

# Annabooks News

Summer 1989

Vol.2 No.2

Annabooks, Suite 250-262, 12145 Alta Carmel Court, San Diego, CA 92128 (Phone 619+271-9526)

## Bios Source Code

*Our* BiosKits are publications which include the full Source Code (written mostly in C) for Bios' for XT, AT and Wildcard systems. If you are building embedded or desktop systems which have special requirements, the BiosKits provide you with complete control over your product. By having Source Code for your Bios, you can modify to your heart's content. You don't have to settle for accepting cryptic object code only, or trying to communicate your requirements to some faraway organization. Your in-house software developers can tailor the Bios to your individual needs on the spot.

*Our* typical BiosKit includes a 200-400 page book and a diskette with the source code files. A compiled Bios Image is included so you can program a Prom for immediate use of the standard version Bios. The supporting utilities are also included, so you can re-compile your modified Bios by running the included make file.

*Our* XT-AT Handbook is a 70+ page pocket size reference of handy information about PC-Compatible computers and is a required companion of thousands of programmers.

*Annabooks* is now in its second year, and thousands of readers have made us first in Bios Source Code Books. If your need to control your own Bios, or if you want to just see how it's done, an Annabooks BiosKit is for you.

*BiosKits* are designed to use the popular Microsoft C and MASM tools (Version 5.1).

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## PromKit Arrives in Style

*It* took a lot of work and time to make PromKit simple. This newest book (\$179.00) includes the complete source code of the programs needed to build disk-emulators-in-prom. Most users will load the "min" configuration and use it as-is. Just place the floppy diskette you wish to emulate into the drive, then run a simple one-line batch file. PromKit builds the set of prom-programming image files for you to load into your prom programmer. Burn a set of proms, place them into a suitable motherboard or adapter board, and power-up a diskless system. Use your favorite version of DOS or your own DOS-less application program.

*For* those who want to see every line of code, the "max" configuration will load the complete source for the Install, Driver, Build, and Utility programs used in PromKit. You can re-build it with your own mods using MS C and MASM Version 5.1. The standard PromKit Driver Module supports both regular and paged Prom chips, as well as SRAM chips. The Driver Objex can be loaded in the rom-scan area, and the data at another area. A full 360K disk drive can be emulated with 3 x 27011 chips for the data-file, and 1 x 27128 chips for the Driver Module. This uses only 64K of high memory space. If you are using an Annabooks BiosKit, you can put the Driver Objex in the Bios Prom and use only 48k of data window.

*To* help selecting or designing Prom-adapter boards we have included 3 adapter designs in the book, as well as a list of vendors and manufacturers of Prom/RAM boards you can use to get up and running right away. If your hardware is designed in-house, the schematics we include should answer your questions on how to integrate the Prom Sites into your design.

*The* PromKit Install Module used to load the Emulation Driver is a generic

rom-scan loader. On a boot-up, when the Bios scans high Rom area, the Installer's 55AA signature is detected, and the Bios executes a far-call to it. The Installer locates the Driver Objex, moves it to high RAM, initializes it, and links it in. The Installer returns control to the Bios which then completes the Boot-up sequence. The Driver intercepts the Floppy Disk function calls for the emulated drive and performs the appropriate operation. Drives emulated with Prom are read-only of course, but Read/Write drives can also be emulated with Static RAM chips.

*Multiple* drives can be emulated so you may wish to have a read-only Drive A: for booting up the Application program and then have a read/write non-volatile Drive B: for a data-logging device. The application program can use the B: drive as if it were a true floppy drive, storing transient files for later retrieval.

*A* useful possibility might be a read-only Drive A: to insure the system comes up and runs the application program, along with a physical Drive B: - You could log the data on a 3.5" floppy which could be removed for later data analysis. In fact this is just what happens in the new Boeing 747-400. Detailed in-flight information is

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recorded in DOS compatible format, then analyzed by PC-Compatible Ground Station Equipment, to report aircraft condition, operation, and maintenance requirements.

**Application** development on your part is easy because you can outfit your target machine with a physical disk drive, do all your debugging and testing, then transfer the disk contents to Prom without having to re-assemble or re-compile or change any of the files on the diskette.

**Since** PromKit uses the information from the boot sector of the diskette being emulated, if you provide enough Prom memory, you can emulate any of the standard diskette configurations, 160, 180, 320, 360, 720, 1.2 and 1.44 sizes. The most popular configuration will likely be the 360K size, but it's nice to know that if your program requirements increase, and you reserve enough Prom space, expansion is designed-in.

## Boards for PromKit

**In** the process of writing PromKit, we tracked down the sources for a variety of Prom/RAM adapter boards for XT, AT and Wildcard machines. Here's the inside story on some of them.

**The** handy general-purpose 4-socket board being sold by I-Bus (619+569-0646) and AEDEX (714+632-7000) was designed by the author a few years ago to hold 2764 - 27512 Proms and 6264 and 62256 SRAMS. Dallas 1235 non-volatile SRAMS can be used if desired. The board will address the Cxxx-Dxxx or Exxx-Fxxx segments, but an EPLD change is needed to address Dxxx-Exxx.

**The** Sealevel Systems (803+855-1582) board has 8 sockets which can be addressed in two independent groups of four, and supports 27513 and 27011 paged proms. This was the board we used to check-out the paged mode driver for PromKit. Sealevel can supply a Development Kit including board, programmer, eraser, etc. Once we figured out the jumper settings for this board, it did a fine job.

**ICS** (619+279-0084) sells a wide variety of industrial boards and systems. You should request their catalog to get an idea of the variety of their products. We have worked with ICS before (you may notice they offer a special version of our XT-AT Handbook).

**Complement Systems** (716+473-5740) has been very active in supporting the Wildcard Bus and offers a variety of adapter boards. If you are a Wildcard user, you need their catalog.

**VeriTek** (619+744-2313) markets its own product line of PC adapters, and builds network boards, laser memory cards, etc. for other OEMS'. Their Prom/RAM boards reflect our suggestions for use with PromKit.

**Most** of these boards are very useful for Bios development also, as you can load your test-Bios into RAM and check it out, without waiting for Proms to program.

**If** you have found other adapters which work well with PromKit, we'd like to mention them too, so let us know!

## Objex

**When** we started PromKit, it seemed an easy task. In the words of Robert Burns though, "the best laid plans of mice and men aft gang aglay", our plans went astray to a point. The structure of and the support functions for PromKit kept converging with the structures and functions for the upcoming Objex Series. As the work on PromKit progressed, the Objex Library kept developing. These files were kept in their own directory and became the companion book "The Objex Core Library" that is included in the PromKit Book. When you inspect the Book, you'll notice that the PromKit Application by itself is not too lengthy. Following the PromKit Files, you will see a second book in the same binder covering the Objex Core Library. Now that the Objex Library is finally here, the future Applications Books will expand the family.

**PromKit** is the first of an exciting new series of books based on the Objex Standard Development Library. Objex includes the expandable structure definitions which assure compatibility between Applications. The Objex Core Library supplies the low-level functions used in Applications programs and is easily expandable.

**The** Objex Source Files are the ones we will be using for the MiniDos and the RealTimeKit, as well as the next generation Bios', etc. The Objex architecture eliminates re-inventing the wheel and provides inherent compatibility for all the future Kit Books.

## BiosKits at Egghead

**BiosKits** are now available through Egghead Discount Software. If you operate a corporate account through Egghead, this may be your company's preferred acquisition method. We have to admit we're partial to Egghead. We frequently stop in to pick up the latest software packages, since we have found their discounts, selection, and service are really competitive. We're happy to be part of their product list.

**Annabooks** are showing up at more and more bookstores as demand grows. Check your local bookstore.

## Distributors

**Wildcard** users should contact their local Intel Sales Office or Intel Distributor for full-service Wildcard support, including the special edition Wildcard BiosKit. Check with Arrow, Hamilton, Pioneer, or ITT for European customers. Your distributor can also provide programmed BiosKit Proms, either generic, or copies of your own customized version.

**Working** closely with Intel and its distributors, Annabooks has made it easy for you to concentrate on developing and manufacturing your product.

If you are in a hurry to fire up your Wildcard, ask your Wildcard Product Specialist for a sample Wildcard Demo Bios Prom, or call up our Bulletin Board at 619+749-2741 and download the binary image for the Wildcard Demo Bios.

**ROM-DOS/C\_thru\_ROM**

We have heard enthusiastic and positive feedback from our readers who are using the Datalight C\_thru\_ROM and ROM-DOS products. C\_thru\_ROM is a development tool to produce Rommable C Programs and ROM-DOS is a DOS replacement for embedded systems. Although we haven't used the products in-house, in conversations with the Datalight crew and in looking over the documentation with their products, we are favorably impressed. Since a lot of our readers are involved in the areas which C\_thru\_ROM and ROM-DOS address, we are stocking Datalight products for immediate shipment. Datalight, in turn, will be stocking Annabooks publications. Whether you order through Datalight or through Annabooks, you can simplify finding your personal solution to your particular embedded system design.

Annabooks and Datalight are both addressing some of the same embedded system issues. Our approaches are somewhat different, giving you some choices.

**DR-DOS**

We appreciate the referrals from the folks at Digital Research. Their DR-DOS is another DOS alternative worth investigating for embedded systems.

**General Information**

**Language Tools**

Our Software Source Code is developed using Microsoft C and MASM Versions 5.1 unless specified otherwise. Call us if you have

questions on tools needed for using our publications.

**License Fees**

Some of our publications include source code whose use in a commercial product requires payment of a royalty fee. The publication price usually includes a royalty waiver for a specified number of units (typically 10). Other publications require no royalty fees for use of the source code. If you have questions about the fees, please give us a call.

**Price List**

AT BiosKit . . . . .	\$199.00
XT BiosKit . . . . .	\$99.00
Wildcard Supplement . . .	\$49.00
SysKit . . . . .	\$99.00
1M DRAM SuperSpec . . .	\$79.00
XT-AT Handbooks . . . . .	\$9.95
	(\$5 ea. for 5 or more)
PromKit . . . . .	\$179.00
Wildcard BiosKit . . . . .	\$99.00

DataLight C_thru_ROM . .	\$495.00
DataLight ROM-DOS . . .	\$495.00

**How to Order**

**Ordering and Shipping Information**

We try to ship same-day, especially if you call us before Noon, Pacific Time. Unless you request otherwise, we ship UPS Ground, except for single copies of the Handbooks, which we send 1st Class Mail. UPS takes from 3-5 days for the contiguous US. UPS 2nd day delivery is normally only a small surcharge. Overnight is quite a bit more. Canadian orders are normally sent by Air Mail, but please ask about other options or preferences you may have. Alaska, Hawaii, and Puerto Rico orders are all shipped by UPS 2nd Day Air. For our Foreign customers, we try to determine the best compromise of time/cost to meet your needs - usually Air Mail Printed Matter or Air Parcel Post, depending upon the weight of the shipment.

**Shipping Charges**

Shipping charges are not included in the prices listed for the publications. They include a small handling charge + the specified UPS or other carrier charges.

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We accept Visa, MasterCard, and American Express, and ship immediately upon confirmation. We accept checks and money orders, or to save time we will ship C.O.D. We will add the UPS C.O.D. fee to the total. Company P.O.'s from rated firms will normally be granted Net-15 terms.

**Returns**

All our publications have a 30-day examination and return policy. We want you to be pleased with your purchase. We will issue a refund or credit (your choice) for any publication returned in saleable condition. Please give us a call to confirm return shipping arrangements before shipping. We really cannot accept returns without your contacting us first.

**Sales Taxes**

All orders shipped within California will have 7% Sales Tax added, unless you provide us with a valid California Resale Number. We have noticed some corporate purchasers from California have been underpaying the required California Sales Tax. They apparently are not aware of the State and Local structure of the Sales Tax Rate, and presume that the required tax rate is the same as their Local Area. The current rate for San Diego County is 7%, so any California Purchaser must pay this rate. We hope this clarifies the Tax Rate question. Please check with your local Board of Equalization Office if you need more information.

**Overseas Orders**

We are shipping more publications to customers overseas than ever. For those of you who are interested, here are some of the things we've learned:

In most countries, textbooks are duty-free. Usually, so is software. If the disk itself requires the payment of duty, we assign it a value of \$1.00.

The most economical method of shipment is usually Air Mail Printed Matter (under 4 lbs.) or Air Parcel Post (over 4 lbs.). The heaviest of our books (the AT BiosKit) weighs 4 lbs.

*Shipping* costs for 4 lbs. are about \$10 to Canada, \$20 to Europe, \$40 to the Far East, and \$50 to India.

By far the easiest way for you to order is by credit card. Send us the card number, its expiration date, and the name on the card. We can usually verify credit cards within 24 hours, and ship accordingly.

You may also wire transfer funds to our bank. We have found, however that wire transfers sometimes take two to three weeks to reach us. Our account number at San Diego Trust and Savings Bank is 480102045, and the routing number is 122200526. The bank address is 7708 Regents Rd., San Diego, CA 92122.

## Workshops

Annabooks is planning to hold a series of seminar/workshops covering the practical application of the Annabooks Kit Series Books, and related hardware design issues.. These workshops will include discussion and hands-on time, and run 1-3 days in length. Locations and dates have not been determined yet. If you are interested in attending a workshop, please give us a call to express your preferences. Your suggestions will help to shape the scheduling, locations, and curriculum of the workshops.

Topics planned include:

- \* Architecture Choices
- \* Development Strategies
- \* Bios Integration
- \* Diskless Systems
- \* DOS Alternatives
- \* Real Time Executives
- \* Hardware Design in the PC world

Remember, you need to tell us what you want in a workshop/seminar!

## Handbook

Our popular handbook is now in its Second Edition, with more and better info. If you liked the original, you might want to order some extra copies of the 2nd Edition.

## Other Books

The original XT BiosKit contains the Source Code in C and MASM to build a 32K XT Bios.

The Wildcard Supplement for the XT BiosKit includes the file mods for 4.77, 714, 9.54 Turbo speeds, and ASIC setup.

The AT BiosKit contains Source for a 64K AT Bios which includes a resident CMOS Setup program.

SysKit is a standalone rom-scan or TSR version of the SysVue monitor from the BiosKits.

Dr. Design 1-Meg x 1 DRAM SuperSpec includes specs of the popular 1 Meg chips and shows how to develop your own composite specification for design and procurement.

## What's Next

MiniDos and RealTimeKit are the next major publications on the schedule. Also look for the new Integrated Objex-based BiosPlus and Turbo-Bios editions.

A publication tentatively named "Introduction to Bios" is also in our future schedule.

## Clock/Calendars

Sometimes you need a clock calendar in an XT machine. Sometimes you don't. Sometimes a clock/calendar will be on an adapter board included in your XT-based system. Sometimes it won't. One possibility you might want to consider is one of the clock/calendar chips which is installed in the Bios Prom Socket. This is especially handy for Wildcard CPU Modules, because it doesn't require any bus adapter. We wanted to mention the chip available from Delkin Devices at 619+273-8086 for \$39 in single unit quantities. Anybody with a phone number ending in 8086 gets a double-take from us.

## Who We Are

We're the little guys on the block, but watch how we grow. Annabooks was founded on the belief that as the computer market grew, a new approach to systems software was needed.

Until Annabooks, finding the Source Code you wanted was a difficult task, at least at a reasonable price. Bios Source Code was available only to the privileged few whose operations could justify a major investment. The Annabooks Kit Series of publications has changed all that. Now even the smallest systems house can have access to and control over the Source Code for their customized system software.

We think the PC-Compatible technology will be around for a long time. As hardware becomes more inexpensive, more uses are constantly found for PC architecture. As new applications are imagined, Source Code becomes more important for those engaged in product development. The acceptance of the Annabooks publications by the thousands of readers have indicated there is more that can be done.

After we published the tradition-breaking XT BiosKit, we found great interest in a version for the AT. Higher-performance applications called for the power of the 286 AT CPU core, so the AT BiosKit was published for those users of 286 systems. Our readers also indicated there were other areas of great interest to them, which were not being adequately supported. Our new PromKit, Wildcard BiosKit, and future MiniDos and RealTimeKit are examples of this interest.

Our books are found in industry, government, universities, and libraries throughout the world. Rather than restricting your access to a highly-guarded source code, our source code is openly distributed under protection of copyright laws. Using our code in a commercial product entails paying us a per-unit license fee, but here again this fee is designated so low as to encourage voluntary compliance. Our readers

have indicated their agreement and acceptance of our position, and continue to support our publications.

You are encouraged to examine, evaluate, and compare our publications with the alternatives available to you.

To all our current readers, we wish to express our thanks again for your support, and we plan to bring you more publications to make your job a bit easier.

**Austin Code Works**

Here is a company that specializes in selling Source Code programs, and we think that's great. Since they sell a lot of our Annabooks, we want to mention them, and ask you to watch for their ads in the popular programmers magazines.

**Royalty Reminder**

If your product is in production and you are using an Annabooks Product which requires payment of per-unit license fees (see the License Agreement in the applicable publication), please remind your accounting department to forward any fees due to Annabooks on a quarterly basis.

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**Yes - Send me the following books:**

- \_\_\_ XT BiosKit(s) @ \$99.00
- \_\_\_ Wildcard Supplement(s) @ \$49.00
- \_\_\_ AT BiosKit(s) @ \$199.00
- \_\_\_ DRAM SuperSpec(s) @ \$79.00
- \_\_\_ SysKit(s) @ \$69.00
- \_\_\_ XT-AT Handbook(s) @ \$9.95 (5 or more @ \$5.00 ea.)
- New!* \_\_\_ PromKit(s) @ \$179.00
- New!* \_\_\_ Wildcard BiosKit(s) @ \$99.00
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# *PromKit & Objex*

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