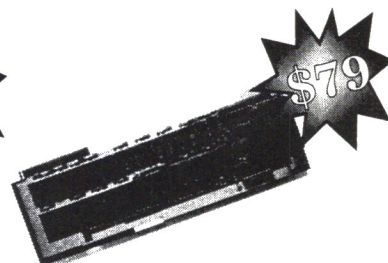


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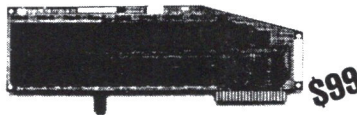
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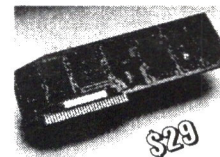
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