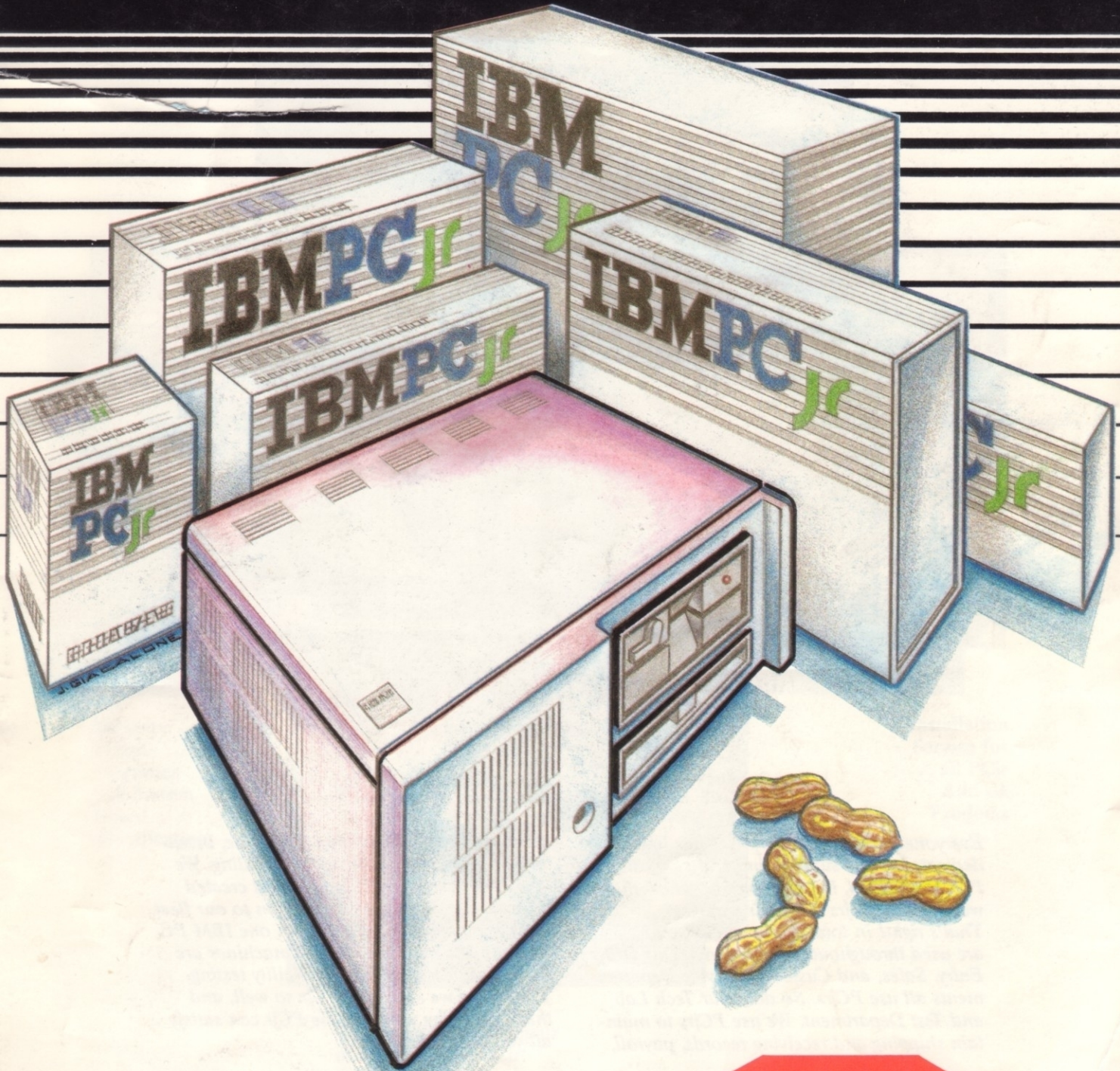


Everything You'll Ever Need For Your PCjr Plus Much, Much More!!



"Dedicated Exclusively to the Support of the IBM PCjr Since 1984"

Only PCjrs are used at PC Enterprises for all our Computer Needs. That's how we know the PCjr can Satisfy all your Needs too!



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1-800-922-PCjr

**8AM to 5:30PM Eastern Time
Monday thru Friday
Occasionally open on Saturdays**

Have a Question or Problem? Call our Customer Service Department
1-908-280-0025 Monday thru Friday, 9AM to 4:30PM Eastern Time

Everyone knows PC Enterprises has been dedicated to the support and service of the PCjr since 1984, but did you also know that we only use PCjrs at PC Enterprises? That's right! In total approximately 50 PCjrs are used throughout the company. Our Order Entry, Sales, and Customer Service Departments all use PCjrs. So does our Tech Lab and Test Department. We use PCjrs to maintain shipping and receiving records, payroll,

accounts payable, accounts receivable, inventory control, and production scheduling. We even maintain our mailing list and created this catalog on PCjrs! In addition to our fleet of PCjr computers, we also own one IBM PC and one 386 machine. These machines are rarely used except for compatibility testing. That's why we know the PCjr so well, and that's also why we know the PCjr can satisfy all your needs too!"

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FAX 1-908-280-0010 7 Days, 24 Hours**

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A Letter from P. Joseph Calabria

—Owner of PC Enterprises



Dear PCjr Owner:

Owning a PCjr is exciting! The PCjr is easy to use and expansion possibilities seem endless. Most important of all, it makes good sense to invest money in the PCjr because the PCjr is well made, reliable, and can be expanded to meet your needs. Remember, the PCjr is a genuine IBM brand computer. It is designed with quality and reliability built-in. Few PCjrs ever need repair. Time has proved the PCjr to be one of the most dependable computers money can buy.

In fact, expanding the PCjr is easier than expanding other computers. PCjr add-on boards come in their own enclosure, which is known as a sidecar. Each sidecar plugs into the right hand side of the computer, or into a SideCar Garage, which sits underneath the computer. Installation is simple, you don't even need to remove the PCjr's lid! Hard drives, CD-ROM drives, and other drive products snap on top of the PCjr, without taking any space on your desk. Enhancement products are designed to be installed in your own home, and the only tool you'll need is a screwdriver. Best of all, when you enhance your PCjr you can add what you want, when you want, without ever paying for features you don't need.

Please don't be misled by those who tell you the PCjr is becoming obsolete. This is simply not true. The only thing the PCjr really needs to run most home and small business software is additional memory, however, if you prefer cutting edge technology on your PCjr, you can have it.

Most people who enhance their PCjr do so because it makes more sense than buying another computer. They don't need all the speed and features offered by the most powerful computer money can buy. More important, they refuse to settle for second rate quality and limited expansion options offered by no-reputation bargain store clones. They wouldn't trade their Ford or Chevrolet for an import from Yugoslavia, and they're not about to purchase a computer which compromises quality and expansion to be the least expensive system made. Instead they keep their PCjr, and enhance it to meet their needs.

PC Enterprises has been working harder than ever on new product development. We've focused on compatibility, price, and performance. If you enhance your PCjr you will be able to run software designed for other computers, it will cost less than purchasing a comparable computer, and the PCjr should provide satisfactory performance. I think we've succeeded quite well.

Take a look at our PCjr Floptical system. This system combines floptical and optical technologies to store more information on a 3½ inch diskette than many PCjr critics think is possible! Our floptical system not only reads and writes 720K and 1.44MB diskettes, but also floptical diskettes that provide 21 Megabytes of storage and the performance of a hard drive! That's state of the art.

And for those who don't need diskettes that store 21 Megabytes, how about a 2.88 Megabyte floppy system? These drives use 3½ inch diskettes that are not only 2.88MB compatible, but 720K and 1.44MB compatible too! That's state of the art too!

Prefer a hard drive? Consider our PCjr Removable Cartridge Hard Drive System. It offers unlimited storage because it works with cartridges that can be interchanged as easily as floppies. Best of all, its 20 millisecond seek time specification makes this system as fast as many fixed disk systems.

But we have only skimmed the surface. There's still a long list of other exciting new PCjr products. Like our PCjr CD-ROM drive. Critics are often shocked to hear how easily CD-ROM drives can be added to the PCjr. And there's a 256-color optical scanner too!

In addition, as this catalog went to press two other new products were about to be released. Consider our Compatibility Cartridge. This cartridge upgrades the PCjr's BIOS to make your PCjr more DOS and BIOS compatible than the IBM PC-XT!

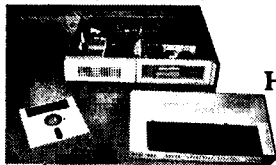
Then there's our most entertaining new product, Game-Master. Game-Master gives you better sound, graphics, and speed. Better sound because it's 100% Adlib and Sound Blaster FM sound compatible, better graphic because you get Tandy compatibility without making modifications to your PCjr system board, and better speed.

What's next? The list gets more exciting! Would you like to add a 286 or 386SX for less than \$200? How about a 486? Soon your wish may become reality.

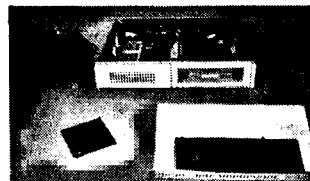
I'm proud to own a PCjr and you should be too! The PCjr was once considered a computer which could not be expanded. Thanks to you, things have totally changed. PCjr users have good reason to smile now. Look how successful the PCjr has become! Flip through the pages of this catalog and share my pride and enthusiasm of owning a PCjr. But most important of all, remember, if it were not for your continued loyal support, none of this would be possible!

What's New

1.2MB, 1.44MB, and 2.88MB Floppy Drives Page 24



High Density drives now available for your PCjr!

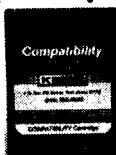


CD-ROM DrivePage 35



Over 600MB capacity with state of the art performance!

Compatibility Cartridge Page 74



Run DR DOS, DOS 5.00, and other PC compatible software!

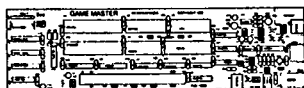
Floptical DrivePage 36



21MB on a single 3 1/2 diskette. Also 1.44MB and 720KB compatible!

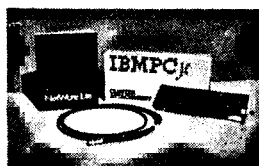


Game and Sound CardsPage 96



Improved speed, enhanced graphics and Adlib/SoundBlaster compatible FM sound

Network KitsPage 97



A Novell based network that lets you connect up to 25 computers!

Optical ScannersPage 96



256 grey scale or color. The choice is yours!

PCE jrBus-MousePage 68



Microsoft compatible but half the cost!

Removable Cartridge Hard Drive SystemsPage 34



Fast access time with unlimited capacity and transportability!

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286, 386, 486, and Still... PCjr Users Continue to Upgrade!

Good new car salespeople always tell you it's time to buy a new car. Likewise, computer salespeople tell you to buy new computers. Each year newer and faster computers are introduced yet PCjr owners continue to upgrade their PCjrs. Why do thousands of PCjr owners ignore the advice of computer salespeople and upgrade their PCjr instead? We conducted a survey to find out.

Most said they didn't need the best computer money could buy. What they needed was a computer that ran the best software they could buy. As long as their PCjr can be expanded to run today's software it meets all their needs.

This make a lot of sense. People buy computers to run software. As long as their computer runs the software that they want there is very little reason to buy another computer. One PCjr owner said, "I wouldn't buy a new car just because it can go faster than the one I already own. So why buy another computer if I

don't need one that runs faster. I use my PCjr for word processing, database, and spreadsheet applications. I run WordPerfect, dBase and Lotus 1-2-3. My PCjr does everything that I need. Perhaps if I were an architect and needed to run CAD/CAM software things might be different."

This statement sums things up very nicely. As long as PCjr owners can expand their PCjr to run the software that they want—their PCjr will do everything they need.

So what does a PCjr need to run top software? The answer depends on the type of software you run and what (if anything) you have already added. Use this page as a guide to upgrade the PCjr without paying for features you really don't need. That's the beauty of owning a PCjr. When you upgrade a PCjr you can add what you want, when you want—without paying for anything you really don't need.

Word Processing Programs	Database Programs	Spreadsheet Programs	Communication Programs
<p>Popular Word Processing Programs reported to run on a PCjr: AMI Professional Bank Street Writer Microsoft Word Office Writer PC-Write PFS: Professional Write PFS Write WordPerfect WordStar Writing Assistant</p> <p>The PCjr runs most word processing software exceptionally well. That's because when you use word processing software it's normally how fast you type that determines how fast the program runs and even a faster computer will not make you type any faster!</p>	<p>Popular Database Programs Reported to Run on a PCjr: Data Perfect Fox Base dBase Fox Pro Filing Assistant Paradox PFS: File</p> <p>The PCjr runs every database program we know of exceptionally well. Database programs use the computer's disk drive to store information. So when you use database software it's normally how fast your disk drive is that determines how fast the program runs (PCjr disk drives are just as fast as disk drives that work on the fastest 486 computer).</p>	<p>Popular Spreadsheet Programs reported to run on a PCjr: Quattro Pro Planning Assistant PFS: Plan Lotus 1-2-3 Plan Perfect Paradox Microsoft Excel</p> <p>The PCjr runs practically every spreadsheet program we know of. Spreadsheets normally store information in the computer's RAM, so when you use spreadsheet software it's how fast your RAM is that determines how fast the program runs.</p>	<p>Popular communication programs reported to run on a PCjr: Pro Comm Plus Crosstalk PC-Talk I, II, and III Smart Com</p> <p>The PCjr runs most communication software well, however it does not have DMA. This will not cause any problem when you use the popular X modem protocol, however, protocols which require DMA will not work. Few PCjr owners ever consider this a real problem.</p>
<p>Here's what you need:</p> <p>Memory: Simple word processors need 284 or 356 Kilobytes of conventional memory. Most full feature word processors require 512 or 640 Kilobytes.</p> <p>Printer: If you want to print out what you type you'll probably want your own printer.</p>	<p>Here's what you need:</p> <p>Memory: Most database programs need 284 or 356 Kilobytes of conventional memory to run, however additional memory may be required to use some features.</p> <p>Printer: If you want a print out of database information you'll probably want your own printer.</p>	<p>Here's what you need:</p> <p>Memory: You'll normally want 640 or 736 Kilobytes of conventional memory. If you use very large spreadsheets you may want to add a PCE Megaboard which adds up to 1024K of expanded memory (using a LIM 3.2 simulator).</p> <p>Printer: If you want to print out your spreadsheet you'll probably want your own printer.</p>	<p>Here's what you'll need:</p> <p>Memory: Most communication software requires 284 or 356 kilobytes of conventional memory.</p> <p>Modem: If you want to use communications software you're going to need a modem (if the modem you purchase is not Hayes compatible it will not work with most of the modem software that you can buy in a store).</p> <p>ComSwap Board: If you use an external modem we recommend installing a ComSwap Board to make the PCjr 100% hardware address compatible with other computers.</p>
<p>Other Things you might want to Add in the Future:</p> <p>Hard Drive: We always recommend a hard drive because it's a great convenience (with full feature word processors a hard drive is sometimes required). It allows using the entire program without swapping diskettes, and because hard drives are much faster than floppy drives, you'll be able to load and save everything much more quickly (Example: It takes 18 seconds to load Writing Assistant from floppy and only five seconds from a hard drive).</p> <p>101 Keyboard or Function Keypad: Many word processing programs use the function keys for a variety of features. A keyboard or keypad which has separate function keys therefore makes the program easier to use.</p> <p>Display Master and Multi-Scanning Monitor: The PCjr's display allows you to see 80 columns of text and 24 lines on the screen at any given time. Super VGA offers modes which permit the PCjr to display up to 75 lines at a time. The Display Master and a Multi-Scanning or Super VGA monitor are required to use these modes.</p>	<p>Other Things you might want to Add in the Future:</p> <p>Hard Drive: We always recommend a hard drive because it's a great convenience. In addition, when you run database software hard drives are recommended because they are faster than floppies. When using database files which are smaller than half the capacity of one floppy diskette (normally 180K) the decision as to whether to use a floppy or hard drive should be based upon whether you want the program to run faster. In order to sort or pack a database file free disk space equal to the size of the file you want to sort or pack is needed. If you are using 360K floppy diskettes, this means you will not be able to sort or pack databases which are larger than 180K (about 1500 names and addresses) unless you add a hard drive or higher capacity floppy disk drive.</p>	<p>Other Things you might want to Add in the Future:</p> <p>Hard Drive: We always recommend a hard drive because it's a great convenience. In the case of spreadsheet software a hard drive often fits into the "not really needed but sure nice to have" category.</p> <p>V20 Microprocessor: Internal improvements to this microprocessor allow it to perform numerous operations in fewer instruction cycles as compared to the PCjr's existing 8088 microprocessor. As a result the V20 takes less time to calculate and your spreadsheet runs faster.</p> <p>Speed Up Board: Speed up boards make you PCjr's RAM operate faster. As a result, your spreadsheet software runs faster.</p> <p>Display Master and Multi-Scanning Monitor: The PCjr's display allows you to see 80 columns of text and 24 lines on the screen at any given time. Super VGA offers modes which permit the PCjr to display up to 132 columns or 75 lines at a time.</p>	<p>Other Things you might want to Add in the Future:</p> <p>Hard Drive: We always recommend a hard drive because it's a great convenience. In the case of communication software, a hard drive often fits into the "not really needed but sure nice to have" category.</p>

Should I Upgrade my PCjr?

The PCjr is a genuine IBM brand computer and is therefore extremely well made and reliable. It's not as fast as the latest 386 or 486 computer, but most people don't need more speed. Dependability and expandability are much more important. A faster computer will not make you type any faster, and it can't make your floppy, hard disk drive, or CD-ROM drive spin any faster either.

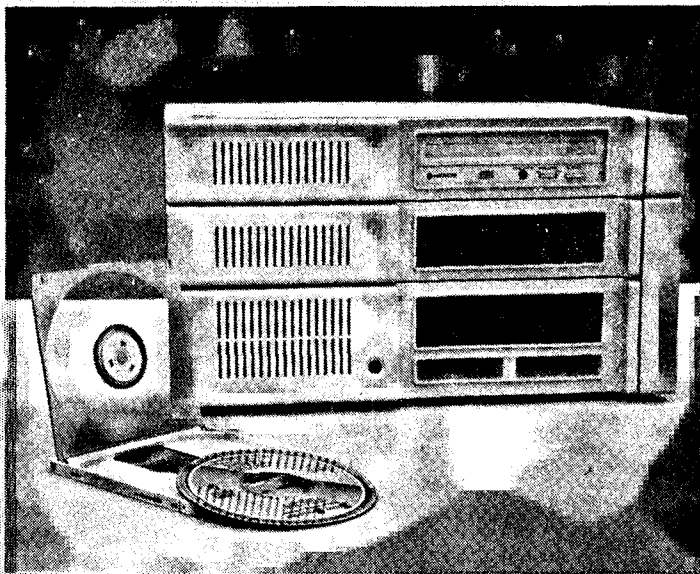
Each year thousands of PCjr users call us and ask the same questions. Should I upgrade my PCjr or should I buy another computer? If I upgrade my PCjr will I be able to run important software packages? Will it run Lotus? Will the PCjr run dBase? And will it run WordPerfect? The answer of course is yes!

The PCjr uses the very same microprocessor and Disk Operating System (DOS) as the IBM PC and PC-XT. As a result, the PCjr runs virtually all PC compatible programs — as long as the PCjr is expanded to include any hardware that the program requires. Most programs require at least 512K of memory. Consequently, additional memory is the first thing, and often the only thing, PCjr users need to add in order to run PC programs.

The second most important product you could add is a second drive. While a second drive is not often required, it offers a great convenience. Select a second floppy drive or a hard drive. Hard drives are preferred because they allow you to copy many diskettes into the computer's permanent memory,

and are much faster than floppy drives.

Unfortunately, some PCjr owners never call PC Enterprises. Instead they go to a local computer store and ask what they need to upgrade a PCjr. The computer retailer tells them they need a new computer. Is this true? Of course not! But you can't blame your hometown computer retailer. After all, they probably know very little about the PCjr and don't sell PCjr add-on



products — but often they do sell other computers!

Originally the PCjr was sold with 128K of memory, a single diskette drive, a chicklet keyboard, and could not be expanded. As a result, the unexpanded PCjr could not run most PC programs.

Today things have changed. The PCjr can be expanded to include just about any product available for other computers. Unfortunately, most PCjr critics simply haven't kept up with the PCjr. In fact, most are surprised to hear an ex-

panded PCjr actually runs more software than other IBM computers — but it's true! The PCjr is the only IBM computer that runs programs which require a Tandy Graphics Adapter (TGA).

Seven years ago PC Enterprises pledged we would continue developing new PCjr products and would continue supporting the IBM PCjr for as long as the need existed. Today, as in the beginning, PC Enterprises continues to develop products that permit PCjr users to keep pace with IBM's newest computers.

As long as the PCjr can be expanded to include the latest hardware, and as long as the PCjr can run the latest software, PCjr owners have very little reason to buy another computer. When you expand your PCjr you can add what you want, when you want, without paying for features you really don't need. Each year thousands of PCjr owners take their PCjr out of their closet and upgrade their PCjr for the very first time. Once upgraded, PCjr owners are very happy with their PCjr, and almost always continue to expand.

I wouldn't trade my Ford Bronco for an import from Yugoslavia even if the cost to buy a new car might appear inviting. Likewise, I wouldn't trade my PCjr for a faster computer which is designed to be the least expensive computer that could be made. I know the difference and so do you! Browse through our catalog and see all the products available for the PCjr. I think you'll agree. Upgrading the PCjr is the right choice!

Shown in photo: PCjr with CD-ROM Drive, and 340MB Hard Drive.

PCjr Users Speak Up

A Campaign to Bring Back 16-color 3-Voice Support for the IBM PCjr

By P. Joseph Calabria

When software manufacturers ask me the type of computer I'm using I always tell them it's an 8088 machine with 1.8 Meg of RAM, 160 Megabytes of hard disk storage, VGA graphics, 3-voice sound, and that it runs at 9.54MHz. I'm always treated with respect and they always do their best to support me. But the moment I mention that it's a PCjr, some software publishers shy away from me as though I have the plague. This is beginning to irritate me. In fact, I'm just about fed up! If you tell a software manufacturer you're using a Tandy 1000 or an XT clone it's a totally different story. But mention it's a PCjr and suddenly they act as though you're using a second class computer. Have you ever had the same experience? If so, I think it's time we PCjr users speak up. Stand by my side and software manufacturers will soon treat PCjr owners with due respect. They'll bring back 16-color 3-voice support for the IBM PCjr — and that's a promise!

During the past few years we've all heard PC-XT users rave about EGA. I remember walking into Computerland shortly after EGA was introduced. The system on display was running one of the "King's Quest" adventure games by Sierra. An eager salesman rushed to my side. Smiling, he proudly said, "I'll bet you think that's impressive! You're looking at 16-color EGA graphics. Would you be interested in upgrading to a computer that can do EGA?" I shook my head, then looked him straight in the eye. Smiling, I said, "No thanks. That's exactly the way that program looks when it runs on my PCjr. Except, what's wrong with the sound? When I run that program on my PCjr I hear music. What I hear

coming from your AT sounds more like beeping!"

It's true, I guess I was spoiled by my PCjr. Sure, it's easy to understand why XT users have raved over EGA, after all, before EGA came along the best graphics their computer could display were limited to four colors! And true, EGA is *capable* of producing better graphics than the Junior, but IBM AT users can't run higher resolution EGA modes unless they purchase an optional EGA memory expansion. As a result, to insure AT compatibility, software manufacturers design their EGA programs to use modes which are no better than those available on PCjrs.

Unfortunately, although the PCjr comes standard with 16-color capabilities, the PCjr is not EGA compatible. This means the PCjr cannot run EGA programs. As a result, most PCjr users now settle for using software that only runs in 4-color CGA modes.

But our PCjrs can run software with EGA-like 16-color graphics — and we don't need to buy anything else to do so. All we need to do is convince software manufacturers to support the PCjr's special 16-color mode! In addition, our PCjrs have 3-voice sound capability. That means it can produce pretty good music. The only way a PC or AT can produce sound is to turn its beeper on and off. And that means it can only play one note at a time.

So, one might ask, if PCjrs actually have superior capabilities, why did software companies drop 16-color 3-voice PCjr support anyway? To understand, let's go back to when IBM announced their decision to stop making PCjrs. IBM said they had reached their production quota. In lay person terms, this meant they couldn't fit any more PCjrs in their warehouse. Newspapers reported that IBM had made half a million PCjr's, and most were unsold.

As a result of IBM's announcement, most software manufacturers stopped writing programs that supported the PCjr's special 16-color 3-voice mode. After all, why should they spend the time and money to develop a program that runs on a computer that nobody owns? So they dropped PCjr support. And of course, there simply weren't enough PCjr users around to speak up and complain. After all, most PCjrs were still in IBM's warehouse!

But they didn't stay in IBM's warehouse very long. The reason the PCjr didn't sell was because the price was too high. When IBM dropped the price the PCjr sold like hotcakes. In fact, they sold so well, soon all the systems in IBM's warehouse were gone, and IBM once again started putting systems together from their massive inventory of spare parts! Sources have estimated that in total over 650,000 PCjrs were sold!

Then PCjr users got a big break. Radio Shack introduced their Tandy 1000 computer. The Tandy also boasted 16-color graphics and 3-voice sound. In fact, the Tandy 1000 is a PCjr compatible! But while the PCjr was discontinued because it didn't meet IBM expectations, Radio Shack's more conservative production schedule permitted the Tandy 1000 to become a big success. In fact, Radio Shack is still making the Tandy 1000 and almost all software companies are still designing their programs so they produce 16-color graphics and 3-voice sound when run on a Tandy.

But the bad news is, that while the two computers are very similar, the Tandy and the PCjr are not 100% compatible. One very minor difference will prevent most Tandy programs from running correctly on PCjrs.

And Let Your Voice Be Heard

The good news is that software publishers who already support the Tandy can get the Tandy version of their programs to run on PCjrs with minimal effort. That's why software companies will bring back 16-color 3-voice support for the PCjr. Because doing so can be as simple as making a one byte change that would take the software's publisher less than ten minutes to accomplish!

So I contacted several major software publishers to tell them the good news. I told them how easily they could get their 16-color 3-voice Tandy version to run on the PCjr. I hoped they would eagerly listen in order to make their software more appealing to the 650,000 PCjr users. Instead, the moment I mentioned the PCjr it was the same old story. They showed me the cold shoulder and ignored my efforts. They told me there simply aren't enough PCjrs in use to make a change worth while! Can you believe this? How much could a ten minute change possibly cost? I think this is outrageous.

It's been proven. Software companies are not going to listen to me. It's up to you to let your voice be heard. Wait for others to speak up and you'll need to settle for 4-color CGA graphics which cannot produce any sound other than those produced by the PCjr's internal beeper. Stand by my side in this campaign, and software companies will bring back 16-color 3-voice PCjr support almost immediately.

The time to act is now!
Here's what to do.
When you see a software package that lists

the Tandy and not the PCjr, write a letter to the software's publisher. Tell the publisher that you have a PCjr, making sure to tell them how much memory you have (software publishers still think PCjrs can only have 128K).

Tell them all about the things you have added to your PCjr. Then ask why their program will run on a Tandy with 16-color graphics and 3-voice sound—but not on a PCjr.

Tell them you'd like to purchase their software, but only if it runs on the PCjr in 16 colors, and with 3-voice sound (You might also volunteer to test their program on your PCjr if they send you a free copy). Then, ask them to WRITE back with an answer. If you don't receive a response in a reasonable amount of time, send a copy of your letter to the company's owner or president. Ask why you haven't received an answer. Write to as many software publishers as you can, but write to at least one today!

Each time a software publisher receives one letter, they realize that there are hundreds, and maybe thousands of others who feel the same way although they did not take the time to write. That's why each one of your letters will make a big difference.

And it's not too late. It doesn't matter that we're asking software publishers to reverse a decision that they made a long time ago. Remember Star Trek? Network television cancelled the series back in the 60's. But, even though they stopped making new Star Trek episodes, the series never died. In fact, like the PCjr, Star Trek became more popular as time went by. And finally, an organized movement to bring back Star Trek succeeded—over twenty years later!

PC Enterprises receives hundreds of phone calls each week from PCjr owners who are actively using their PCjr. Can you imagine how quickly software companies will make the "ten minute change" if these same PCjr owners would just speak up and let their voices be heard? In addition, our catalog will go out to over a quarter million PCjr users. The economy is weak and software manufacturers are searching for new markets to tap. We've been quiet for far too long. The time to speak up is now. Let the software manufacturers feel the fury of the PCjr owner. Start your own personal letter writing campaign and don't let up until each and every software product you see in your store says right on the package: PCjr 16-color 3-voice Support.

Numerous software publishers have already contacted PCE! One publisher, Dynamix, has even introduced a new install program which allows PCjr users to select Tandy graphic and sound modes when running all their products! You're doing a great job, but please don't let up now. Here's a list of software publishers you may wish to contact. If you have a problem with their software, call and tell them all about your PCjr success stories. PCjr users Speak Up and Let Your Voice be Heard!

...PJC

Access (800) 800-4880
Adobe (800) 344-8335
Broderbund (800) 521-8283
Davidson (800) 558-8141
Learning Company (800) 852-2255
MECC (800) 228-3504
MECA (800) 288-MECA or (203) 255-7582
MicroPro (800) 835-5483
MicroSoft (800) 428-8400
Borland (408) 438-5300
Box Office (612) 292-8223
DataSoft (818) 885-9000
EA (415) 571-7171
Epyx (415) 388-3200
Interplay (714) 549-2411

Intuit (415) 322-2800
Micropro (415) 499-1200
Mindcape (818) 885-1078
Origin (800) 999-4939
Paragon (412) 838-1166
Sharedata (802) 961-4022
Software Publishing Corp (408) 886-8000
Software Toolworks (415) 883 5157
Spectrum Holobyte (415) 522-1164
Spinaker (617) 494-1221
Springboard (617) 494-1220
Sublogic (217) 358-8482
Symantec (408) 262-9700
Timeworks (708) 948-9208
Walt Disney (818) 841-3328

Then write to me at the address below and let me know about your progress. I'll also keep you informed and I'll tell others about your achievements. They brought back Star Trek and they'll bring back PCjr support too!

Let Your Voice Be Heard
PC Enterprises
PO Box 292
Belmar, NJ 07719

How to Run Tandy Software on the PCjr

While all PCjrs come standard with the ability to display 16-color graphics and produce 3-voice sound you'll never utilize these capabilities unless you run programs which are designed to work with the PCjr's hardware.

While almost all programs designed to run in PCjr, EGA, or Tandy modes produce 16-color graphics, programs designed to run with CGA can never display graphics that use more than four colors.

Software publishers decide which modes their programs will support. Most always release a 4-color CGA version. In addition, their programs may also support any or all of the popular 16-color modes (PCjr, EGA, and Tandy). You can determine which modes are supported by examining the software package.

CGA modes always produce primitive looking graphics which are not very exciting. Understandably so. Asking software publishers to design detailed screen graphics which work with CGA is like giving them a sheet of paper and only three crayons — and then asking them to draw you a picture! That's why you'll notice a night and day difference when you run programs which use 16-color modes. Software publishers now have 15 colors (plus background) available to design programs. As a result, programs which run in 16-color modes can produce more detailed screen graphics which are remarkably easier to understand.

Unfortunately, though, unless software publishers choose to support the PCjr's 16-color mode, PCjr users often need to settle for CGA graphics. That's why all PCjr users should be supportive of software publishers such as Sierra On-Line, who have continued to support the PCjr's unique 16-color mode. When you buy one of their programs it runs on the PCjr with 16-color graphics and 3-voice sound, without doing anything special.

But, while few software publishers have continued to support the PCjr's unique hardware, almost all publishers do support Tandy graphics and sound — and with a little know how, PCjr users can get most Tandy programs to run on their PCjr. Tandy programs that produce EGA-like graphics with not 3, but 4-voice sound! If you'd like to know how to run these programs, just keep reading.

PC Enterprises offers a service in which we make modifications to PCjr system boards for increased Tandy compatibility. What's important to realize, however, is that while these modifications greatly increase the number of Tandy programs that run on a PCjr — the Tandy modifications are not always required. Some Tandy programs will run on a PCjr without any modifications. The only way you can tell whether a Tandy program will run on your PCjr is to try it.

Before you attempt to run any Tandy 16-color program, you must first use your existing PCjr Memory Management Software to set up a 32K video buffer. If the program you use to recognize your PCjr's memory is called JRCONFIG.NRD use the -T3 -V32 options to set up an 80 column display and a 32K video buffer (When you try to get a Tandy program to run I strongly recommend that you use the .NRD program, not .DSK, and that you do not use any other options of the JRCONFIG program).

It's also important that you do not have any other lines in your CONFIG.SYS file and that you do not have an AUTOEXEC.BAT file on your boot disk.

If you prefer to use the .DSK program, or any other JRCONFIG options, or if you wish to have other entries in your CONFIG.SYS or AUTOEXEC.BAT file that's fine, but its important that you don't do so until after you determine whether you can get the Tandy program to run on your PCjr.

The -T3 -V32 options of JRCONFIG give you the greatest degree of compatibility, but they also waste 64K of memory. If you run out of memory, you can try using the -S0 option, however, doing so will sacrifice system performance and Tandy compatibility.

If the program you use to recognize your additional memory is called PCJRMEM.COM, JRVIDMA.SYS, JRVIDMA2.SYS, JRVBUFFDD.SYS, or JRVIDEO.SYS, try using the /C option first, and if that doesn't work try the /E option instead.

After you set up your PCjr to use a 32K video buffer (don't forget to re-boot first) you are ready to run your first Tandy program. Be sure to select a program that runs on the Tandy in 16 colors. Look for programs which boast 16-color Tandy support right on the box.

The first thing to do is determine how to make the program run in Tandy mode instead of CGA mode. Some programs come with a totally separate version for Tandy. For example the program known as PAPERBOY has been sold with three separate versions all on the same disk (PAPERCGA, PAPERCGT, and PAPEREGA). In this case just type PAPERCGA to run the CGA version and PAPERCGT to run the Tandy version.

Another technique often used by software publishers is to provide an install or setup utility which must be run before running the application program. Look for a program named INSTALL or SETUP on the application program diskette and run this program. If the program asks what type of computer or graphics adapter you're using tell it Tandy 1000 or TGA.

Another technique is for the application program to display a menu when it is first run. Once again, select Tandy 1000 or TGA. Certain versions of "California Games" fit into this category. If you tell the program you're using a Tandy 1000 it runs in 16 colors—even if you have not had the Tandy modifications installed on your system board.

Other programs use a parameter on the DOS command line when you first start the program. Often the parameter is the letter T or perhaps the word Tandy or the letters TGA. For example, you may need to enter the name of the program followed by a space, then /T or /TANDY or /TGA. The proper letters to type can be found in the program's manual.

Regardless of which of the above techniques the software publisher has used, you should not have any trouble getting the Tandy version to start on your PCjr. However, there's still another technique which often causes problems for PCjr owners. Some software companies try to figure out the type of computer that you're using without asking. These programs might check the computer's "System Identification Byte", test for Tandy specific hardware, or search the computer's BIOS for the Tandy copyright notice.

While these "Auto-Sensing" programs are at times the simplest to run in 16 colors on the PCjr, they are more often the most difficult. The Dark Heart of Ukarall, for example, tries to detect the type of computer you're using, detects (in error) that it's running on a Tandy, and goes directly into the Tandy mode.

This is great if your PCjr has already had the Tandy modifications installed, however, if you don't have the Tandy Mods, the program looks like you're viewing it through venetian blinds. Other programs which attempt to automatically sense the type of computer being used correctly determine that the PCjr is not a Tandy and therefore default to 4-color CGA graphics. Yick! To get these programs to run in Tandy mode you can sometimes defeat the auto-sensing

"feature" by adding a parameter to the command line (similar to the situation described above). The difference is that with auto-sensing programs the software publisher intended to use the optional parameter for test purposes only, and therefore doesn't mention it in the manual. Experiment! Try using /T, /TGA, /Tandy, or anything else you think might work even though the manual makes no mention of any such command. If all else fails, place a call to the software publisher.

The first thing to ask when you call a software publisher is whether the program runs in 16 colors on a Tandy. This is important because many publishers list Tandy on the package even though their program only runs on a Tandy in 4-color CGA mode. So, unless the box states Tandy 16-color mode, you'll have to ask!

If a program runs on the Tandy in 16 colors but it only runs on a PCjr in four colors it means your PCjr is running the CGA version. Tell the software publisher that you're using a Tandy compatible (not a true Tandy). Ask how to force the program to run in Tandy mode. Sometimes this takes a lot of persistence.

For example, I tried to run "Where in Time is Carmen SanDiego" in the 16-color Tandy mode. I typed CARMEN TANDY to start the program and received a "Graphics Adapter Not Available" message. After making six long distance phone calls to Broderbund (the publisher) and speaking to three different people, someone at Broderbund told me to try TANDY!. So I typed CARMEN TANDY! to start the program and the exclamation point did the trick!

If you succeed in getting the Tandy version of a program to start on your PCjr, but the program doesn't run correctly, you may not see anything at all on the screen, or what you do see may or may not resemble the program. If this happens you can go back to your CONFIG.SYS file and try using different video buffer parameters (If the Memory Management program you are using is JRCONFIG).

Try using the -V32 switch with the -S0, -S32, and -S64 options. You might also try substituting -V64 or -V96 for -V32 (The -V switch allocates a larger video buffer and the -S switch moves the video buffer to different areas of low memory). If you try to run a Tandy program on your PCjr and the program comes up with every other line of graphics missing we call this the venetian blind effect. If this should happen, chances are very good that the PCE Tandy Modification would enable the program to run correctly.

Getting Tandy Sound to Work
All PCjrs have 3-voice arcade quality sound capabilities—however, you'll never hear this sound unless you have an external amplifier and speaker connected. The "IBM PCjr Color Display" has a built in amplifier and speaker, however, if you are using another monitor you must connect the "Audio Out" RCA jack of the PCjr (marked with the letter A) to your stereo system, or to another external amplifier. The only other thing you'll need to hear 3-voice sound is a program that produces PCjr compatible sound.

The Tandy computer also comes with arcade quality sound capabilities, however, while Tandy designers made sure the Tandy would be PCjr compatible, they also made improvements which give the Tandy 4-voice sound. As a result, the PCjr is not 100% compatible with Tandy sound, although it's close enough for many Tandy programs to produce 3-voice sound on the PCjr. If you run a Tandy program and find it only produces 1-voice (beeper) sound, try running the TSound utility program (found on our PCjr Utilities Diskette) before you run the Tandy program. This utility opens and initializes the sound channel—however it will not give your PCjr 4-voice sound. To hear 4-voice sound, and to allow Tandy programs to properly open the sound channel on their own, you'll need the Tandy Sound Modification which is now part of our Five System Board Modifications (featured elsewhere in this catalog).

What Every PCjr User Should Know BEFORE they Purchase a Serial Device

While the PCjr's serial port is not identical to the serial port of an IBM PC, it is very similar. As a result, most serial devices designed to work with an IBM PC will also work on a PCjr without any fuss or trouble—nevertheless, there are a few idiosyncracies of the PCjr's Serial Port which every PCjr owner should understand. These differences explain why many PCjr users report certain RS-232 devices work on their PCjr, and why others report the very same devices do not.

General Information

The PCjr comes standard with only one serial port. Peripheral devices that you purchase can be connected to this port by plugging them into the connector located on the rear of the PCjr. The connector is marked with the letter S which is the reason that the PCjr's serial port is often referred to as the PCjr's S port.

Serial ports can be used to connect a variety of devices which have serial interfaces. When hardware manufacturers say their products have a standard serial interface it means the device conforms to EIA standard RS-232C. For this reason, serial devices are also commonly referred to as RS-232 devices (C is the revision).

There are lots of serial devices which can be connected to your PCjr, however, it's important to remember that the PCjr has only one serial port. This means you can only use one serial device at a time. External modems, mice, tracker balls, printers, and plotters are all available with serial interfaces.

In addition to the PCjr's S port, the PCjr has one internal slot which permits you to connect an internal modem—without using the computer's serial port! That's why, if you haven't already purchased an external modem, we strongly recommend you select an internal modem instead. Doing so keeps your S connector available for a mouse, tracker ball, serial printer, or other RS-232 device.

If you already have an external modem connected to the PCjr's S connector you can still add a mouse or tracker ball, however, you'll need one with a bus interface (such as our Jr-Bus Mouse). If you already have an external modem and you decide to add a printer be sure the printer you purchase has a Centronics (parallel) interface. While

you'll also need to purchase a parallel printer attachment you'll be able to add your printer without introducing any compatibility problems.

Another option to consider if you're already using the PCjr's S connector and would like to install an additional serial device is to install a switching box. These boxes permit you to select one of up to four serial devices with the flip of a switch. The problem with this is that you still will not be able to use more than one device at a time.

To connect a switching box to your PCjr you'll need a PCjr Serial Cable (such as catalog #22505-3) and the switching box itself. Purchase catalog #75501 to select between two serial devices or catalog #75515 to select any of four devices.

Switching boxes use female 25-position D-type connectors (not PCjr connectors), so if any of your serial devices use PCjr connectors you'll also need an adapter (#15503) which converts the PCjr connector to one that will plug into the switching box.

Connector Differences

The PCjr's S connector is not mechanically compatible with serial ports that you'll find on other computers. Devices that plug into the PCjr's S connector must have a special 2x8 position PCjr connector. Most serial devices that you purchase have either 9 or 25 position D-type connectors.

Always try to purchase serial devices which already have PCjr connectors. If you purchase a device that uses D-type connectors you'll also need our Adapter Cable for Serial Devices (Catalog #22505-3) in order to plug the serial device into the PCjr's S connector.

Voltage Levels

All PCjr's did not come with the same power supply. Look inside your PCjr to determine which power supply you have. The most common power supply measures 7 inches long and produces voltages at three different levels, +5V, +12V, and -6V. Other PCjr's came with a power supply that is ten inches long. This power supply produces -12 volts instead of -6 volts.

If you have the 7 inch power supply you may have a problem when you connect an RS-232 device. The reason concerns

the negative power level (-6V). 100% PC Compatibles use -12V to generate RS-232 signals. To make matters worse, IBM's published specification for the -6V level permits it to vary 16% (approximately 1 volt). This means the actual negative voltage produced by your power supply may actually be as low as -5V!

If you use the ten inch power supply, or any of the PCE Junior Drive Power Supplies, you do not need to worry about this problem at all because they produce the same levels as PC compatibles.

If you have the seven inch PCjr power supply, we recommend that you purchase all your RS-232 devices from competent PCjr product suppliers who are aware of this problem and therefore sell serial devices which have been determined, by test, to work with all PCjr's—including those which only produce -5 Volts.

Maximum Baud Rate

If you operate the PCjr's serial port with an RS-232 device at baud rates higher than 4800 you may have a problem. This is because the PCjr uses a different frequency divisor to generate baud rate. If this difference presents a problem, be sure to complete and return our Win a New Product Survey. We already have a design for a low cost product that allows the PCjr to operate at speeds up to 115,000 baud.

Keyboard Interference

Keyboard operations which occur while using baud rates higher than 1200 can present a problem. If your serial device happens to be receiving information and you press, or release a key, the information sent to the computer while the PCjr is servicing its keyboard routine may be ignored. When you are using a modem this will, in most cases, cause the other computer to re-send the information. However, it has also been reported to cause certain programs to be interrupted. PCjr users who hold down keys to get the computer's attention experience this problem much more often than those who use their keyboard normally. If the communication program that you use will also work with a mouse, you can completely eliminate this problem by using the mouse instead of the keyboard.

Patches Required for Dos 2.1

Most experienced PCjr users already know that reliable operation of the PCjr with DOS 2.1 requires the DOS NMI Patches. If you use DOS 2.1 and you have not corrected these bugs, your PCjr will occasionally hang up or crash without warning. This will always happen when you press or release a key. Refer to the Keyboard Buffer Section of our catalog for more information. The DOS Patches are also provided on the PCE Utility Diskette (see Page 104).

The Enhanced Model PCjr uses an 8088 microprocessor that operates at 4.77MHz and did not come with a battery backed up time of day clock. As a result, each time you turn the PCjr on, you must enter the correct date and time, otherwise DOS can not include the correct dates and times in its directories.

System Board Upgrade and Speedup Products

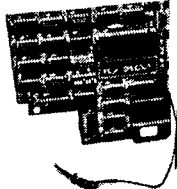
Software designed to run on computers which have a CGA card are limited to displaying 4-colors at one time. The PCjr has Enhanced CGA, which means it can display 16-colors simultaneously, however, many software companies do not design their programs to use 16-color PCjr modes (although most programs do support 16-color Tandy modes). While the PCjr's graphics and sound capabilities are very similar to those of a Tandy computer, the PCjr is not Tandy compatible.

Five System Board ModificationsPage 13



Would you like to run more PC programs than you can now, and also many 16-color, 4-voice Tandy programs? Would you also like to be able to add our Display-Master VGA Sidecar, 192K Internal Memory Card, or Disk Drive Address PROM? The PCE System Board Modifications offer an inexpensive opportunity to expand your PCjr's capabilities.

JrExcellerator Speed-up BoardPage 14



Like to speed up your PCjr? This product will increase the PCjr's clock speed to 9.54MHz, making all your programs execute more quickly. It also adds 16K of conventional memory, and lets you use your computer without memory management software. A V20 microprocessor is included.

JrROM-ClockPage 16



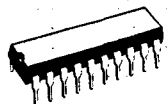
Allows your computer to keep track of the correct date and time automatically. As a result, the PCjr records the time and date each file on your diskette was last changed and you'll see this information each time you ask for a directory.

V20 MicroprocessorPage 16



Prefer a low cost speed up product which provides a modest improvement in speed? When you add the V20 Microprocessor, the computer's Norton SI Rating improves from 1.0 to 1.2!

Disk Drive Address PROMPage 13



Decided to have the PCE System Board Modifications installed on your system board? Unless you also have Racore DMA, the Disk Drive Address PROM is always recommended.

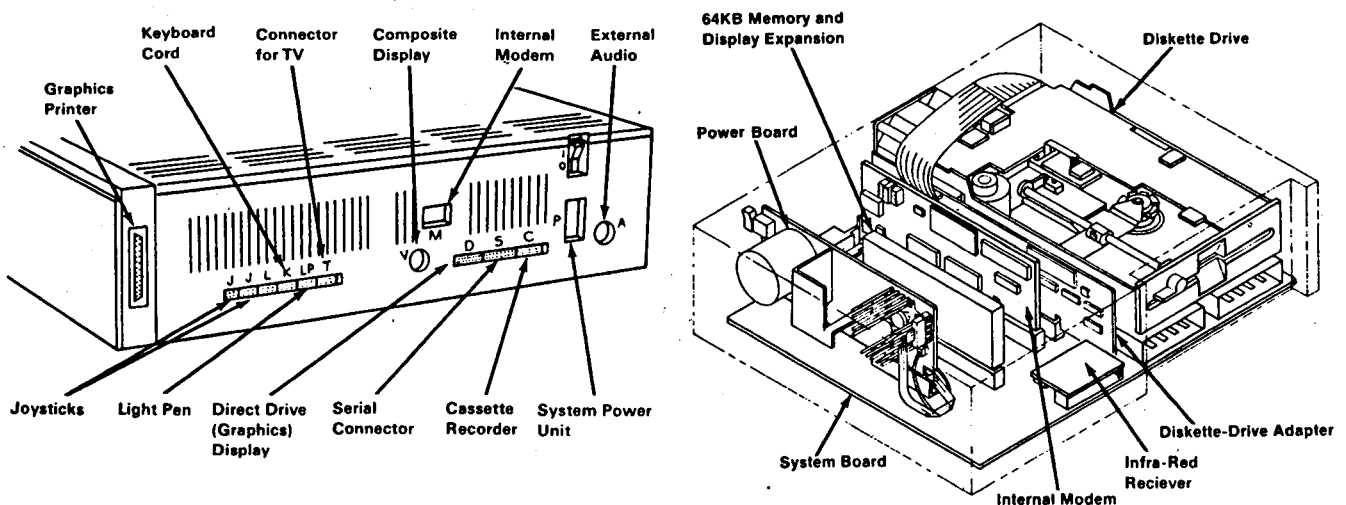
Recommendation: All PCjr users should consider the PCE Five System Board Modifications. These are inexpensive modifications that offer greater PC compatibility, Tandy compatibility, and expandability. The modifications permit you to run all PC programs which do not run now because of the PB2 problem. In addition, enhanced Tandy compatibility is also provided. Tandy compatibility means many of your existing programs will run in EGA-like 16-color modes instead of 4-color CGA modes and produce arcade like (4-voice) sound instead of (1-voice) PC beeper sound. Greater expandability means you'll be able to add our Display-Master VGA Sidecar (page 49) and our Internal Memory Card (page 21) either now, or in the future.

If you're going to disassemble your PCjr to install the System Board Modifications it makes sense to install any other system board upgrade products you might want at the same time. The products to consider are the jrExcellerator (or V20 microprocessor), the Thin Font Module, the jrROM-Clock, and the Disk Drive Address PROM.

The jrExcellerator is one of our most popular products because it makes the PCjr run at 9.54MHz and therefore speeds up practically every software package that runs on a PCjr. Select this product if you want your PCjr to do things faster.

Note: If you want your PCjr to run a program faster you should first decide whether you need a speed up board or a hard disk drive. To do this pay attention to the light on your diskette drive. If the drive light is on when you want the program to run faster purchase a hard drive or Turbo-Drive because these products speed up disk access time; otherwise (if the drive light is off), purchase a speed up board.

The Thin-Font Module and jrROM-Clock fall in the category of "nice to have". The Disk Drive Address Prom is a good idea and falls in the "it's cheap enough so why not" category. After all, any inexpensive product which will sometimes make the difference between whether your computer will or will not run a particular program is always a good product to purchase.



Five System Board Modifications for Greater Compatibility and Expandability!!

Here are five system board modifications which we strongly recommend for every PCjr owner. The modifications will also allow you to upgrade your PCjr with our new 192K Internal Memory Card and our Display-Master VGA Sidecar. In addition, we'll also install sockets (if your PCjr doesn't already have them) for our jrExcellerator, Thin-Font Module, and jrROM-Clock—allowing you to upgrade with these products now, or at a future date.

To take advantage of these modifications, you can either send us your existing system board and let us modify it, or purchase a reconditioned system board which already has the modifications installed (Refer to Page 93).

System Board Upgrade Package

While your system board is here for modification, why not let us install our add-on products which plug into the PCjr System Board? This way, when you get your PCjr System Board back it will already have all our System Board enhancement products installed. You won't need to worry about ever taking your system apart again! Purchase the System Board Upgrade Kit below and we'll install a jrExcellerator, Thin-Font Module, and jrROM-Clock without any installation charges. (If you select this package you must include a note which tells us the make of all memory expansions installed on your PCjr, so we can properly set up the jrExcellerator. We must also know if you have a Racore with DMA).
Catalog #10043 Price: \$188

1 THE TANDY MODIFICATION

Most programs which run on a PCjr use 4-color CGA graphics. Programs which run on the Tandy computer produce far better graphics because most Tandy programs run with 16 colors! This modification allows many Tandy programs to run correctly with 16-color graphics on a PCjr!

2 THE VGA MODIFICATION

Imagine being able to run your favorite software in 256 colors! This is possible when you install our new PCjr VGA sidecar. Once installed, our VGA sidecar permits the PCjr to run VGA, EGA, CGA, and MDA graphics! Unfortunately, you will not be able to install our VGA sidecar unless we first make this modification.

3 THE TANDY SOUND MODIFICATION

This modification will permit most Tandy programs to produce 4-voice arcade quality sound on your PCjr! It gives you near 100% compatibility with Tandy sound now and 100% Tandy sound compatibility when you upgrade to VGA.

4 THE PB2 MODIFICATION

This modification makes your PCjr more PC compatible. Certain PC programs run correctly on a PCjr until the program attempts to produce sound. When this happens the PCjr's display becomes garbled. The PB2 modification prevents programs which inadvertently modify bit 2 of the 8255B port from scrambling the display (Paperboy is one example).

5 THE INTERNAL MEMORY BOARD MODIFICATION

This modification permits you to replace the PCjr's 64K internal memory card with our new 192K internal memory card. This modification does not require that you purchase our 192K card, it simply permits you to add our 192K card now or later.

To have all FIVE modifications performed, send us your system board and request one of the modifications below.

Modification #97514: Permits 640K PCjrs to expand to 736K*

Modification #97515: Permits 512K PCjrs to expand to 640K*

Modification #97516: Permits 128K PCjrs to expand to 256K*

Do not send your entire PCjr. Send only the PCjr system board, system cabinet, and lid. (Remove all sidecars, disk drives, and internal plug-in cards). Include \$49.95 plus \$5 shipping and handling.

*The modification itself does not increase your PCjr's memory, it simply permits you to install our optional 192K memory card.

Disk Drive Address PROM

The PCjr's Diskette Drive Controller uses hardware addresses F0 through F7 hex. This is not the same as true PC compatibles which use addresses 3F0 through 3F7 hex.

As long as programs that you run go through BIOS this difference does not cause a problem. However, all programs do not go through BIOS. Certain programs, especially programs which use "on-disk" copy protection, attempt to directly address the computer's hardware.

When this happens on a PCjr the program uses the wrong address. The Disk Drive Address modification corrects the problem because it allows the PCjr's Diskette Drive controller to be accessed at either address.

If your system board has already received any of our original PCE System Board Modifications (97503, 97507, or 97508), your

system board may already have the Disk Drive Address PROM installed—however, we stopped performing this modification when we determined the modification was not compatible with Racore DMA.



If your system board has received any of the modifications we currently perform (97514, 97515, or 97516), or REV1 of the original modifications, the Disk Drive Address modification is optional although it is still recommended to avoid possible compatibility problems which are diskette drive related. The Disk Drive Address

Modification PROM is a 20-pin IC which plugs into a socket installed by PCE at the time that the PCE System Board Modifications are performed (PCE System Board Modification required).

Catalog #59331-1 Price: \$7.95

Super-Charge your PCjr with the jrExcellerator Speed Up Board

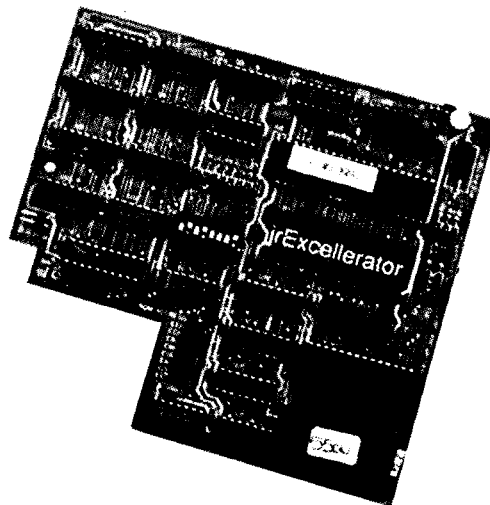
For years the PCjr has been criticized because it couldn't run programs as quickly as today's newer computers. Well, PCjr critics, it's now possible to operate a PCjr at 9.54 MHz.

Just plug our accelerator board into your PCjr's microprocessor socket and the computer's clock speed increases from 4.77 MHz to 9.54 MHz. Then run a program and notice that the PCjr does just about everything faster than before.

You'll zip right through what was previously a time consuming task. That's right. With the jrExcellerator installed your computer runs circles around other PCjrs. Whether you're using a spreadsheet. A word processor. Or just playing a game. The program executes more quickly because the PCjr's microprocessor is running at twice the speed as it did before!

And because the jrExcellerator plugs into the PCjr's microprocessor socket it's easy to install. It's also compatible with most other PCjr add-on products including those manufactured by PC Enterprises, IBM, Tecmar, Microsoft, and Racore.

We don't think you'll be one "bit" disappointed with the jrExcellerator. In fact, we're so sure you'll like it when you try it that we'll refund the full purchase price if for any reason you choose to return it. But best of all, the jrExcellerator won't take a big "byte" out of your budget.



Catalog #14802
Price: \$129

Now provided with the PCE FIXBEEP utility built into the jrExcellerator's BIOS!

"We think that the jrExcellerator is a 'must have' for PCjr owners that are looking to keep pace with today's more powerful machines"...
Sierra On-Line

Features

- Easy Plug-in Installation¹
- Makes Programs Run Noticably Faster
- Starts in the Fast or Slow Mode Automatically
- Change Speeds at any Time (On the Fly)
- Works with All Software Including Self Booting Software
- 10 MHz V20 Microprocessor Included
- Adds 16K of RAM (PC Memory Mode)²
- Permits the PCjr to Recognize Expansion Memory Without Running Memory Management Software. (PC Memory Mode)²
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to continue supporting the PCjr

¹ Plug-in installation requires your PCjr microprocessor already be in a socket. If your PCjr's Microprocessor is not in a socket we can still install the jrExcellerator. Contact our Customer Service Department for details. Installation charge is \$25. Not compatible with the jrHotshot or other products which plug into the microprocessor socket.

² Racore users with DMA can not use the PC Memory Mode feature.

jrExcellerator Performance*

The jrExcellerator is designed to speed up the memory of your computer. When you speed up your computer's memory, the computer processes information faster than it could before—permitting all your programs to run faster. That's why accelerator boards are almost always the first add-on product people select once they decide to speed up their computer. But it's important to understand while accelerator boards always make your computer execute software faster, they cannot make your peripheral devices work any faster. So, if you want your

computer to print faster, you'll still want a faster printer, and if you want your modem to work faster you'll prefer a faster modem.

PCE sells a variety of fast peripherals as well as other products designed to speed up all types of computer operations. Some of these other products are indicated below. Optimum results will always be obtained when the jrExcellerator is used together with these other products.

Norton SI

The Norton SI Index is perhaps the most well known performance benchmark used to compare a computer to an IBM PC.

An index of 1.0 is obtained on a genuine IBM PC. Higher indexes are obtained on faster computers. The PCjr with only 128K of memory only gets a .7 rating. When you expand your computer's memory to 640K the PCjr gets a 1.0 rating.

Screen Walk

The Screen Walk results provide a good indicator of jrExcellerator performance with games and other programs because this test causes intensive memory and screen writing operations to take place (without disk drive activity).

The time published is how long it takes Leisure Suit Larry to walk completely across the bar, with the program speed control set to fastest. Leisure Suit Larry is a well known game published by Sierra On-Line. Comparable results are expected with other game programs.

Landmark

The Landmark tests are also performance benchmarks which compare a computer to an IBM PC.

Test (1) compares the computer to a genuine IBM PC. A 128K PCjr only gets a .3 rating in this category, while 640K PCjrs produce a 1.0 rating (before the jrExcellerator is added).

Test (2) is the time it took the computer to perform a specific calculation. 128K PCjrs take 1,964 ms for this test. That's almost two full seconds! A PCjr with 640K will perform the same calculation in 600 milliseconds—less than one third the time.

The Norton SI and Landmark tests clearly show the speed advantage when you expand your memory beyond 128K—but now compare the results to those for a 640K PCjr with the jrExcellerator and see how much faster the jrExcellerator makes the system perform. (Results were obtained using Norton v4.50 and Landmark v0.99).

123 Calculation

A 1-2-3 Calculation is one of the best tests to use to evaluate a speed up board's true performance. This test requires intensive memory operations, while it does not require a lot of screen writing or diskette activity.

It took a PCjr with 640K of memory 22.4 seconds to recalculate a Lotus v1A spreadsheet which had 250 rows and 8 columns. The same calculation only took 11.6 seconds with the PCE memory expansion and jrExcellerator. Check the test results above to determine how much faster the PCjr performed with your memory expansion product!

Activity	640K PCjr 4.77MHz	Results with jrExcellerator (9.54MHz)				
		640K PCjr w/PCE	640K PCjr w/IBM	640K PCjr w/Racore	640K PCjr w/Microsft	640K PCjr w/Tecmar
Norton SI	1.0	3.4	3.3	3.4	2.6	2.6
Landmark (1)	1.0	1.9	1.8	1.8	1.3	1.2
Landmark (2)	600ms	328ms	332ms	337ms	476ms	517ms
123 Calculation	22.4s	11.6s	11.9s	11.9s	15.9s	16.8s
Screen Walk	16.3s	8.8s	9.8s	9.6s	12.2s	12.9s
TYPE Test	70.8s	37.4s	37.6s	37.5s	59.2s	59.8s
Screen Change	12.3s	10.5s	10.6s	10.5s	10.9s	11.0s

* The improvement in speed that you see varies depending upon whether you have expanded your PCjr's memory, and if so, the make and model of the memory expansion unit that you use. We tested the jrExcellerator with PCE memory expansion products as well as all four other PCjr memory expansion products which are widely used today. Refer to the chart below for details concerning the expansion used in determining the published results.

w/PCE w/IBM	PCE Megaboard populated with 512K. (Results with PCE 512K jrSidecar are comparable). IBM 128K Memory Expansion Sidecar upgraded by PCE to 512K. Results with 128K sidecars are comparable.
w/Racore	Racore 8-wire sideboard (without DMA) using a Racore 512K memory board. Results with DMA should be comparable.
w/Microsft w/Tecmar	128K Microsoft Booster upgraded by PCE to 512K. Tecmar 128K jrCaptain upgraded by PCE to 512K.

Note: The jrExcellerator is not compatible with memory expansion products which plug into the computer's microprocessor slot. All tests were performed on a basic PCjr with JRCONFIG.DSK -T3 -V32 as the only line in the CONFIG.SYS file and without any AUTOEXEC.BAT file. The jrExcellerator switch settings used were those settings recommended in the jrExcellerator manual for the memory expansion unit under test. Note that recommended switch settings are conservative. Slower memory expansion units may therefore perform significantly faster with more aggressive switch settings. Results vary.

TYPE Test

The TYPE test does not require intensive memory operations—instead, it requires mostly screen I/O. That's why this test is not the best to use to show off our jrExcellerator, nevertheless, we thought it would be fun to include these results for comparison with our jrVideo Cartridge. See if you could guess how much faster this test would run if you also had a jrVideo Cartridge, then refer to the section of our catalog titled, "Three Great Cartridges which

Improve the Personality of your PCjr" and see how close your guess came to the actual results.

We loaded JRCONFIG.DOC for v2.10 in a Ramdisk, then used the TYPE command to display the file.

Screen Change

Our Screen Change test requires mostly disk I/O and is included primarily for comparison with other PCE products—nevertheless, the results prove that the jrExcellerator even helps with operations which do require lots of diskette I/O. (Remember, speed up boards are designed to speed up memory, not diskette operations. You'll see substantial improvements in disk I/O if you install a Megaboard, Turbo-Drive, or a Hard Disk Expansion System).

The published time is how long we had to wait for a screen change to take place after Leisure Suit Larry opened the bathroom door. Results may vary when you run other programs which pause while the computer changes screens, however comparable results can almost always be expected.

jrROM-Clock

With the jrROM-Clock installed you'll never need to input the correct date or time again! Just start your PCjr, and run the program that we provided. The jrROM-Clock then enters the date and time for you, automatically.



Often people don't bother to enter the date or time, however, entering the correct date and time can be quite important. Each time a file is changed, DOS records the current date and time in the diskettes directory.

This means anytime you ask for a directory of a diskette you can tell which files are the newest. And that's pretty helpful when two or more of your diskettes have files with the same name! And the jrROM-Clock is easy to install. Just remove either of the PCjr's BIOS chips and plug the jrROM-Clock into the system board's socket. Finally, plug the computer's BIOS chip into the socket on the jrROM-Clock. Installation takes less than ten minutes (provided your computer's BIOS chips are not soldered to the system board).

Best of all, our jrROM-Clock uses an embedded lithium energy cell guaranteed by its manufacturer to maintain time for more than 10 years! And that means its battery will probably last quite a bit longer (20 years typical). Accurate to within one minute per month.

jrROM-Clock
Catalog #14801 Price: \$39.95

Installation Available (\$25). Even if your BIOS chips are soldered to your system board! PC Enterprises will install a jrROM-Clock for you. Purchase a Thin-Fort Module and jrExcellerator and we'll install them too—and at no extra installation charge.

Keyboard Beeping Problem Solved!

A few PCjr owners have reported that a keyboard beeping problem is experienced when a speed up device is added to their PCjr. When this happens, the PCjr will occasionally beep for no apparent reason. The beep always occurs when a key is pressed or released, and the character entered may or may not be accepted.

This problem has been identified and solved by PC Enterprises. The problem is due to a bug in the PCjr's BIOS and is not related to the speed up device at all.

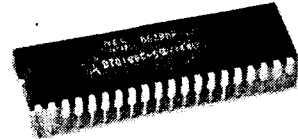
The keyboard beeping problem can be eliminated by using the FIXBEEP utility. The FIXBEEP utility can be obtained by purchasing the PCE Utility Disk (see Page 104). In addition, it is now built into the jrExcellerator ROM BIOS.

jrExcellerator users who experience a keyboard beeping problem can use the diskette version of the FIXBEEP utility, or return their jrExcellerator to PC Enterprises and PCE will add the FIXBEEP utility to the jrExcellerator's BIOS.

jrExcellerator Upgrade Service #97526 Price: \$30

V-20 Microprocessor

Here's a quick, easy, and inexpensive way to improve the performance of your computer. The PCjr came with an 8088 microprocessor. While the 8088 was at



one time very popular, today faster and more efficient microprocessors are available.

The V20 is one such faster microprocessor. It is completely compatible with the 8088 instruction set—only much faster! Improvements in the V20's micro code enable faster operation even though you have not increased the clock speed of the computer.

In addition, the V20 microprocessor provides greater compatibility with programs designed to run on 286 computers. That's because the V20 understands many 286 instructions which cause 8088 microprocessors to operate incorrectly.

When you replace your 8088 with a V20 Chip, you'll be able to measure an improvement in execution speed that varies up to 40%—depending upon the application. The most significant improvements will be noticed while moving large blocks of data and during number crunching applications.

The V20 is included with all jrExcellerator speed up boards and is also available separately so other PCjr users could take advantage of the improved performance it offers.

Installation

Your PCjr's 8088 microprocessor can be found underneath the PCjr's original disk drive. In most cases the 8088 is mounted in a socket. This means you'll be able to install a V20 without special tools or skills. If your 8088 is soldered to the system board we'll be happy to refund your money or install the V20 for you (installation charge \$25).

V20-8 Microprocessor
Catalog #19001-2 Price: \$16.95

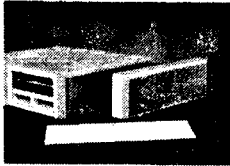
Performance Benchmark	Low Memory		High Memory	
	8088	V20	8088	V20
Norton SI	.7	1.0	1.0	1.9
Landmark (1)	.3	.3	1.0	1.1
Landmark (2)	1964ms	1905ms	800ms	588ms

Norton SI program version 4.50, Landmark version 0.99. Refer to the jrExcellerator page for test details. For test results which demonstrate actual improvements with application software refer to the Turbo-Drive page of our catalog.

The Enhanced Model PCjr came with 128K of conventional memory. Additional memory is the first thing, and often the only thing, the PCjr needs to run PC compatible software.

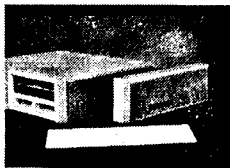
Memory

MegaboardPage 19



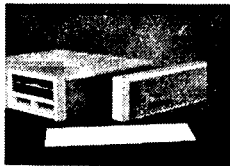
Want the finest and most versatile memory product that we offer? The Megaboard expands conventional memory to 736K (regardless of the amount of memory currently installed) and permits all additional memory to be useful for Ramdisk, EMS, Disk Cache, and Printer Spooler applications.

512K jrSidecar SeriesPage 20



Looking for a less expensive way to expand to 640K? The PCE 512K jrSidecar Series is just that.

128K Memory ExpansionPage 21



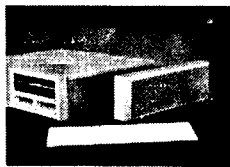
On a limited budget, or you don't need 640K right now? This product lets you expand memory to 640K in 128K increments.

192K Internal Memory CardPage 21



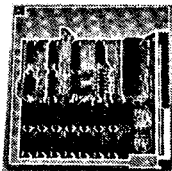
Already have 512K and you want 640K; or, you have 640K and want 736K; the 192K memory card may be the best choice.

128K Memory Expansion/with 736K ConversionPage 21



Already have 640K, and you want 736K without making any modifications to your PCjr system board? Purchase this product and just plug it in.

Racore Memory Expansion BoardsPage 21



Does your PCjr presently have a second drive system made by Rapport, Racore, or Quadram? If so, you can expand to 640K by plugging a Racore 512K memory board into your existing expansion unit.

Memory Board ServicesPage 22



Already have 256K? If so, it means someone has already installed a 128K memory expansion. We can upgrade your 128K expansion to 512K, which gives your PCjr a total of 640K.

Recommendation: You'll never have too much memory, so add as much as you can afford, but remember – many programs will not run unless you have 640K.



Also, remember that if you do not have a PCE jrExcellerator or Display-Master VGA Sidecar the PCjr uses 16K of conventional memory for its built-in display adapter. This means a PCjr with 256K of conventional memory only has 240K available to run programs. As a result, if a program says it needs 256K to run on a true PC, it may actually need slightly more than 256K to run on a PCjr.

Our recommendation is to add 128K more memory than you actually need. This allows you to solve two problems at once. Not only will you always have enough memory to run your programs, but more important to most, you'll always be able to run programs without using any of the PCjr's internal (slow) memory. Remember: All PCE memory expansion sidecars are much faster than the PCjr's internal memory. Faster memory means your programs run faster.

Expand by One Megabyte in One Megaleap!

The single most important expansion product for your PCjr is one that adds memory—memory to run serious programs such as dBase, Lotus 1-2-3, WordPerfect, and literally thousands of others. Memory that provides a reservoir of power to drastically improve the performance of your software because it's much faster than the memory that came with your PCjr.

Such immediate, dramatic expansion is yours when you plug in our PCE Megaboard. Fully compatible with all other PCE and IBM products, the Megaboard adds more memory than any other PCjr expansion product ever!

A reminder or two about PCjr memory will help underscore the expansion benefits provided by the Megaboard. The Enhanced model of the PCjr only came with 128K of memory. The computer's memory can be increased to 736K—96K more than the traditional 640K limitation of other computers.

All memory expansion products permit you to use any portion of this memory for a Ramdisk application, however, when you use other memory products, the memory used for the Ramdisk is immediately deducted from the amount available for running programs. That's the beauty of the PCE Megaboard. It expands conventional memory to 736K (regardless of how much memory you now have), and provides all additional memory to be used for other purposes. We call the additional memory PCE memory.

Let's say your PCjr already has 640K. If you install our 1024K Megaboard, it will expand your PCjr's conventional memory to 736K, which is adequate to run any program that runs on other computers. In addition, you'll also have 928K of PCE memory. If you only have 128K of memory before you add the Megaboard, you'll end up with 736K of conventional memory and a 416K Ramdisk.

The table below will help you identify the amount of memory expansion you obtain when you install a Megaboard, which is available in models providing 256K, 512K, 768K, and one megabyte (1024K) of memory.

First, locate the memory currently installed in your PCjr in column A. If you are uncertain of the amount, simply turn your computer off, then back on, and watch your memory count up on your screen.

Column B shows how much conventional memory you'll have after installing each model. (Conventional memory is memory available to programs that you run).

Column C shows the amount of PCE memory that you will have. (PCE Memory is memory available for Ramdisk and special applications which work with the expanded memory simulation software provided.

Here's an example of how you would use the Megaboard to drastically improve the performance of a program that runs slowly because it frequently stops to read the disk drive. Lets say the program requires 640K to run and that it comes on three separate diskettes. To run this program from a Megaboard Ram-disk, begin by copying all three diskettes onto the Ram-disk. Then, set the default drive to the letter used by your Ramdisk, and run the program in the usual manner. Presto—the program now loads and runs with amazing speed because it never pauses to read your drive or to ask you to swap diskettes.

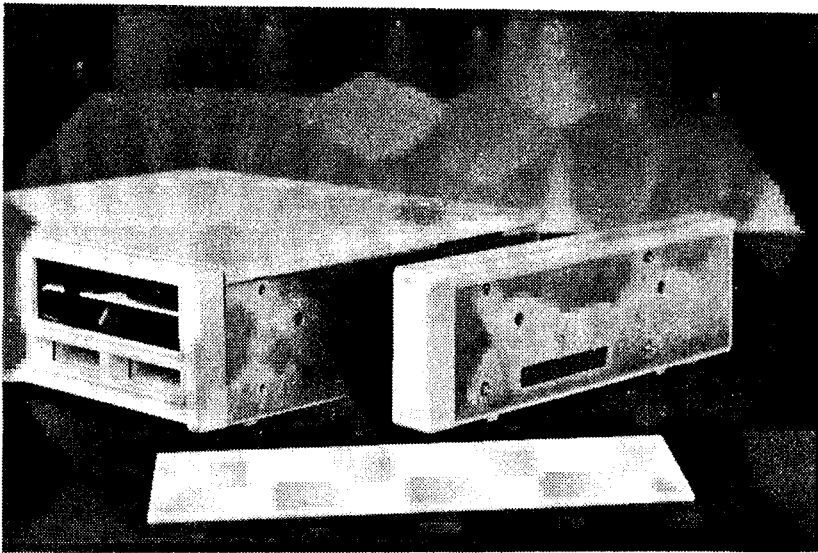
The Megaboard therefore allows you to increase your PCjr's memory up to 736K and to create a Ramdisk which does not use any conventional memory, a feature which was previously not obtainable unless you had an AT or other computer equipped with "Expanded" Memory.

- Permits expansion of conventional memory to 736K
- Creates a Ramdisk without using any conventional memory
- Permits rebooting without losing contents of the Ramdisk
- Running software from a Megaboard Ramdisk often improves performance dramatically. We used IBM Writing Assistant's spelling checker to check a 25 page document which needed 12 corrections. This process took over 21 minutes from floppy. It took less than four minutes when we did the same thing from a Megaboard Ramdisk
- A PCE Ramdisk is completely compatible with software that lets you set up a Ramdisk in extended memory
- Available in 256K, 512K, 736K, and 1024K models. All models are expandable to 1024K, so you can buy any model now and increase memory at a later date. Expand by adding 256K x 1 (150ns) DRAMS
- User supported LIM 3.2 Simulator software included
- Simple plug-in installation (It's a sidecar)
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Chip Prices are Down — Prices Reduced up to \$100!

A	B	C	B	C	B	C	B	C
128	384	0	640	0	736	160	736	416
256	512	0	736	32	736	288	736	544
384	640	0	736	160	736	416	736	672
512	736	32	736	288	736	544	736	800
640	736	160	736	416	736	672	736	928
736	736	288	736	544	736	800	736	1024
Model	256K		512K		768K		1024K	
Cat #	14028		14029		14030		14031	
Price	\$250		\$275		\$300		\$325	

Expand your PCjr's Memory with our 512K Series of Memory jrSidecars



If you're thinking about upgrading your PCjr, think about this — additional memory is all that you'll need to run most PC programs.

The PC Enterprises 512K Series of jrSidecars allows you to expand the PCjr's memory up to the conventional 640K limit of DOS and beyond—thus permitting the PCjr to run more PC programs than ever before!

Best of all, like other PC Enterprises jrSidecars, our 512K Series can be installed without even removing the lid from the PCjr's system unit! Simply unsnap the PCjr's side panel and plug the jrSidecar into the right hand side of the computer.

We think you'll agree, our jrSidecar Series of PCjr Expansion Products is perhaps the easiest to install add on accessory ever designed for any computer.

*Chip Prices are Down
So Buy Now and Save!*

Our 512K Series of Memory jrSidecars permit you to add up to 512K of memory to your PCjr. Expanding your PCjr's memory allows you to run more programs, however, running more programs is only one reason you'll want to add more memory.

More memory also lets you utilize a Ramdisk. A Ramdisk is an alternative to a second floppy disk drive in many applications. Once you learn how to use a Ramdisk you'll wonder how you ever managed without it!

Additional memory also permits you to run more background programs — including print spooler utilities that permit you to continue using the computer even while a document is printing.

But what's even more important in many applications is speed! When you install any PCE Memory jrSidecar, your programs can run faster than ever before. That's because our jrSidecar's memory is faster than the memory inside your PCjr. Much faster.

The 512K Series Memory jrSidecars team up CMOS technology with high density memory chips. Together these two technologies yield a winning combination—512K memory expansions that use less power than IBM's 128K expansion! And that's important because the PCjr power supply does not have a lot of power to spare.

That's why most people who add our memory jrSidecars do not need to add anything else. As long as your computer has enough power to support a single 128K expansion you can add our 512K jrSidecar instead!

And of course, PC Enterprises 512K Series of jrSidecars are completely compatible with just about every other PCjr product we know of, including products which plug into the PCjr's microprocessor slot — such as the jrExcellerator speed up board.

So why start expanding your PCjr with a memory expansion product made by a company which may or may not be there if you should need them? And why take the chance that you'll select a memory expansion product that doesn't work with PCjr speed up boards, VGA sidecars, or other PCE products still on the drawing board?

PC Enterprises is the PCjr add-on product supplier that has always been committed to supporting the PCjr, and we're committed to continue supporting the PCjr for as long as the need exists. Select a PC Enterprises jrSidecar today and rest assured that you'll be able to add the other PCjr products that you'll want tomorrow.

Which jrSidecar Should I Select?

Two models are available. If you have not yet started to expand your PCjr's memory your PCjr currently has 128K. In this case you can purchase either model shown below. Select our 256K jrSidecar to increase memory to 384K, or select our 512K sidecar and you'll expand to the conventional 640K limit of DOS!

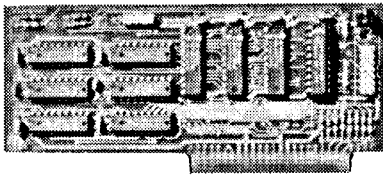
If you already have 256K our 256K jrSidecar expands your memory to 512K and our 512K jrSidecar lets you shatter the old 640K boundary of DOS by expanding to 736K!

This table shows which jrSidecar we recommend for your system. If you're not sure how much memory you now have, turn your computer on and observe the results. The computer will count the total amount of memory installed.

IF YOU NOW HAVE	RECOMMENDED SIDECAR	MEMORY AFTER EXPANSION
128K	512K	640K
256K	512K	768K*
512K	256K	768K*
640K	256K	768K*
256K jrSidecar—Catalog #14023 Was \$245, Now \$220		
512K jrSidecar—Catalog #14024 Was \$295, Now \$245		
*Only 736K of this memory is usable.		

192K Internal Memory Card

Now PCjr Users
can add 128K of
memory for only
\$50



Our new 192K memory card replaces the PCjr's existing internal 64K memory card—thereby adding an additional 128K of memory to your system. This new memory card provides an easy and low cost method to add to the memory you already have.

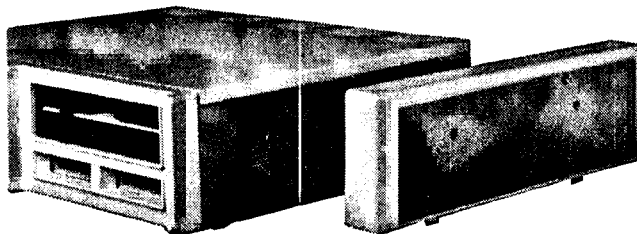
*Requires system board modification (see Page 13)

192K Internal
Memory Card
Catalog #14032

Only
\$50

- Low Cost
- Replaces the PCjr's existing 64K card with a 192K card
- Expands memory on 640K PCjr's to 736K (System Board Modification #97514 required)
- Expands memory on 512K PCjr's to 640K (System Board Modification #97515 required)
- Expands memory on 128K PCjr's to 256K (System Board Modification #97516 required)
- Does not require any additional power
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Clearance Sale on IBM Brand Memory Expansion Products



These IBM sidecars are reconditioned, however they are thoroughly tested and warranted by PC Enterprises for 90 days. User supported memory management software is included.

128K Memory Expansions

The IBM Brand 128K Memory Expansion Sidecar. Just plug this sidecar into your PCjr and the amount of memory available to run programs will be increased by 128K. This means if your PCjr presently counts up to 128K you'll have a total of 256K. You can add up to four regular 128K sidecars.

Catalog #78715 Regular Price: \$199 **Sale \$99**

Special 128K Memory Expansion with 736K Conversion

Now a "special version" of the IBM 128K sidecar can also be purchased from PC Enterprises. This version is modified by PC Enterprises to permit those with 640K of memory to expand to 736K.

Catalog #78727 Regular Price: \$199 **Sale \$99**

512K IBM Brand Memory Expansion

This is a 128K sidecar that has been upgraded by PCE to 512K.

Catalog #14019 Regular Price: \$295 **Sale \$199**

Racore Brand Memory Expansion Products



If you already have a Rapport, Quadram, or Racore Drive II Enhancement Package, these memory expansion products include everything you need.

384K Memory Expansion

The Racore 384K Memory Expansion board can be plugged into any Rapport, Quadram, or Racore Drive II Enhancement Chassis. It increases the amount of memory available to run programs by 384K. This means if your PCjr presently counts up to 128K you'll have a total of 512K.

(Note: This product is not recommended if you intend to install a speed up board).

Catalog #32520 Regular Price: \$169 **Sale \$149**

512K Memory Expansion

The Racore 512K Memory Expansion board adds 512K of memory to your system. This means if you presently have 128K this product expands your memory to 640K.

Catalog #32523 Price: \$189

Memory Board Services

512K Upgrade (Modification #97501)

If you already have a 128K memory sidecar your PCjr now has 256K of memory. You can expand your PCjr's memory to 640K—without purchasing anything else! Here's how.

All 128K memory sidecars use two banks of 64K memory chips. Today, newer and higher capacity memory chips are available. We'll remove the 64K chips which are soldered to your board and replace them with 256K chips. Then we'll make other modifications which allow your PCjr to address and decode the additional memory. Your 128K sidecar becomes a 512K sidecar. And when plugged into your 128K PCjr your computer now has 640K of memory—and that's the conventional limit of DOS.

Permit Expansion to 736K (Modification #97509)

If your PCjr already has 640K and you also have an extra 128K IBM sidecar, we can modify your 128K IBM sidecar so it increases your PCjr's memory to 736K, surpassing the 640K limitation of other computers!

Memory Board Repair (Service #98507)

If your memory sidecar is not working correctly, we can repair it. The charge for component level repair is still only \$80 and that includes parts and labor. Repairs normally take one to three weeks (depending upon workload). Be sure to include a note which describes in detail any problems that you've had, and also send the diskette you use to start your system. If your memory sidecar is made by Tecmar, be sure to include the power transformer. (If you want your sidecar repaired and upgraded the charge is therefore \$80 plus the regular upgrade charge for your sidecar).

Trade-Ins

If you have a defective memory sidecar and prefer to trade it in you can do so. We allow a \$30 credit towards other products in our catalog. Just complete Sections 1 and 6 below, then send this form (photocopy okay), along with the defective sidecar and a completed Order Form, to the address below. Enter \$30 in the section of our Order Form marked "Other Credits" and deduct \$30 from the amount due.

Shipping Instructions

Disconnect the sidecar from your computer then place the sidecar in a small sturdy box. Next, complete the bottom half of this form and send the form (photocopy okay), along with your sidecar to the address below. We suggest that you use First Class Priority Mail, however, feel free to use UPS, RPS, Federal Express, or any other shipper that you desire. (Insure the sidecar for its replacement value).

If you are sending in your sidecar for a modification, please do not send any plug in power supplies, diskettes, loose screws or other items which you normally use with your sidecar. Also, to avoid damage by static electricity, do not remove the sidecar from the plastic sidecar case! And finally, be especially careful that you do not send the wrong sidecar. The 128K IBM Memory Attachment looks just like a printer or power attachment.

PCE Services (Section 3)

For those in a hurry we now offer PCE Rush Service. While we can't make any promises (turn around time is always dependent upon workload), if you're sending in your sidecar for upgrade or modification and you select PCE Rush Service, we'll try to have your sidecar on its way back to you the day after it's received. If your sidecar is here for repair it may take several days due to the nature of repair services, although we'll always work on sidecars which pay for Rush Service before any others.

Return Shipping (Section 4)

Regular Service includes return shipping and insurance via UPS Ground Service. Ground service can take up to 10 days, depending upon the distance shipped. Priority shipping services are also offered. If you pay this added return shipping charge, we'll pay the shipper to get your sidecar back to you in much less time. If you don't want us to use UPS, or if you don't provide us with a street address, we'll use the US Postal System instead. In this case we will send someone to our Post Office to mail your sidecar back to you, but you must also include an additional \$7.50 payment for special handling (total \$12.50 shipping & handling).

Send your sidecar to:

Memory Board Services, PC Enterprises, 2400 Belmar Blvd - Building B16, Wall, NJ 07719

(To avoid delays be sure the words Memory Board Services are clearly marked on the outside of the package)

<p>Section 1—Tell us What to Do</p> <p><input type="checkbox"/> Please upgrade my 128K sidecar to 512K (Modification #97501).</p> <p><input type="checkbox"/> Please modify my 128K sidecar so it expands my 640K PCjr to 736K (Modification #97509).</p> <p><input type="checkbox"/> Please repair my sidecar (Service #98507).</p> <p><input type="checkbox"/> The enclosed sidecar is defective. Please keep it. I have taken a \$30 credit on the enclosed order.</p>	<p>Section 2—Cost of Services</p> <p>Modification #97501 512K Upgrades Offered For: Tecmar JrCaptains, Microsoft Boosters, QuadMEMjrs, AST jrCombo, Impulse, and IBM 128K Memory Expansions Price: \$199</p> <p>Modification #97509 Permits Expansion to 736K—Price: \$35</p> <p>Service #98507 Memory Board Repair—Price: \$80</p>	<p>Section 3—PCE Services</p> <p><input type="checkbox"/> Regular Service (no additional charge)</p> <p><input type="checkbox"/> Rush Service for Modifications (\$25)</p> <p><input type="checkbox"/> Rush Service for Repairs (\$50)</p> <p>Section 4—Return Shipping</p> <p><input type="checkbox"/> Regular UPS (\$5.00)</p> <p><input type="checkbox"/> UPS Next Day Service (\$27.50)</p> <p><input type="checkbox"/> UPS Second Day Service (\$12.50)</p> <p><input type="checkbox"/> US Mail (\$12.50)</p>
<p>Section 5—Payment Surcharges</p> <p><input type="checkbox"/> Check/Money Order Enclosed (no additional charge)</p> <p><input type="checkbox"/> Charge my Visa or MasterCard (no additional charge)</p> <p><input type="checkbox"/> Return COD (additional \$5) Cash or certified check only</p> <p>Note: To avoid delay we will not hold up any work if the payment received does not cover the cost of the services you request. In this case we will return your sidecar COD for the balance due.</p>	<p>Section 6—Customer Information</p> <p>(Your street address is required for UPS delivery).</p> <p>Name _____</p> <p>Street Address _____</p> <p>City, State, Zip _____</p> <p>Day Phone () _____</p> <p>(Credit Card Customers Also Fill In:)</p> <p>Name on Card _____</p> <p>Card# _____ ExpDate _____</p> <p>Signature _____</p>	<p>Section 7—Calculating Cost Please Fill In:</p> <p>Total Cost of Service(s) (Section 2) _____</p> <p>Total PCE Services (Section 3) _____</p> <p>Subtotal _____</p> <p>NJ Residents 7% Tax _____</p> <p>Return Shipping (Section 4) _____</p> <p>Payment Surcharges (Section 5) _____</p> <p>Total _____</p>

The Enhanced Model PCjr came with one 5¼ inch double density (360K) floppy diskette drive.

Floppy Disk Drives

The PCjr's diskette drive uses floppy diskettes which measure 5¼ inches across. These diskettes are referred to as 360K diskettes because they have enough space to hold 360K of information. (Note: The term 360K refers to space on the diskette, and therefore has nothing to do with how much conventional memory you have installed on your system).

Although most software is still distributed on 360K diskettes, some software manufacturers are switching to smaller, yet higher capacity, 720K diskettes. These newer diskettes, which come in hard plastic jackets and measure only 3½ inches across, can also be used on a PCjr—but only if the PCjr has a 720K diskette drive.

360K Junior Drive SystemPage 26

Want to add a 5¼ inch diskette drive as a second drive?

1.2MB Junior Drive SystemPage 26

Prefer a 5¼ inch drive that uses high density diskettes?

720K Junior Drive SystemsPage 27

Want to add a 3½ inch diskette drive as your *second or third* drive?

1.44 and 2.88MB Junior Drive SystemsPage 27

Prefer a 3½ inch drive that uses high density diskettes?

360K Replacement DrivePage 24

Has your existing drive started to go bad? Replace it with a brand new 5¼ inch drive.

720K Replacement DrivePage 27, 24

Looking for the least expensive way to use 720K diskettes? Replace any of your existing 360K diskette drives with this brand new 3½ inch drive.

Recommendation: Most programs can be run with only one drive. Some require either two floppy drives (which may need to be the same type), or one floppy and one hard drive. The number of drives required by a program is often listed on the software package.

The recommended way to set up a PCjr is with one 5¼ inch drive, one 3½ inch drive, and one hard drive. In this configuration you'll be able to use software that comes on any diskette format.

If you're on a limited budget, and you are not planning to purchase a hard disk drive in the near future, purchase our 360K Junior Drive II System to end the nuisance of diskette swapping and to enable you to run all programs which do not run now because two drives are required.

Replacement Drives

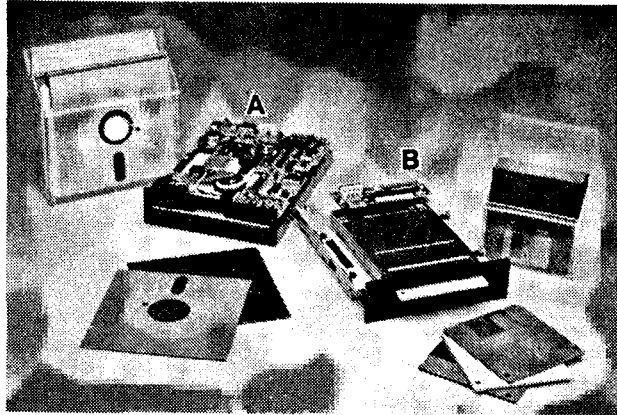
Disk drives are mechanical devices which have lots of moving parts. As a result, disk drives are usually the first and often the only part of the PCjr that ever wears out. If your PCjr has received a lot of use, and you've started to receive disk drive error messages, replacing your disk drive is the first thing to do.

In addition, disk drives provided by PCE are always tested, set up, and modified by PCE when necessary to work in PCjr computers. Not all 360K and 720K disk drives will fit and work properly in the PCjr. Diskette drives sold by PCE are therefore the drives we believe are best suited for PCjr applications.

360K Diskette Drives

A Replaces the original PCjr drive. These drives are specifically selected to work and fit correctly in the PCjr. Half height, double sided, and fully compatible with the PCjr's double density controller. Two heads and 40 cylinders provide 360K of formatted storage. 6ms track to track access time provides fast transfer of data. Low power dissipation. Warranted by PC Enterprises for a full year!

Catalog #44002 Price: \$129



Note: You can replace your existing 360K disk drive with a 720K drive but you can not replace it with a 1.2MB, 1.44MB, or 2.88MB drive. That's because the PCjr diskette drive controller card only works with double density (not high density) drives.

720K Diskette Drives

B This 3 1/2 inch drive can be installed inside your PCjr as a replacement to your existing 360K drive — or as a replacement to your existing second or third PCjr drive. It can be used with the optional Micro Disk software (see page 27) if you are still using DOS 2.1, or you can switch to DOS 3.2 (or later) which also lets you boot from this drive.

Catalog #44003 Price: \$129

Important Notices for Racore DMA Users

The Racore DMA option requires that you use the Racore brand floppy drive controller (FDC) card instead of the genuine PCjr FDC.

The Racore FDC requires a modification before it can be reliably used to operate replacement drives. This means, if your PCjr has the Racore DMA option installed, you must either disable the DMA option, or modify your Racore FDC before any of these replacement drives will operate reliably in your system. To have the modification performed by PCE, you can send your Racore FDC to PC Enterprises and order:

Modification #97513 Price: \$30

DMA Disable Kit

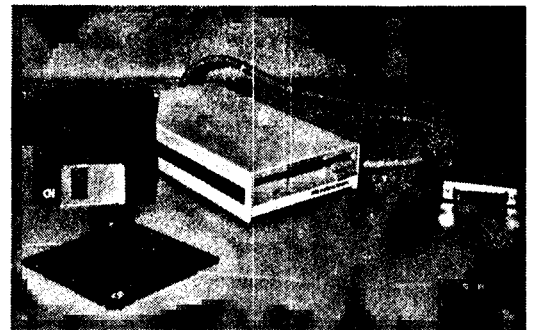
It only takes about ten minutes to remove the DMA option and most PCjr owners will never know the difference! The DMA Disable Kit includes cables, components, and instructions — everything you need to disable DMA except the original IBM PCjr FDC (which you should still have).

Catalog #10047 Price: \$34.95

External Drives for the PCjr and other Computers

These external drives can be connected to your PCjr by plugging the drive into your existing parallel printer attachment. Your printer then plugs into the rear of the disk drive. The drives work with PCjrs and other computers.

- 1.2MB External System
Catalog #12559 Price: \$275
- 1.44MB External System
Catalog #12557 Price: \$275
- 2.88MB External System
Catalog #12558 Price: \$325



J&M Floppy Drive Controller Card

The J&M Floppy Drive Controller Card is a form, fit, and function replacement for the IBM Controller—with one important exception. The J&M Controller operates up to three double density (DSDD) floppy drives (IBM's controller only controls one disk drive). It comes with a signal cable (connectors provided for up to three disk drives) and the JRCONFIG software.

Catalog #79038 Price: \$129

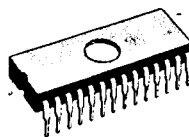


Racore EPROM

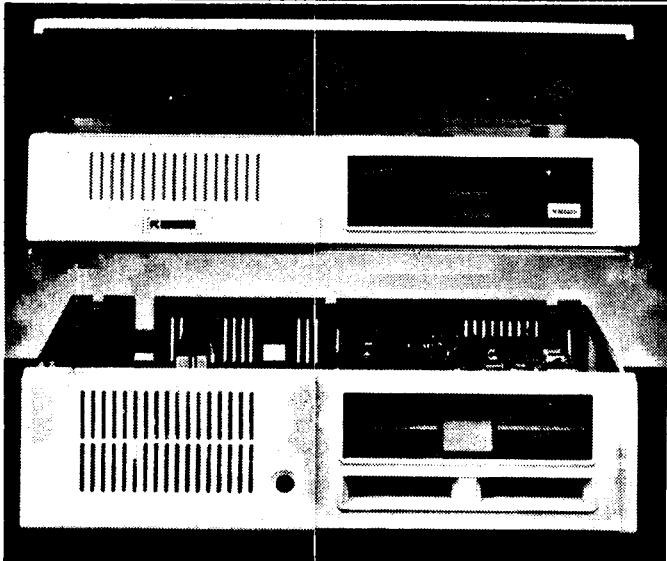
All Racore Drive II Enhancement Packages have a plug-in device called an EPROM installed in a socket on the Racore sideboard. This device tells DOS that you have two drives installed.

When a PCjr is operated with one 360K drive and one 720K drive, it's often preferred to tell DOS that you only have one drive installed. This lets your 360K drive work as both A: and B: and your 720K drive usually becomes drive C: or D:. This configuration is desirable because it simplifies the process of copying

files from one 360K diskette to another. To operate a Racore in this configuration, all you'll need is a new EPROM for your Racore. Contact PCE for availability.



Common Features to all Junior Drive Floppy Disk Systems



Our Junior Drive Systems are now long established as the most popular add-on floppy disk drive expansion systems you could purchase for the PCjr. Both 5¼ inch and 3½ inch models in all industry standard densities are available.

Each system comes in its own chassis which snaps on top of the PCjr system unit—or on top of any other snap-on-top enclosure that you might have. While other computers are designed to accommodate a limited number of disk drives, the Junior Drive System allows PCjr owners to add an unlimited number of expansion products to their PCjr. It also makes the Junior Drive System the most attractive disk drive expansion system you could buy.

Installation is a breeze! To install the snap-on-top enclosure just remove the PCjr's existing system lid, then snap the Junior Drive Enclosure on top of your PCjr. The PCjr's existing lid then fits on top of the Junior Drive System—so you'll have no trouble installing the system right in your own home!

Once installed, each model adds only 2½ inches to the total height of your system unit. Your PCjr looks like it came from the factory as one piece and friends will find it hard to believe that each Junior Drive System is really an add-on unit.

Double Density models permit you to add 360K (5¼ inch) and 720K (3½ inch) diskette drives as your second or third floppy drive. These systems use "Double Sided Double Density" (DSDD) diskettes.

High Density models permit you to add a 5¼ inch 1.2 Megabyte system and two types of 3½ inch systems (1.44 MB and 2.88 MB are both available). These systems use high density diskettes.

- Installs in minutes without any tools
- Snaps on top of the PCjr
- 360K, 720K, 1.2MB, 1.44MB, and 2.88MB systems available
- Works with all known sidecars, cartridges, and most other PCjr products
- Works with PC DOS 2.1, 3.0, 3.1, 3.2, 3.3, 4.0, and 5.0
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

As you can see, the Junior Drive Floppy Disk Expansion System offers a wide selection of drives to fit your needs. Much more important, if you select the Junior Drive System as your first add-on disk drive system, it can grow with your needs—and with your budget.

Double Density Systems

Select a Junior Drive II System if you will be adding a 360K or 720K (double density) disk drive as your second drive and a Junior Drive III System if you already have a Junior Drive II System and will be adding a third floppy disk drive. Each system comes complete with everything needed.

Double Density models use PC Enterprises' Enhanced jrDriver Interface Card. This card (which is included with Junior Drive II Systems) enables you to control up to four double density drives.

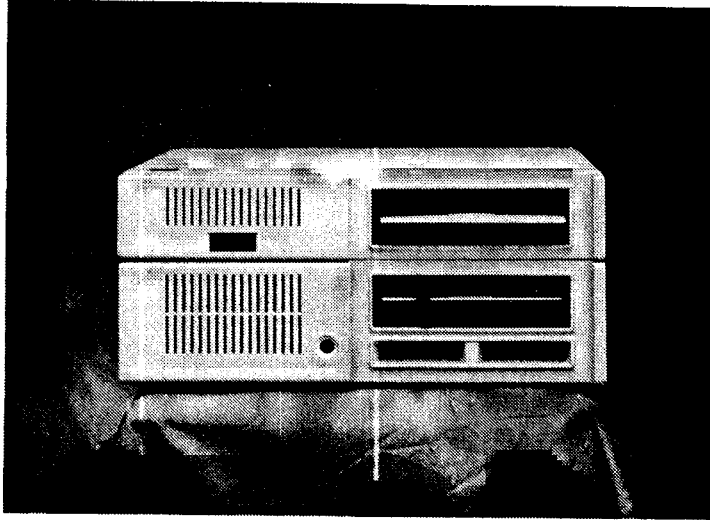
Note: Junior Drive II Systems use the Enhanced jrDriver in the energy efficient mode. In this mode the system does not use any of the computer's +12 Volt power supply, which means it's not likely you'll need to add another power supply. Junior Drive III Systems use the daisy chain mode (all drive motors spin simultaneously) so an additional power supply may be required.

High Density Systems

High Density Junior Drive Systems do not use the Enhanced jrDriver Interface card. Instead they use a proprietary controller that plugs into the PCjr sidecar expansion bus—making High Density systems especially easy to install. To install a High Density System, simply remove the PCjr system lid, snap the high density system on top, then plug in the sidecar!

Even when you already have other systems snapped on top of your PCjr our high density system is just as easy to install. That's because the system uses software to operate the drive and assign the drive letter. So you don't even need to worry about drive select jumpers and you never need to take your PCjr apart. Just add one line to your CONFIG.SYS file—or type the word INSTALL and let our install program do it for you (this system reads and writes information just as fast as your existing 360K drives).

5.25 inch Junior Drive Systems



All 5¼ inch floppy diskette drives use diskettes which measure 5¼ inches square. These diskettes come in soft flexible jackets which therefore require care in handling. The diskettes that came with your PCjr are 5¼ inch diskettes.

The PCjr's diskette drive uses double sided double density (DSDD) diskettes (double density means 512 bytes per sector). It is a 40 track drive that can fit nine sectors on each track. As a result 360K of information can be stored on each diskette (512 bytes x 40 tracks x 9 sectors x 2 sides). Select our 360K Junior Drive System if you want to add a double density diskette drive as your second or third floppy drive.

Many newer computers come with diskette drives that use high density 5¼ inch floppy diskettes. These drives are 80 track drives which therefore allow twice the information to be stored on each diskette. In addition, 5¼ inch high density drives squeeze 15 sectors on each track. As a result, high density drives can store 1.2 Megabytes of information (512 bytes x 80 tracks x 15 sectors x 2 sides) on a single diskette.

Important Note:

While our 1.2MB system works perfectly on the PCjr, 1.2MB drives are not fully compatible with 360K diskettes (this is not a PCjr unique problem)! The problem exists because the "head" on 1.2MB drives is not as wide as the "head" on 360K drives. As a result, if you use a 1.2MB drive to write on a 360K diskette even once, 360K drives may become unable to read the diskette. To prevent this problem from occurring, the PCE 1.2MB System will not work with 360K diskettes. Fortunately, the disk drive industry learned from this mistake and took action to maintain compatibility when high density 3½ inch drives were designed. All formats of 3½ inch diskettes are therefore compatible.

360K Junior Drive II System

The 360K Junior Drive System is our original system. It is popular with beginners and others who consider themselves computer novice. Its popularity remains high because it uses the same 360K diskettes as the disk drive that came with the PCjr, making this system very easy to use.

Once this system is installed you'll be able to run all programs that will not run now because two drives are required. In addition, many programs you currently run will now run so much more conveniently that you'll wonder how you survived so long with only one drive. The computer will never again display the "Insert Diskette for Drive B" message. Instead, the computer swaps drives each time you previously had to swap diskettes! This system ends the annoyance of constant diskette swapping!

Select this system to add a 5¼ inch disk drive to your PCjr as your second 360K floppy disk drive. Installs in minutes using the existing PCjr power supply and comes complete with everything needed. Includes a 360K Floppy Diskette Drive, Junior Drive Expansion Chassis which snaps on top of the PCjr, Enhanced jrDriver Interface Card, Energy Efficient Mode Two Drive Signal Cable, Power Y Adapter Cable, Software, and an illustrated Installation and Operation manual.

Catalog #12509 Price: \$195

1.2MB Junior Drive System

Our 1.2MB Junior Drive System lets you use high density diskettes capable of storing 1.2 Megabytes of information.

Select this system to add a 1.2MB system to your PCjr as an additional drive, regardless of how many drives you now have. This system snaps on top of the PCjr and uses a special PCE high density controller that plugs into the sidecar expansion slot. Includes a 1.2MB Floppy Diskette Drive, high density controller, snap-on-top expansion chassis, signal cable, and manual.

Note: This is a new product. Be sure to contact PC Enterprises to determine availability before ordering.

Catalog #12544 Price: \$275

All High Density Junior Drive Systems come with all the cables you'll need to power the system from the PCjr's existing power supply, however an optional plug-in-the-wall type external power supply is also available. If you prefer to add a separate power supply refer to page 43 of the power supply section of this catalog.

3.5 inch Junior Drive Systems

All 3½ inch floppy diskette drives use shirt pocket-size floppy diskettes which measure only 3½ inches square. These diskettes are more rugged and durable than 5¼ inch diskettes because they come in a hard plastic jacket.

Double density drives which use 3½ floppy diskettes are all 80 track drives. This means 720K of information can be stored on each diskette (512K bytes x 80 tracks x 9 sectors x 2 sides).

Three double density and two high density systems offering 1.44MB and 2.88MB capacities are available.

Double Density Models

Double density systems can be set up to use any drive letter when using DOS 3.2 or later. The optional MICRODISK software is required with DOS 2.10.

720K Junior Drive II System

Adds a 3½ inch (720K) disk drive to your PCjr as your second double density drive. Installs in minutes using the existing PCjr power supply and comes complete with everything needed. Includes a 720K Floppy Diskette Drive, Junior Drive Expansion Chassis which snaps on top of the PCjr, Enhanced JrDriver Interface Card, Energy Efficient Mode Two Drive Signal Cable, Power Y Adapter Cable, Software, and an illustrated installation and operation manual. Optional Microdisk software or DOS 3.2 or later is required.

Catalog #12521 Price: \$195

720K inch Junior Drive III System

Adds a 3½ inch 720K disk drive to your PCjr as your third double density drive. Installs in minutes on top of an existing Junior Drive II System using your existing Enhanced JrDriver Interface Card. Includes a 720K Floppy Diskette Drive, Junior Drive Expansion Chassis, Daisy Chain Mode Three Drive Signal Cable, Software, and an illustrated installation and operation manual. Also requires a Junior Drive Power Supply which is not included. Optional Microdisk software or DOS 3.2 or later required.

Catalog #12518 Price: \$195

720K Junior Drive III System for Racore Users

And now, a new system is available for Racore users. Select this system if you already have a Racore, Quadram, or Rapport Drive II Enhancement Package and want to add our 3½ inch drive on top of your existing system. Optional Microdisk software or DOS 3.2 or later required.

These systems can be used regardless of the number of floppy and hard drives you are currently using. All work with DOS 2.10 or later.

Racore users with DMA may require the FDC Modification. See Page 94 for details.

Catalog #12526 Price: \$195

DOS 3.20

Recommended for anyone who uses a high density disk drive. Does not require any software device drivers to read or write high density diskettes. Very limited quantities.

5¼ inch diskettes (opened) Catalog #78723 Price: \$39.95

3½ inch diskettes (new) Catalog #78732 Price: \$39.95



External Switch Kit

Now Included with Double Density Systems!

The External Switch Kit lets your first and second physical drives swap drive letters. This allows you to change the drive you use to boot your system without disassembling your computer. This is a very important feature because it lets you run copy protected software. That's because certain copy protection schemes, known as key disk protection, only allow a program to run if the original diskette is in the A drive (That's a problem if your 3½ inch drive is set up as your B drive).

This kit which is now included with all 3½ inch Junior Drive Systems is offered separately for those who purchased a Junior Drive System before this feature became available. The switch mounts externally by drilling a hole in the PCjr cabinet, or as an alternative, you can use the hole intended for the IR receiver. A wire connected to the switch then plugs into the 2x3 jumper block found on all Enhanced JrDrivers.

Catalog #11204 Price: \$12.95

MICRODISK SOFTWARE

When you use our 3½ inch (double density) drives with DOS 3.2 or later DOS recognizes 80 track diskette formats without doing anything special. In addition, DOS 3.2 (and later) allows you to boot with 80 track diskettes. However, you don't need to stop using DOS 2.10 just to add a higher capacity disk drive. The PCE MICRODISK software allows you to use our 3½ inch (80 track) drives with PC-DOS 2.1 or later.

Catalog #85518 Price: \$19.95

High Density Models

Note: This is a new product. Be sure to contact PC Enterprises to determine availability before ordering.

1.44MB Junior Drive System

Adds a 1.44MB system to your PCjr as an additional drive, regardless of how many drives you now have. This system snaps on top of the PCjr and uses a special PCE high density controller that plugs into the sidecar expansion slot. Includes a 1.44MB Floppy Diskette Drive, high density controller, snap-on-top expansion chassis, signal cable, and manual. Completely 720K compatible.

Catalog #12542 Price: \$275

2.88MB Junior Drive System

Same as the 1.44MB system except 2.88MB. Completely 1.44MB and 720K compatible.

Catalog #12543 Price: \$325

Junior Drive System Kits & Components

Complete Junior Drive II Kit

This kit includes everything normally supplied with our Junior Drive II System—except the disk drive. Often purchased by those who currently use an external drive and want to convert to our system that snaps on top. Can be used with 360K or 720K drives.

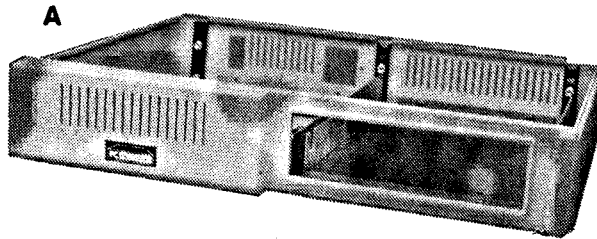
Includes the enclosure which snaps on top of the PCjr, standard version of the Enhanced JrDriver, Power Y Cable, Two Drive Energy Efficient Mode Signal Cable, Software and Manual.

Catalog #10011 Price: \$169

Controller Card Kit (for use with External Drives)

This kit is normally purchased by those who already have their own disk drive and enclosure. It includes the Enhanced JrDriver (special version), Two Drive Energy Efficient Mode Signal Cable, Software and Manual. The special version of the Enhanced JrDriver plugs into the internal modem slot.

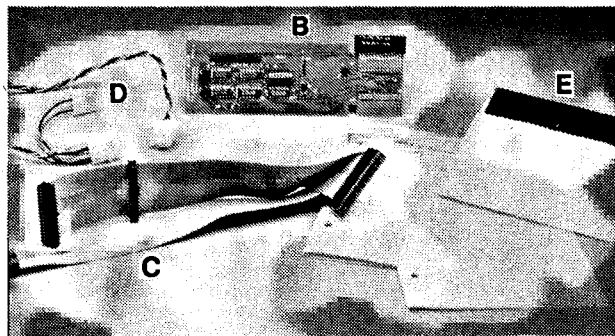
Catalog #10031 Price: \$79



Controller Card Kit (for use with our Snap-On-Top Enclosure)

Same as the complete Junior Drive II Kit except less the enclosure.

Catalog #10030 Price \$79



A The enclosure that snaps on top of the PCjr—or any other PCjr Expansion System. This all-aluminum cabinet has an injection-molded front bezel which matches the front of the PCjr. Cut-outs are provided for a power switch and power receptacle. Often purchased by do-it-yourselfers who originally purchased an external disk drive which snaps on top.

Junior Drive Expansion Chassis
Catalog #42007 Price: \$75

B Enhanced JrDriver
Catalog #12516 Price: \$59.95

C Two Drive Energy Efficient Mode Signal Cable
Catalog #91806 Price: 39.95

D Power Y Cable
Catalog #91805 Price: \$12.95

E Software and Manual
Catalog #55002 Price: \$9.95

Also available but not shown:
Three Drive Daisy Chain Mode Signal Cable
Catalog #91808 Price: \$39.95

Additional Shelf for Snap-On-Top Enclosures
Catalog #96003 Price: \$6.95

The Enhanced JrDriver

The PCjr was designed by IBM to work with one double density disk drive. The Enhanced JrDriver is a product designed by PC Enterprises that allows you to overcome this limitation. One Enhanced JrDriver lets you add up to three additional double density disk drives (That's why the Enhanced JrDriver comes with the Junior Drive II System, and is not included with Junior Drive III Systems).

A mode control switch lets you operate in either the Energy Efficient or Daisy Chain mode. In the Energy Efficient mode, the Enhanced JrDriver can operate two drives. In this mode, drive motors are controlled independently so the computer's +12 volt power supply is never used to spin more than one drive motor at one time. This feature enables most people to add a Junior Drive II System without adding another power supply.

When you add a third or a fourth drive you'll operate the Enhanced JrDriver in the Daisy Chain mode. In this mode the Enhanced JrDriver supports four floppy disk drives (However, all drive motors are controlled simultaneously which means you may need an additional power supply).

Those who already own an older PC Enterprises Junior Drive System which uses our original "Modem Magician" JrDriver Interface Module that uses the internal modem slot should not feel left out. If you ever purchase a Junior Drive III System, internal modem, or other PC Enterprises product which requires the Enhanced JrDriver, we'll swap your original JrDriver card for the Enhanced JrDriver. Free!

To install the Enhanced JrDriver just plug it into the computer's disk drive controller slot. Next plug your existing disk drive controller card on top of the Enhanced JrDriver—in piggyback fashion. Finally attach a cable which connects between both cards and your disk drives.

- Included with all Junior Drive II Systems.
- Installs in minutes without any tools.
- Works with any industry standard 360K or 720K disk drive.
- Does not use the internal modem slot (standard version).
- Lets you select which drive you want to be your A: drive.
- Operates in Energy Efficient or Daisy Chain mode.
- Provides the hardware to control up to four drives.
- Direct replacement for our original JrDriver (special version)

Enhanced JrDriver (Standard Version)

The Enhanced JrDriver is included with all Junior Drive II Systems and is also available separately as a replacement part. Complete kits which include the Enhanced JrDriver, cables, software and all the other things do-it-yourselfers require are also available and are featured on another page of this catalog. The standard version of the Enhanced JrDriver can only be used with the PC Enterprises snap-on-top enclosure because installation requires room inside the PCjr to piggyback two cards.

Catalog #12516 Price \$59.95

Enhanced JrDriver (Special Version)

The special version can be used as a direct replacement for our original "Modem Magician" JrDriver Interface Module. It plugs into the internal modem slot. The only difference between the special and the standard version is that the special version is assembled without the top connector which prevents the PCjr's system lid from closing when the card is installed in the internal modem slot. (Not shown in photo).

Catalog #12519 Price \$59.95

IBM has never marketed a mass storage device for the PCjr. With the exception of additional memory, a SCSI hard disk drive is the most important add-on product you can purchase for your PCjr.

Mass Storage Devices

A hard drive improves the performance of your PCjr more significantly than any other product. Once installed, you can copy many diskettes onto the hard drive. Your programs now run without using floppy diskettes.

A CD-ROM drive allows you to run software purchased on CD-ROMs. Over 600MB of information can be packed onto each CD-ROM. A Floptical drive allows you to use industry standard 720K and 1.44MB floppy diskettes as well as floptical diskettes, which squeeze 21 Megabytes on each 3½ inch floptical diskette. A Tape Backup system allows you to quickly and conveniently back-up your PCjr hard drive, floptical drive, or other mass storage device.

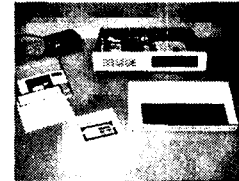
1. The ST01jr and TMC850jrPage 31



Our SCSI host adapters. One is all you need to connect up to seven SCSI devices!

2. Complete PCjr Hard Drive SystemsPage 33

Want a hard drive system that includes everything you need? This system comes in an injection molded enclosure that snaps on top of the PCjr and includes its own power supply. Our original Junior Drive System (page 30) leaves space for the PCE 150 Watt Internal Junior Drive Power Supply.



3. Removable Cartridge Hard Drive SystemPage 34



Want to add a hard drive that you will not outgrow? High performance and unlimited capacity is yours with this removable cartridge system!

4. CD-ROM Drive SystemPage 35

Interested in running software on CD-ROMs? Now you can!



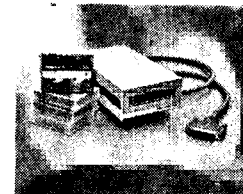
5. 21MB Floptical DrivesPage 36



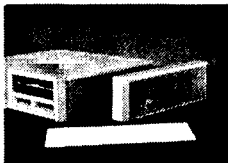
Would you like to use 720K and 1.44MB floppies? This floptical drive will make your dreams come true!

6. Tape BackupPage 37

Looking for an easy and convenient way to backup your hard drive? Here's the easiest!

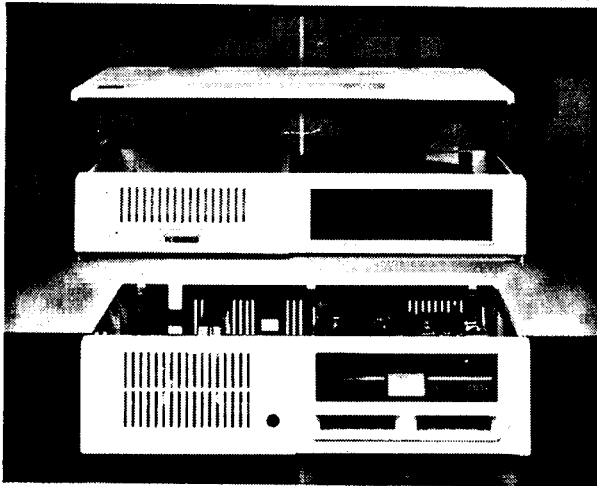


7. Turbo-DrivePage 38



Like to add a hard drive that's four times faster than IBM's 16mhz 386 PS/2? State of the art performance can be yours!

Why People Add Our Hard Drives



Perhaps the most important PCjr expansion product, second only to additional memory, is the hard disk drive. A hard drive will make your PCjr easier to use. Much easier. A hard drive will add tremendous diskette storage to your system and virtually eliminate the need to use floppy diskettes!

With a hard drive installed, you may never again fumble through a box of diskettes searching for a program to run. Hundreds of programs will be at your fingertips, ready to run, all the time.

And the PC Enterprises Hard Disk Expansion System is self booting. That means you'll never need to search for a bootable DOS diskette. Just turn your computer on, and DOS will start automatically.

Hard drives also provide substantial speed and performance improvement. That's because computers access hard drives much faster than a floppy. You'll notice dramatic improvement when you run programs which access the hard drive. That's right. Dramatic.

Consider price. Consider performance. Then consider future expansion options. If you wanted to purchase the least expensive hard drive you could buy, you certainly would not select SCSI. But if you are more concerned with performance and future expandability, any other hard drive system could never come close to meeting your expectations. We think the PC Enterprises Hard Disk Expansion System is the hands down choice when it comes to selecting a hard drive for the PCjr. Examine the features. We think you'll agree.

Original PCE Mass Storage Systems

Original PCE disk drive expansion systems use the PCE metal enclosure that snaps on top of the PCjr and leaves room for the Junior Drive Power Supply on the left side.

The Complete PCjr Hard Drive System is identical to the original except it uses an injection molded enclosure and comes with its own power supply. All mass storage systems featured in this catalog are still available as Original Junior Drive Systems for those who prefer our metal enclosure.

To purchase a mass storage system in our original enclosure, add a -1 to the PCE catalog number and add \$30 to the price (Sorry, but this system is more expensive to make).

If you already have one or more of our original PCE Junior Drive Systems, systems which come in our injection molded enclosure can still be used without disadvantage. The only disadvantage of the injection molded enclosure is it does not provide space to install the Internal Junior Drive Power Supply.

It took 36.5 seconds to load Wordperfect 5.0 from floppy diskettes, and only 5.4 seconds with our hard drive.

Actual Test Results					
Activity	360K Floppy Drive	RIM System (Uses the Modem Slot)	Racore Hard Drive System	PCE SCSI Hard Drive System	PC-XT Hard Drive System
Load Writing Assistant v1.01	18.8s	12.2s	12.0s	4.0s	4.5s
Load WordPerfect v5.0	36.5s	18.6s	18.3s	5.4s	6.0s
Screen Change	12.3s	5.6s	5.6s	4.3s	4.6s
Performance Benchmarks					
Norton Disk Index v4.50	4	3	2.1	1.9	
Average Seek	86.5ms	75.1ms	28.5ms	48.4ms	
Track to Track Seek	28.8ms	20.5ms	11.9ms	12.7ms	
Data Transfer Rate	???	26.9 KB/s	236 KB/s	253 KB/s	
Performance Index	821	893	3,458	2.8	

Notes:
 RIM - 20MB System ST225
 Racore - 20MB System ST225
 PCE - 80MB SCSI System ST1096N
 PC-XT - 40MB SCSI System ST157N
 Screen Change test described in detail on the jrAccelerator Performance page.

Performance benchmarks furnished by Coretest v2.4 except where noted. ??? indicates no result was furnished by the Coretest program (Perhaps the system was too slow for Coretest to consider results valid). All tests with JFCONFIG.DSK -T3 -V32 In CONFIG.SYS. FILES=20 used for WordPerfect tests.

Recommendation: Many people ask how large of a hard drive they should buy. You'll never have too much hard disk storage space, so add as much capacity as you can afford. Many software packages, including game software, will require megabytes of storage. DOS 5.0 requires 2.8MB. The table below shows the approximate number of 360K floppy diskettes that you'll be able to store on a hard drive.

20MB	55 Floppy Diskettes
40MB	110 Floppy Diskettes
56MB	155 Floppy Diskettes
80MB	220 Floppy Diskettes

Notice: Most hard drive manufacturers no longer make 20MB drives. As a result, the availability of this system depends upon our existing inventory of 20MB drives. Always call before ordering.

*Since most floppy diskettes do not use every last byte of storage on the diskette, and because cluster size may differ, the actual number of diskettes will vary.

The SCSI Advantage

Complete Hard Drive Systems from PCE now include the TMC850jr. This means you can add other SCSI peripherals, such as a CD-ROM, Floptical Drive, or Tape Backup without compatibility problems, and without purchasing additional sidecars. Just snap the new SCSI device on top of your PCjr, and connect a cable. Lower cost hard drive systems (MFM, RLL, IDE, etc.) do not offer this advantage!

One SCSI Host Adapter is all you Need!

All PC Enterprises mass storage systems use an industry standard Small Computer System Interface known as a SCSI (pronounced Scuz-zi) interface. Each SCSI device comes in its own enclosure that snaps on top of the PCjr.

The ST01jr™ and TMC850jr™ are SCSI host adapters specifically designed and manufactured for the PCjr by PC Enterprises. All you need is one host adapter to control multiple SCSI devices.

When you invest your money in any PC Enterprises SCSI System you're not making an investment in your PCjr—instead, you're investing in your future. That's because you'll have numerous expansion options if you keep your PCjr, and you'll still be able to use your SCSI devices if you ever purchase another computer.

Seagate's ST01™ and Future Domain's TMC850™ are SCSI host adapters designed to work with 8-bit computers that have a standard ISA bus. To use any SCSI mass storage device you purchase for your PCjr on another computer all you need is the appropriate SCSI host adapter for your new computer.

The TMC850jr is included with all Complete PCjr Hard Drive Systems, and it's also available separately for do-it-yourselfers and as a replacement part. The Future Domain chip set is also available separately for those who already have the PCE ST01jr and decide to upgrade.

Filler Panel



The right-hand side of our injection molded snap-on-top enclosure has an 'unfinished' look. When installed as the third level, a filler panel gives our chassis a finished look.

Catalog #69013 Price: \$9.95

Ontrack's Disk Manager™ Software



Allows you to use your entire hard disk drive with any version of DOS. Overcomes 32MB limitations without changing your DOS.

Catalog #85806 Price: \$49.95

PC-DOS 5.00 Upgrade Kit

Includes the usual DOS 5.00 upgrade kit, and also a special DOS 5.00 boot diskette modified to start and install DOS 5.00 on the PCjr. Special PCjr installation instructions also included. Any prior version of IBM PC-DOS, 512K, and hard drive required.

Catalog #86030 Price: \$89.95

PC-DOS 5.00 Upgrade Kit—installed on Diskettes

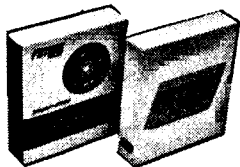
PC-DOS 5.00 normally requires a hard drive and special modifications to be installed on a PCjr. Purchase this kit if you want to purchase DOS 5.00 already setup to work with the PCjr and already installed on diskettes. You will not need to bother with software patches and special instructions. Start using DOS 5.00 immediately, without any fuss. Does not require a hard drive.

Catalog #86031 Price: \$89.95

Future Domain Chip Set

This is what you need if you currently have the PCE ST01jr host adapter, and you want to upgrade your host adapter to a TMC850jr. The Future Domain Chip Set supports hard drives, tape backups, CD-ROMs, WORMs, removable media devices, and optical disks. A complete list of supported devices can be obtained by calling or writing our customer service department. Contact PCE for upgrade information.

Catalog #10037 Price: \$49.95



Future Domain Disk Maestro Software
Controls, optimizes, and manages SCSI drives. Includes removable media support. DOS 3.30 required.

Catalog #85801 Price: \$89.95

Future Domain CD Rom Software
Supports High Sierra and ISO-9660 logical file formats.

Catalog #85802 Price: \$89.95

Future Domain Tape Backup Software

Cheyenne, ARCserve, Solo/Novell-compatible tape backup software.

Catalog #85803 Price: \$119.95

ST01 is a trademark of Seagate Technologies. TMC850 is a trademark of Future Domain Corporation. Disk Manager is a trademark of Ontrack Systems. PC Enterprises thanks Seagate Technologies and the Future Domain Corporation for providing the technical information and support necessary which has allowed PC Enterprises to offer similar products to PCjr owners. ST01jr and TMC850jr are trademarks of PC Enterprises. PC Enterprises is in no way affiliated with Seagate Technologies or the Future Domain Corporation. Product names are similar only to help you determine compatibility.

Two versions of our SCSI host adapter exist. The only difference is the chip set installed and jumper settings used.

ST01jr

When the Seagate 900 chip set is used, our SCSI host adapter is called the ST01jr. In this configuration, operation is identical to Seagate's ST01 SCSI host adapter.

Catalog #12525-1 Price: \$149

ST01 Host Adapter for Computers with an ISA Bus

Catalog #79032 Price: \$39

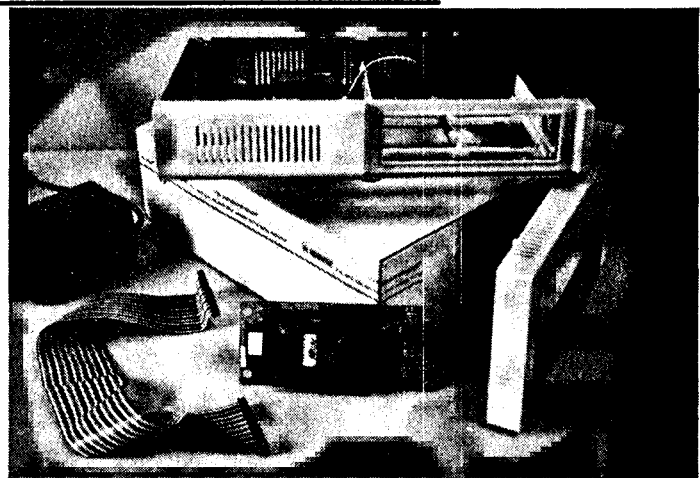
TMC850jr

When the Future Domain 950 chip set is used, we call our adapter the TMC850jr. In this configuration, it is compatible with the Future Domain TMC850 SCSI host adapter, because the TMC850jr uses the same SCSI controller chip and the same BIOS. The Future Domain chip set is more versatile than the Seagate chip set, but has always been more expensive. Until now. Volume purchasing now permits PC Enterprises to offer the TMC850jr at the same low price as the ST01jr.

Catalog #12525-2 Price: \$149

TMC850 Host Adapter for Computers with an ISA Bus

Catalog #79041 Price: \$89.95



New!

SCSI Device Installation Kit

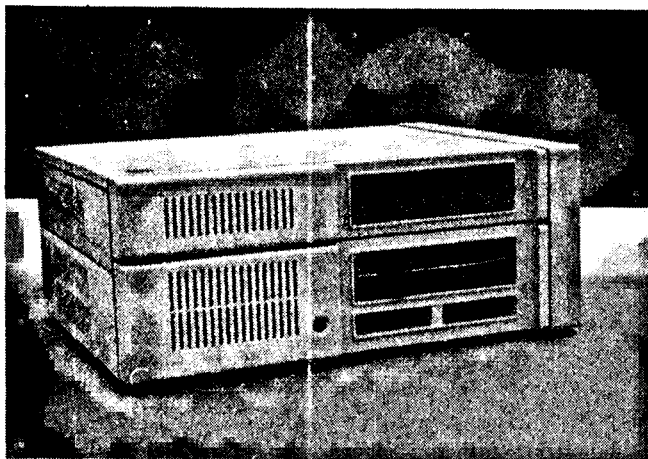
While our supplies last, you can purchase everything we provide with our Complete PCjr Hard Drive System, except the drive!

The SCSI Device Installation Kit includes our injection molded snap-on-top enclosure, power supply, TMC850jr, two-high sidecar case, cable, manual, and Ontrack Systems' Disk Manager™ Software. That's everything you should need to install your own SCSI hard disk drive.

Optional Future Domain device driver software, required for other SCSI devices, is available separately.

Catalog #10046 Price: \$199

SCSI Hard Drive Features



Easy to install

Just plug in a sidecar, snap the enclosure on top of your system, and connect two cables. Most people are using their new hard drive system within minutes after opening the box.

DOS Compatible

The usual DOS commands including SYS, FORMAT, FDISK, BACKUP, RESTORE, etc., will all work. So will other hard drive utilities designed to work with SCSI drives. In addition, all systems come with Ontrack's Disk Manager Software, so you'll be able to use your hard drive without upgrading your DOS.

Self Booting

Just leave the door to drive A open—then turn the computer on. Your PCjr will automatically load DOS from the hard disk drive.

Fast Access Time

Check the specs. Our drives offer access time specifications as fast as 15ms—and that's pretty fast.

Memory Mapped I/O

Many people ask about access time, but few realize the importance of whether a system is memory or I/O mapped. We're proud that our system is memory mapped. A PCjr memory cycle occurs on average every four clock periods. I/O cycles add two wait states to each and every cycle. Our controller therefore requires 33% less time to execute instructions than I/O mapped controllers. (Note: controllers which plug into the internal modem slot are I/O mapped).

Speed Up Board Compatibility

The jrExcellerator Speed up board accelerates memory cycle time without effecting I/O cycle time. This means if you use our Hard Disk Expansion System with the jrExcellerator, the performance of your hard drive gets even better. It also means even the jrExcellerator will not speed up hard drive systems which are I/O mapped.

Most Attractive

Our system snaps on top of your computer and looks great! A two-high sidecar case is also provided to enclose our SCSI Host Adapter. Competitors offer external systems which come in unsightly external cases and take lots of room on your desk.

Intelligent Controller

Our SCSI Host Adapter uses an intelligent SCSI controller. Not-so-intelligent controllers, also known as dumb controllers, require several instructions to accomplish even simple tasks. For example, intelligent controllers (such as ours) only take one instruction cycle to perform a write operation. Dumb controllers, regardless of whether they use cartridge or device driver software, take as many as three instruction cycles to do the same operation—and that means it takes three times longer!

No Cartridge Slots Required

BIOS support to make the system self booting is provided on the sidecar—not in a cartridge. This means all your cartridge slots remain available for other products.

Future Expandability

Our hard drive systems now include the TMC850jr—our SCSI Host Adapter that uses the Future Domain Chip Set. One TMC850jr is all you need to add up to seven SCSI (pronounced Scuz-zil) peripherals. SCSI peripherals presently available include hard drives, tape backup, CD ROM's, WORMs, removable media devices, floptical, and optical disks. This means if you purchase our Hard Disk Expansion System and later decide to add any of these other SCSI devices, you do not need to without purchase another host adapter!

PC Compatibility

All of our hard drives are SCSI devices. If you ever trade your PCjr in for another computer you'll have no trouble using this hard drive, or any other SCSI device you purchase from PCE on the other computer.

Our Compatibility Guarantee

Our system is fully compatible with all other PCjr products made by IBM, Quadram, Rapport, Racore, PC Enterprises and most other manufactures. In fact, we're so convinced that you'll be able to use our system without a hitch that we'll waive the usual restocking fee if you encounter a compatibility problem which we're unable to resolve.

We think the Junior Drive Hard Disk Expansion System is the undisputed best choice for all PCjr owners. Consider the performance and future expansion benefits of this system. Also remember, PC Enterprises is the PCjr support company that's going to be here long after all the others are gone. Try the system yourself and you'll agree. And of course, like all PC Enterprises products, this system is backed by our full year parts and labor warranty.

Adding Additional SCSI Devices is a Snap!



This is the cable adapter kit that allows you to easily attach a CD-ROM, Floptical, Tape Drive, and other SCSI device to your existing PCE hard drive system.

Just unplug the cable that attaches to your existing hard drive and plug in our cable adapter. Two connectors are provided. Connect your hard drive cable to the bottom connector and the new cable to the top connector. Then snap the new SCSI system on top of your hard drive!

Included with all PCE SCSI systems intended to be used with and existing SCSI host adapter.

New Product Announcement



You Asked For It... Now Here It Is!

For years now, thousands of PCjr owners have asked for a low cost PCjr Hard Drive System. Until now, PCjr hard drive systems were always more costly than internal hard drives for other computers because PCjrs require an additional power supply and enclosure.

Things have changed. PCjr owners no longer need to pay a premium for hard drive systems. PC Enterprises has obtained, at special close out prices, a limited supply of PCjr snap-on-top enclosures and power supplies.

The power supply was manufactured by IBM, and is ideally suited for use with this new system. The snap-on-top enclosure was designed by Racore Computer Products for their PCjr expansion products, which are no longer in production. This enclosure makes our new hard drive system more attractive than ever!

Best of all, our new system uses extremely fast industry standard SCSI hard drives and the PCE TMC850jr host adapter sidecar as featured on page 31 of this catalog. The TMC850jr is the fastest and most versatile hard drive controller ever made for the PCjr.

Unfortunately, we can't sell this system forever. We only have a limited number of enclosures and power supplies. Once gone, the system will be withdrawn from the market, or prices will be increased substantially. So hurry, very few PCjr owners will be able to take advantage of this offer!

Complete PCjr Hard Drive Systems As Low As \$395

Our Complete PCjr Hard Drive System includes absolutely everything that you'll need!

- Hard Drive
- Power Supply
- Snap-on-top Enclosure
- TMC850jr (SCSI Host Adapter)
- Signal Cable
- Manual
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to continue supporting the PCjr

Hard Drives are sold subject to availability and prices may fluctuate. Call to determine current pricing before ordering. Prices shown are valid as of the date this catalog went to press and may vary weekly. Complete systems include the TMC850jr, our SCSI host adapter, injection molded snap-on-top enclosure, two-high sidecar enclosure, power supply, transformer, cables, manual, and Disk Manager software.

SCSI Hard Drives and Systems					
Capacity	Notes	Bare Drive		Complete System	
20MB		#44007	\$195	#12534	\$395
40MB		#44009	\$225	#12530	\$425
52MB	17ms	#44012	\$245	#12533	\$445
80MB	15ms	#44011	\$325	#12532	\$525
105MB	17ms	#44021	\$425	#12549	\$625
120MB	15ms	#44022	\$450	#12550	\$650
212MB	12ms	#44024	\$695	#12551	\$895
340MB	14ms	#44025	\$1295	#12552	\$1495

Note: Included with all 32MB and larger systems is Ontrack Computer Systems Disk Manager Software (a \$49.95 value). This software allows you to utilize the full capacity of your SCSI hard drive with any version of DOS 2.10 or later.

New Product Announcement



High Performance Removable Cartridge Hard Drive Systems

The Junior Drive Removable Cartridge Hard Drive System is a high performance hard drive system that provides unlimited storage capacity because it uses cartridges.

Cartridges allow individual users to copy all their software onto the hard drive without running out of space. In addition, each cartridge has a write protect feature, making this system ideal for anyone who shares software with others and is concerned about virus protection.

The system is based on proven Winchester technology and a rugged, field-proven, transportable 5.25" data cartridge.

The Junior Drive Removable Cartridge System incorporates the industry standard Small Computer System Interface (SCSI). It works with the PCE SCSI Host Adapters for the PCjr, and also with 386 and 486 computers (optional host adapter required). In other words, if you ever decide to use another computer you can still use your Removable Cartridge Hard Drive!

44MB Removable Cartridge Hard Drive System

Purchase this system to use 44MB cartridges. Comes complete with everything you need. The hard drive is provided in our snap-on-top enclosure, and can therefore be installed in fewer than five minutes, without special tools. Also includes one cartridge, a power supply, TMC850jr, two-high sidecar, cable, software, and illustrated installation and operation manual. Additional cartridges are available separately.

Catalog #12535 Price: \$775 **SALE PRICE: \$695**

80MB Removable Cartridge Hard Drive System

Same as 44MB system except uses 88MB cartridges.

Catalog #12536 Price: \$995 **SALE PRICE: \$895**

Additional 44MB Cartridges

Catalog #55014 Price: \$95

Additional 80MB Cartridges

Catalog #55015 Price: \$145

Note: If you already have the ST01jr and you decide to add this system, you'll need Seagate BIOS Version 3.2 or later. The Seagate BIOS is a plug-in device located on your ST01jr. To upgrade to Version 3.2 order Catalog #59316-3, which is \$9.95.

- Includes one Cartridge
- Field-proven technology, more than 700,000 drives shipped
- Industry standard half-height 5.25" form factor
- 20 millisecond average seek time
- 9.32 millisecond average latency
- Fully embedded SCSI controller
- 1:1 Interleave
- Self-test diagnostics
- MTBF of 60,000 hours
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Replacement Drives

Bare drives are available if you do not need a power supply, controller, cable, or chassis. Just the drive! To install one of these drives in another computer you may also need a host adapter and cable.

44MB Internal Drives

Catalog #44014 Price: \$390

88MB Internal Drives

Catalog #44013 Price: \$529

New Product Announcement

CD-ROM Drives

No other medium promises to meet the needs of both publishers and consumers as the CD-ROM disk. When you purchase software on CD-ROMs you can get a miraculous amount of information—the equivalent of about 300,000 pages of printed material. That's more information than you could fit on thirty 20MB hard drive systems!

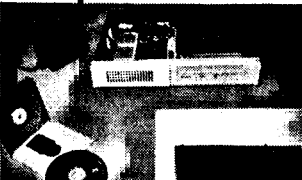
In addition, your software can now produce music, voice, and other sound effects with CD quality audio! Games will actually talk to you, and they'll sound like people, not computers!

Our CD-ROM drives are fast. Real fast! With an access time specification of 340ms, the mechanism is among the fastest on the market today!

The system incorporates the industry standard Small Computer System Interface (SCSI) and therefore works with the PCE TMC850jr—our SCSI Host Adapter (Future Domain Chip Set required).

Two systems are available:

Complete CD-ROM System



This system comes complete with everything you'll need. The CD-ROM drive is provided already mounted in our snap-on-top enclosure and can therefore be installed without special tools in just a few minutes. Includes our SCSI host adapter, the TMC850jr, power supply, two-high sidecar enclosure, Future Domain CD-ROM device driver, Microsoft CD-ROM extensions, cable, caddy, and illustrated manual.

Complete CD-ROM System Only

Catalog #12537 Price: \$695

Complete CD-ROM System with CD Value Pak 1

Catalog #12553 Price: \$825

CD-ROM System less TMC850jr



Purchase this system to add a CD-ROM drive if you already have the TMC850jr. Includes everything you'll need to install the CD-ROM drive as your third (or higher) level. The system comes with the CD-ROM drive, snap-on-top enclosure, power

supply, Future Domain CD-ROM device driver, Microsoft CD-ROM extensions, cable, cable adapter, caddy, and illustrated manual.

CD-ROM System less TMC850jr

Catalog #12554 Price: \$595

CD-ROM System less TMC850jr with CD Value Pak 1

Catalog #12555 Price: \$725

DOS 3.0 or later required. Customers who already have the ST01jr host adapter can convert their ST01jr to a TMC850jr. Contact PCE Customer Service for details.



- 340ms Access Time
- 150K bps Data Transfer Rate
- Audio Output Jack for Headphones or External Speakers
- 30,000 hours Mean Time Between Failures
- Rear Panel Audio Output Jack (Game-Master Compatible)
- Front Panel Volume Knob
- Sony Compatible Caddy

Special CD Value Pak 1*

Illustrated Encyclopedia* (Grollers)

21 Volumes

Thousands of pictures and maps

Hundreds of sounds

Reference Library

Spelling
Thesaurus
Dictionary
Quotations
Desk Reference
History:
Business Listing

Spell check words
Find synonyms and antonyms
170,000 definitions
Thousands of quotes by alpha/topic
Facts, figures, resources
Dictionary of 20th century history
100,000+ addresses/phones

GamePack II

Chessmaster 2100
Puzzle Gallery
Backgammon
Gin King
Loopz
Bruce Lee Lives

Life and Death
Checkers
Cribbage King
Robot Tank
Beyond the Black Hole

*Most programs run on a PCjr with 512K. Some require 640K. Encyclopedia pictures and maps require VGA. CD-Audio only requires a Game-Master Sidecar, optional speakers, or headphones.

New Product Announcement

21MB Flopticals Work with 720KB and 1.44MB Diskettes Too!



Here's a Junior Drive System that meets all your storage needs. It provides the speed, storage capacity, and convenience of a removable cartridge hard drive system and also a SCSI tape backup system. But that's not all. This amazing system lets you use 720KB and 1.44MB floppy diskettes too!

Imagine copying fifty-six 360K diskettes onto one 3½ inch diskette! If you own an IBM PC-XT, or a clone, this may never be more than a dream. But if your computer is a PCjr the dream comes true when you add the Junior Drive Floptical System!

The Floptical System provides 65 millisecond hard drive performance and unlimited storage capacity. In addition it is compatible with 720KB and 1.44MB diskettes. Best of all, the price is very easy to justify. If you were to purchase an external removable cartridge hard drive system, it alone would sell for \$695. And an inexpensive SCSI tape backup system is over \$1000. Then consider the cost of a high density floppy disk drive and controller card. The Junior Drive Floptical System makes a lot of sense!

The Junior Drive Floptical System incorporates the use of the industry standard Small Computer System Interface (SCSI). It works with the TMC850jr, the PCjr SCSI host adapter, and also with 386 and 486 computers when the TMC850MFL, available from Future Domain, is used. In other words, if you ever purchase another computer you can still use your floptical drive!

The support of some of the biggest names in the industry has been enlisted to bring you this floptical drive and 21MB floptical diskettes. A partnership agreement has been signed with Matsushita Kotobuki Electronics (MKE) to manufacture the floptical drive. As the world's largest manufacturer of VCRs and one of the largest makers of disk drives, MKE has the resources necessary to deliver excellent drives to a ready PCjr market.

3M and Hitachi Maxell have also joined forces to manufacture 21MB floptical diskettes. Their participation ensures the price of 21MB diskettes will fall rapidly, and that top quality floptical diskettes will be readily available through their worldwide distribution networks.

Options

If you currently have one floppy drive and do not have a hard drive we recommend adding the Complete Junior Drive Floptical System. This system snaps on top of your PCjr and allows you to boot from either drive. As an alternative, you can replace one of your existing floppy disk drives with a Replacement Drive System, however doing so may leave you without a drive to read your existing 360KB diskettes.



Hard Drive Users

Hard drive users may prefer to replace their existing floppy drive, although a floptical can be added just as easily. Once installed, you'll be able to back up your hard drive in just a few minutes and with only a couple of diskettes!

All systems require the TMC850jr, our SCSI host adapter, and Floptical BIOS. PC-DOS 3.30 or later is required to use 1.44MB diskettes. PC-DOS 3.20 or later required for 720KB diskettes. Systems are available with and without the TMC850jr.

Complete Snap-on-Top Floptical System

This system comes complete with everything you'll need to "add" a floptical drive. The drive is provided already mounted in our snap-on-top enclosure and can therefore be installed without special tools, and in just a few minutes. Includes a power supply, TMC850jr with floptical support BIOS, two-high sidecar, cable, software, and illustrated manual.

Catalog #12538 Price: \$789

Floptical System less TMC850jr



Allows you to add a floptical drive if you already have our SCSI Hard Drive System. Everything you'll need is included to install the floptical drive as your third (or higher) level. The system comes with the floptical drive, snap-on-top enclosure, power supply, the floptical BIOS, cable adapter, filler panel, and illustrated manual. Diskettes available separately.

Catalog #12545 Price: \$689

Complete Floptical Replacement Drive System

Replace an existing drive with a floptical drive (see photo above). Includes everything you'll need. The floptical drive is provided in a special PCjr mounting frame. Also includes the TMC850jr with floptical support BIOS, one-high sidecar, cable, software and illustrated manual.

Catalog #12546 Price: \$759

Floptical Replacement System less TMC850jr



Purchase this system if you already have our SCSI Hard Drive System and you want to replace your existing drive with a floptical. Includes the floptical drive and special PCjr mounting frame, floptical support BIOS, cable, cable adapter, and everything else you'll need.

Catalog #12547 Price: \$659

Customers who already have the ST01jr host adapter can convert their ST01jr to a TMC850jr. Contact PCE Customer Service for details.

New Product Announcement

Tape Backup – External Systems now Available!!

External Tape Backup Systems

Every PCjr user who installs a hard drive system accumulates a tremendous amount of software and data. Until now, there has always been one problem – backing up the hard drive. A single backup often takes several hours and can require hundreds of diskettes!

Nevertheless, frequent backups are very important. A hardware failure, or uninvited virus that infects your computer, can make your hard drive un-readable. Even a power glitch or momentary failure that occurs while your computer is updating the hard drive, can cause data loss.

Our External Tape Backup System is very convenient to use. Just get the backup started, then go away while the backup proceeds without your attention.

Two models are available. The 40MB system provides 40MB of formatted storage on a standard length tape. The same system provides 61MB of storage when an extended length tape is used. The 80MB model provides 83MB of storage with standard length tapes and 125MB with extended length tapes.

- 40MB and 80MB models are available
- Easy to install. Just plug the cable into your printer port then run the tape backup software provided
- Portable. One system is all you need to backup many computers
- Data compression can be use to get approximately twice as much information on each tape
- Uses compact 3.5 inch form factor data cartridges readily available from 3M and numerous suppliers
- Comes complete with everything you need to connect to your existing printer port
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Manufacturers Warranty



External Systems

Adding a tape drive has never been this easy! Our new external tape drive plugs into your PCjr's parallel printer port. There are no interface cards to install. You don't even need to remove your PCjr's system lid! Everything you'll need except the tape is included.

**40MB External
Tape Backup System**
Catalog #12540 Price: \$399

**80MB External
Tape Backup System**
Catalog #12541 Price: \$469

The amount of data you can backup, and how long a backup takes, will depend upon which system you purchase and which tape you use. In addition, the tape backup software provided always gives you the option to compress data. When you use data compression, you'll be able to get approximately twice as much information on each tape (as compared to the numbers below), however backup time will be increased slightly.

It takes about one hour to format an extended length tape (regardless of which system is used). This means the 40MB system formats 61MB in one hour while 80MB systems format twice as much (125MB) in the same amount of time. Backup times are comparable.

Two tapes are available for each system:

DC2000 Mini Data Cartridge
(Standard Tape – 205 ft)
Catalog #55017 Price: \$19.95

DC2120 Mini Data Cartridge
(Extended Tape – 307.5 ft)
Catalog #55018 Price: \$24.95

PCE System	DC2000 Standard Tape	DC2120 Extended Tape
Catalog #12540 40MB System	40MB	61MB
Catalog #12541 80MB System	83MB	125MB

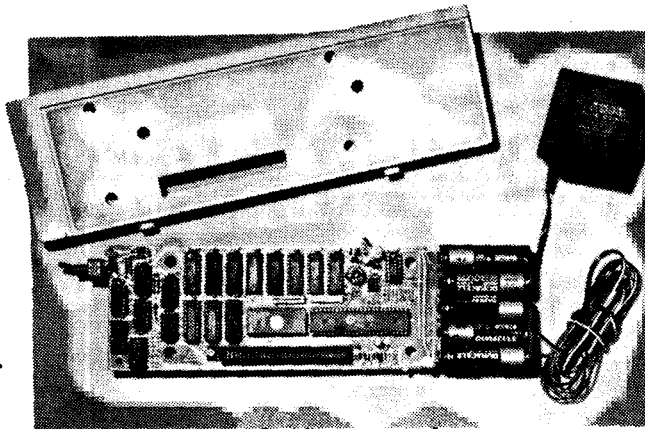
Requires DOS 3.00 or higher

Turbo-Drive

The Performance Index sums things up nicely.

A PCjr running at 9.54 MHz with a Turbo-Drive blew the doors off an IBM PS/2 Model 70 with a 386 microprocessor that was running at 16 MHz!

No wonder why our PCjr loads WordPerfect 5.1 in just over 2 seconds!



AUTOEXEC.BAT file, and start your program without even having a diskette in your floppy drive! And all of this can take place in just a few seconds.

Installation of Turbo-Drive is also a breeze. Just connect Turbo-Drive like you would any other sidecar. And don't worry if you've already expanded your system with other products because Turbo-Drive is compatible with all other IBM, PC Enterprises, and most other PCjr expansion products. And Turbo-Drive can be connected without adding another power supply. It comes with its own power transformer which plugs into any household AC outlet. And because a Turbo-Drive contains no moving parts, it's inherently much more reliable than mechanical disk drives.

Turbo-Drive adds one Megabyte (1024KB) of solid state diskette storage to your system. Each Turbo-Drive comes with five NiCad batteries neatly hidden inside the sidecar. These batteries protect your data even during power outages. If the AC power should ever fail, the batteries can keep your data alive for up to twelve hours! And when the AC power is restored, the built in charging circuit recharges your batteries automatically.

So, if you've been thinking about expanding your PCjr, the days of waiting for programs to load from your drive can be over. You don't have to wait for the disk drive light to go out before your program continues. With a Turbo-Drive connected to your PCjr your system can even out perform a 16 Megahertz 386! Ask yourself whether you'd like to speed up your computer when it accesses the disk drive. If the answer is yes, treat yourself to a Turbo-Drive today! This is one PCjr product that could make your PCjr more unique than all the others combined.

Actual Test Results				
	Floppy	Turbo-Drive		
	Basic Enhanced Model PCjr (840K)	4.77 MHz 8088	V20	9.54 MHz V20
Load Writing Assistant v1.01	18.8s	3.0s	2.8s	1.7s
Load WordPerfect v5.0	36.5s	4.5s	3.2s	2.2s
Screen Change	12.3s	3.9s	3.4s	2.2s
Performance Benchmarks	PS/2 Model 70			
	386/16 MHz			
Norton Disk Index v4.50	6.7	6.6	10.6	17.1
Average Seek	28.9ms	.4ms	.4ms	.2ms
Track to Track Seek	16.9ms	.4ms	.4ms	.2ms
Data Transfer Rate	6712 KB/s	302 KB/s	484 KB/s	793 KB/s
Performance Index	66	131	132	264

Benchmarks furnished by Coretest v2.40 except where noted. All tests with JRCONFIG.DSK -T3 -V32 in CONFIG.SYS. FILES=20 for WordPerfect tests. Screen Change test described in detail on the jrAccelerator Performance page.

Here's a new and innovative computer product that adds lots of features as well as performance to your PCjr. Introducing Turbo-Drive, the solid state disk drive that will revolutionize the way you use your computer.

That's because Turbo-Drive is lightning fast. Consider the specifications. The access time of hard drive is measured in milliseconds with a twenty millisecond hard drive being considered extremely fast. Turbo-Drive accesses its information in microseconds, hundreds of times superior to hard drives. And comparing our Turbo-Drive to a floppy drive is like comparing a Ferrari to a snail.

That's why programs load from Turbo-Drive with astonishing

speed — almost instantaneously. In fact, many programs load and run so quickly their entire personality changes. Your programs will become more friendly because they will no longer keep you waiting around while they read the disk drive. More importantly, Turbo-Drive looks like a hard drive to software, so "install" and "setup" utilities that come with software that you purchase will work with your Turbo-Drive just fine. You'll be able to install software on a Turbo-Drive exactly as you would if you had a hard drive.

And Turbo-Drive is also self-booting. That's a feature which until now was reserved strictly for hard drive users. This means your PCjr can start DOS, load your CONFIG.SYS file, install your Memory Management software, run your

Special Sale - Save 25%
1MB Turbo-Drive with Battery Backup
 Catalog #14043 Regular Price: \$325
Now Only \$245

Sale price valid for a limited time only. Call to verify price before ordering.

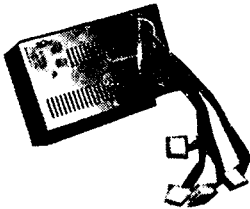
Most PCjr's came with a seven inch long power supply that provides up to 33 Watts. Other PCjr's came with a ten inch long supply that delivers 46.5 Watts. The only way to tell which power supply you have is to remove your PCjr's system lid and check.

Power Supplies

A power supply is a plug in product that provides the energy required for your PCjr and for all your PCjr add-on accessories to operate. Each time you attach a new add-on product to your PCjr, the new product takes the power it needs from the computer's power supply. If your expansion products try to take more power than the power supply can produce, the power supply will fail and you'll need to service your PCjr. In most cases, the item that fails will be the Power Transformer (also referred to as the black brick), or the internal power supply card itself.

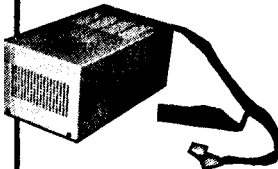
Many people who suspect their computer may be close to running out of power continue to expand anyway. If their power supply subsequently fails, they then replace it with one of our Junior Drive Power Supplies.

Internal Junior Drive Power SupplyPage 43



Already have one of our original Junior Drive Enclosures snapped on top of your PCjr, and now you'd like to replace your existing power supply with one that's bigger and more powerful? This power supply replaces the original and produces 150 Watts—enough power to supply your PCjr system unit and all the options you're ever likely to add.

External Junior Drive Power SupplyPage 44



Want to replace your existing power supply with one that powers for your entire system, but you don't already have one of our original PCE Junior Drive Enclosures snapped on top of your system. All you need is this power supply and a little space on your desk.

IBM Power Expansion AttachmentPage 42



Instead of replacing your existing power supply, would you prefer to add a second power supply that can power all the sidecars you're ever likely to add? Be sure to purchase this product before an overload causes your existing power supply to fail!

Recommendation: Just as this catalog was about to go to press the prototype of our new jrSidecar Parking Garage arrived. While the product still requires slight refinements, we have included the information below. The Parking Garage provides the means to add sidecars without cluttering up your desk. It also adds four cartridge slots and has provisions to add an internal power supply and power distribution system.

If you do not purchase the Parking Garage, the preferred way to add power is by installing the Internal Junior Drive Power Supply. This product plugs into the same connector as your existing PCjr power supply but it's two inches taller. That's why you must have our original Junior Drive Enclosure snapped on top of your PCjr to use this product. The enclosure provides the space required by the taller power supply.

Consider the External Junior Drive Power Supply or the IBM Power Expansion Attachment if you do not already have our original snap-on-top enclosure. The IBM Power Expansion Attachment offers the least expensive approach to adding power to the PCjr. This is the recommended power supply for most PCjr users (Power Attachments can also be mounted inside the jrSidecar Parking Garage).

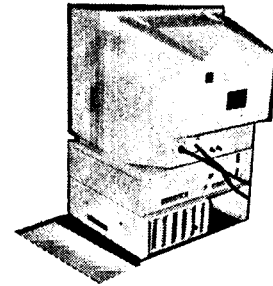
"Underground Parking" for your Sidecars



Front View of PCjr with six sidecars installed internally

The jrSidecar Parking Garage allows you to neatly install up to eight normal height sidecars underneath your PCjr—out of sight and out of your way.

Your PCjr becomes three inches taller, and you recover lots of space on your desk. And your PCjr looks better than ever, but good looks are only the beginning!

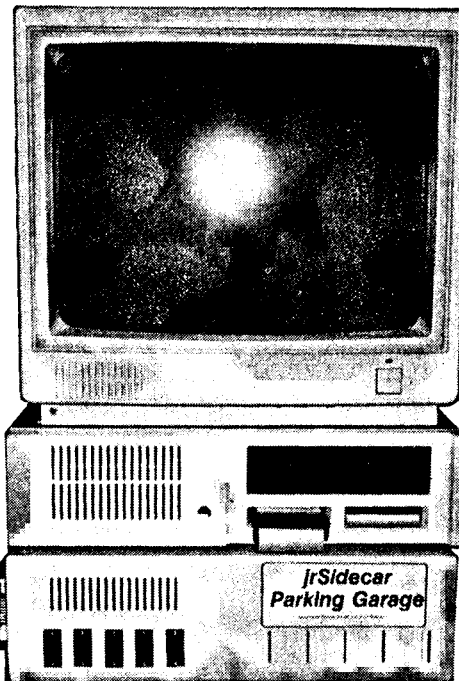


Rear view of PCjr with six sidecars installed internally

Standard Features

- Space for Eight sidecars (six with power distribution option installed)
- Adds four cartridge slots
- Internal speaker
- Securely attaches underneath the PCjr System Unit

Note: If your PCjr has one or more snap-on-top disk drive systems the jr-Sidecar Parking Garage is designed for your PCjr too! Full height sidecar which are already attached remain on the outside of the Parking Garage. The garage allows sidecars to be "parked" inside or outside. When a full height sidecar is used simply keep a normal height sidecar on the outside of the Parking Garage so the PCjr keeps its rectangular appearance.



Adds FOUR Cartridge Slots!

Optional Features

- Power distribution system provides on/off switches for your PCjr, monitor, printer and other accessories.

- Built-in surge protector

Power Supply Options

- IBM Power Attachment
- 230 Watt power supply

Power distribution option provides switches for your PCjr, monitor, printer, modem, and other accessories... PLUS surge protection!

Coming Soon! Call to determine pricing and availability. Photographs are of actual prototype. Production units may vary.

Do I Need Another Power Supply?

Before you can determine which expansion products you can add, you must first determine which power supply card you have. Most PCjr's came with a seven inch long 33 Watt power supply. Other PCjr's have a 10 inch long power supply which provides 46.5 Watts. If you don't know which supply came with your PCjr, remove your PCjr's lid and measure the overall length of the power supply (This is the computer board that has the PCjr's On/Off switch attached to it).

The PCjr power supply produces power at three different voltages: +5V, +12V, and -Something. (Note: We say -Something because the shorter power supply produces -6 Volts and the long power supply produces -12V instead). The -Something voltage does not go to the sidecar expansion bus and it is therefore not normally used by PCjr add-on devices. For these reasons you only need to be concerned with +5V and +12V requirements.

Refer to Table 1 to determine how much power your PCjr should have available for add-on products before you add any expansion products. Be careful not to exceed either of these numbers or damage will occur!

Note: IBM only specifies available power with their Internal Modem installed. Since most PCjr users do not use the IBM Internal Modem, we added the specified maximum power consumption of the IBM Internal Modem to the specified power available for other expansion products to come up with the figures in table 1.

Before we continue, we must discuss two other PCjr products and how they work. The IBM Power Expansion sidecar and the Racore Drive II Enhancement System. If you have an IBM Power Attachment installed, it provides power for all products plugged into its right hand side. It does not provide any power to the PCjr itself, or to any PCjr options installed to the left side of the Power Expansion sidecar. Consequently, consider the power requirements of products plugged into an IBM Power Attachment separately. Racore and Quadram Drive II Enhancement Packages also provide additional power to the side bus—exactly the same way as the IBM Power Attachment. The amount of additional power provided by these systems will vary depending upon which Racore power supply you use. (Rapport systems which use a 3 wire power supply do not provide any additional power to the side bus).

Now refer to the Power Requirement Worksheet. Place a check mark in column A adjacent to each product that you currently use. Next, circle the associated +5 and +12 power requirements, then total up the two columns. This is the approximate power the add-on products will need. Now, compare what's needed to what your power supply can produce (Table 1).

It's important to understand these figures are based upon measurements made on products in our laboratory and that all products are not identical. The actual power used by your products may be higher or lower than what's indicated. All figures published in this worksheet were carefully determined and are believed to be accurate, however this worksheet is offered strictly for use at your own risk. We strongly recommend you include an adequate safety factor to avoid problems. Our calculations seem to indicate that a 1 Watt safety factor should be adequate. Refer to the example below.

Example: Let's say you have the 7 inch power supply. Table 1 indicates your PCjr has 3.5 watts of +5 volt power available. If you are using a 1024K Megaboard, IBM Parallel Printer Attachment, 360K Junior Drive II System, jrBus-Mouse, 101 Keyboard, two joysticks and a jrExcellerator, the worksheet indicates your add on products are consuming 1.75 Watts—leaving another 1.75 Watts still available. If you use the 1 Watt safety factor it means you will limit future expansion to .75 Watts. If you attempt to install our Display-Master VGA Sidecar you would use up every last bit of the published available power and therefore would not have any safety factor. This means the VGA sidecar may or may not overload your system's power supply.

Power Available Before Expansion (Watts)
Table 1

Power Supply	+5.0V	+12.0V
IBM's 7 inch PCjr Power Supply	3.5W	.6W
IBM's 10 inch PCjr Power Supply	11.0W	6.6W
IBM Power Expansion Attachment	15.0W	4.0W
PCE Junior Drive Power Supply	60.0W	52.0W

Power Requirement Worksheet (All figures in Watts)	A	+5.0V	+12.0V
Memory Expansions	✓		
PCE 192K Internal Memory Card		*	0
PCE 512K Memory JrSidecar		.35	0
PCE 1024K Megaboard Sidecar		.55	0
IBM 128K Memory Expansion		.60	0
IBM 512K Memory Expansion		.75	0
Microsoft jrBooster (512K)		1.10	0
Tecmar jrCaptain (512K)		*	0
Floppy Drives			
PCE Junior Drive II 360K System (Energy Efficient Mode)		.25	0
PCE Junior Drive II 360K System (Daisy Chain Mode)		.25	4.5
PCE Junior Drive II 720K System (Energy Efficient Mode)		.25	0
PCE Junior Drive III 720K System (Daisy Chain Mode)		.25	1.8
PCE ST01jr (SCSI Sidecar)		1.30	0
3.5" SCSI Hard Drive		6.80	9.5
5 1/4" SCSI Hard Drive		3.80	24.2
Mice			
Mouse Systems Optical Mouse		.25	0
PCE jrBus-Mouse		.05	0
Modems			
IBM 300 Baud Internal Modem		.65	.2
PCE 2400 Baud Internal Modem		.55	.3
External Modems		*	0
Cartridges			
Configuration Plus		.70	0
Combo v2, or Quicksilver		.15	0
Cartridge Basic, Combo v1 Keyboard Buffer, or jrVideo		.10	0
Other			
IBM Parallel Printer Attachment		.60	0
IBM Speech Attachment		.35	.4
IBM or CH Products Joystick		*	0
Racore Keyboard Adapter		.45	0
Racore Drive II Enhancement Pkg		0	0
PCE 101 Keyboard		*	0
PCE jrExcellerator		.30	0
PCE Turbo-Drive		*	0
PCE Display-Master VGA Sidecar		1.75	0
Total Power Required			

*These items use so little power that they could almost always be added without causing a problem. Also, the Tecmar jrCaptain actually uses about 1.8 Watts of +5 Volt power, but it comes with its own power supply.

IBM Power Expansion Attachment



If your PCjr has the ten inch long PCjr Power Supply, your system has 11 Watts of +5 Volt power available for expansion products. While that's plenty of power for most sidecars, those who have the seven inch power supply only have 3.5 Watts available.

Each time you add expansion products to your PCjr, the available power is decreased for each item you add by the amount shown in the first column of Table 1 (see page 41).

When the options you have attached consume more power than the PCjr's power supply can provide, an overload condition occurs. This means the power supply tries to "put out" more power than it was designed to provide. If allowed to operate in an overload condition, your PCjr power supply may continue to operate for seconds, minutes, hours, or days—but eventually, if the overload continues, the power supply will fail and require service.

The IBM PCjr Power Expansion Attachment is a product which supplies additional power for your PCjr add-on products. It comes in a PCjr sidecar. Also included is its own power transformer (which is interchangeable with the "black brick" power transformer that came with the PCjr).

IBM Power Attachment

Catalog #79009

Price: \$69.95 **SALE PRICE: \$49.95**

To install the Power Expansion Attachment just plug it into the right side of your PCjr. Once installed, other PCjr sidecars such as Memory, Printer, Display, and Speech Attachment sidecars, can be plugged into the Power Expansion sidecar. Sidecars plugged to the righthand side of the Power Expansion Sidecar receive their power from the Power Expansion Attachment. Sidecars plugged to the left of the Power Expansion continue to receive their power from the supply inside the PCjr.

If you have already added at least one PCjr sidecar, the Power Expansion Attachment is a fast and simple way to add additional power. If your PCjr has the short (seven inch) power supply, and you haven't already replaced it with one of our 150 Watt Junior Drive Power Supplies, don't let this opportunity pass you by!

Regardless of which power supply you use, the Power Expansion Attachment allows you to add adequate power for all the PCjr sidecars you're ever likely to add.

Specs

15 Watts @ +5V
4 Watts @ +12V
.3 Watts @ -12V

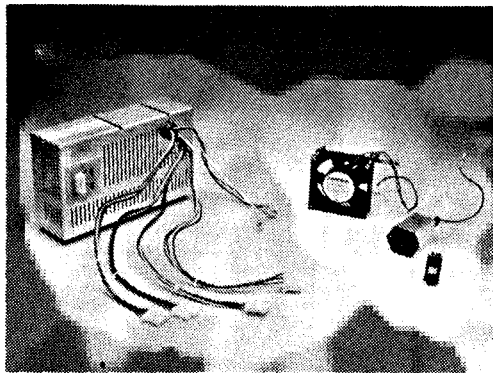
The Internal Junior Drive Power Supply

Install our mighty Junior Drive Power Supply and your PCjr will have all the power that it ever needs! You'll be able to add additional disk drives and other expansion products without concern as to whether additional power will be needed.

The PCjr only came with a 35 Watt power supply. The Junior Drive Power Supply replaces that feeble power supply with a powerful 150 Watt supply.

That's why with the Junior Drive Power Supply installed, it's not likely that you'll ever need to worry about power again. You'll have enough power to add as many sidecars as you want. As many floppy drives. And probably all your hard drives, tape drives, and CD ROM drives too!

Your computer is now powered from a single power supply which means it can be turned on and off with a single switch. And



there are no unnecessary cables to clutter your desk or bulky black boxes to get in your way.

Unfortunately, space limitations inside the PCjr cabinet prevent you from using the Junior Drive Power Supply unless our original Junior Drive Expansion Chassis is also installed as your first snap-on-top expansion product.

(Note: Our new Junior Drive Systems do not use the original snap-on-top enclosure. Instead of pro-

viding space for a power supply they come with their own power supply).

The Junior Drive Power Supply includes a power cord as well as a fan, mounting bracket, power receptacle, and ON/OFF switch which all mount in special cutouts provided in the original Junior Drive Expansion Chassis.

If you already have a Junior Drive II System which uses our original snap-on-top enclosure, you can install a Junior Drive Power Supply as long as your expansion chassis has cutouts for the power receptacle and ON/OFF switch.

If for any reason you cannot install our Internal Junior Drive Power Supply, purchase our External Junior Drive Power Supply instead!

Catalog #12524 Price: \$99

Power Transformers for PCE High Density Junior Drive Systems

All PCE 1.2MB, 1.44MB, and 2.88MB Systems are designed so they can be powered by the PCjr itself — or from an external plug-in-the-wall type power transformer.

If you purchase a PCE High Density Junior Drive System you can purchase a universal type plug-in-the-wall power transformer at your local electronic supply store, or purchase this product from PCE. What you need is a 9V AC transformer capable of delivering 800MA.

Installation Note: If you purchase an external transformer be sure the Power Y cable provided with your system is first disconnected from the PCjr power supply!

Catalog #53806 Price: \$19.95

Does PC-DOS 5.00 Run on the PCjr? You Bet it Does!

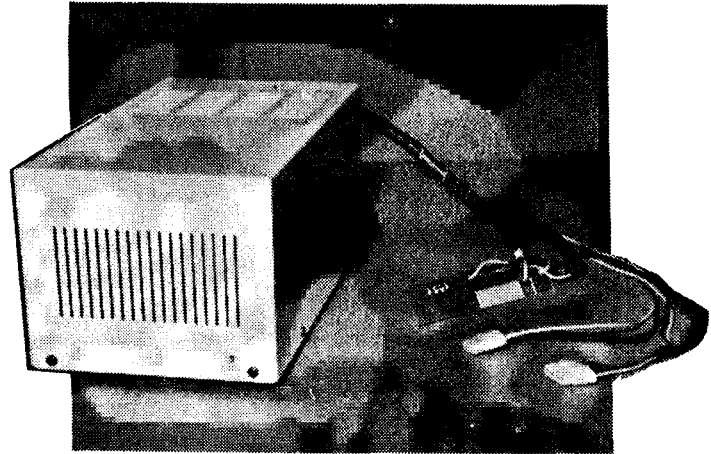
PC-DOS 5.00 is IBM's newest DOS which has received some raving reviews! New features include built-in help screens for all DOS commands, UNFORMAT and UNDELETE commands, virtually unlimited hard drive partition size, and a command line history buffer.

To use PC-DOS 5.00 on a PCjr you'll need a hard drive with at least 2.8MB of disk space free, 512K of conventional memory, and either the PC Enterprises Compatibility Cartridge or the PC-DOS 5.00 disk based patches found on the PCE Utility Disk.

Note: PCjr users already using a jrExcellerator Speedup Board, Display-Master VGA Sidecar, or Racore/Quadram Drive II Enhancement Package, can use most DOS 5.00 features without anything else after adding STACKS = 0,0 to the CONFIG.SYS file.

The External Junior Drive Power Supply

**Powers
the PCjr and
All Add-on
Accessories
with one
Switch!**



Until now PCjr users who wanted to replace their original PCjr power supply with a more powerful supply could not do so unless they first added a Junior Drive II System.

Things have changed. Now all PCjr users can power their PCjr with a single power supply that doesn't require they purchase anything else.

Once installed, the new External Junior Drive Power Supply provides 150 Watts of power – and this should be plenty for all the sidecars and disk drives that you'll ever need.

The new External Junior Drive Power Supply comes in its own all metal case which is attractively styled and painted to match your PCjr.

On the rear of the power supply's case you'll find a single on/off switch that you'll use to operate the PCjr and all your plug in add-on accessories.

A power cord provided plugs directly into any AC outlet (that's right, you can get rid of *all* your black brick power

transformers, because you won't need them anymore!).

A cable connects from the power supply to the power supply connector inside the PCjr. This cable also provides connectors for the PCjr's internal fan and disk drive.

Connectors for three additional floppy or hard disk drives are also supplied. But if you want to add more than three drives you can do so with optional power Y cables.

While the External Junior Drive Power Supply was specifically

designed for PCjr users who do not already have a PC Enterprises Junior Drive enclosure which snaps on top of the PCjr, its so easy to install that all PCjr users may prefer this power supply to any other.

**External Junior Drive
Power Supply**
Catalog #12527 Price: \$139.95

Racore, Rapport, and Quadram Users

If you presently own a Drive II Enhancement Package sold by one of these companies, you can also use PC Enterprises External Junior Drive Power Supply.

To use the External Junior Drive Power Supply to power your Drive II Enhancement Package, you also need the sideboard cable adapter. If you also have a Racore Hard Drive you can use the External Junior Drive Power Supply to power your hard drive too, but you'll need the Hard Drive Cable Adapter.

Sideboard Cable Adapter
Catalog #22520 Price: \$9.95

Hard Drive Cable Adapter
Catalog #22521 Price: \$2.95

- Provides 150 Watts—Enough power for all the Sidecars, Floppy Disk Drives, Hard Drives, and other Products that you'll probably ever need
- Typical Five Minute Installation
- Does not require our Junior Drive System Enclosure which Snaps on Top
- Powers the PCjr and all PCjr Add-on Accessories with one switch
- Attractively Designed and Styled to match the PCjr
- Designed to Sit Conveniently on your desk to the left side of the PCjr compatible with all PCjrs and all other PCjr add-on products
- Recommended alternative to replacing your existing power supply (black brick) transformer, or Racore Power Supply
- Does not use any External Transformers
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

The Enhanced Model PCjr came standard with Enhanced-CGA (Enhanced-CGA is referred to as PCjr-CGA throughout this catalog).

Video

Today, EGA has replaced CGA as the most common display standard, and is therefore supported by almost every software product you can buy. VGA is gaining in popularity but Super VGA is still in its infant stages and is only supported by a few software packages. Most experts believe that EGA will remain the most common display standard for a long time to come because changeover to the VGA standard always requires purchasing a new monitor.

Display Adapter

Display-Master VGA SidecarPage 49

Want to run EGA software without buying a new monitor? Also interested in VGA and Super VGA? Display-Master gives you 100% compatibility with them all!

Monitors

Multi-Scanning VGA MonitorPage 50

Want a new monitor that lets you display PCjr modes as well as VGA and Super VGA? Here's the monitor we recommend (for those who can afford it).

Single Frequency VGA MonitorPage 50

Don't care about PCjr modes? All you care about is VGA and prefer a less expensive monitor? Here's our least expensive VGA color monitor!

PCjr Color DisplayPage 50 (Also see Page 91)

Satisfied with your PCjr Color Display and you'd like another?

Other Video Products

Thin-Font ModulePage 51

Want to improve the apparent resolution of your monitor in CGA text modes? Here's a way to do so without purchasing a new monitor.

TV ConnectorsPage 52

Want to use your television as a computer monitor? Prodigy looks great on TV and games can be real exciting when displayed on a big screen!

Adapter for Color DisplaysPage 52

Want to plug a CGA monitor into your PCjr's D connector?

Adapter for EGA DisplaysPage 52

Want to plug an EGA or Multi-Scanning monitor to your PCjr's D connector?

External Amplifier and SpeakerPage 52

Are you using the genuine PCjr Color Display? If you're not, you're also not hearing 3-voice PCjr or 4-voice Tandy sound. Purchase this product and you will!

Everything PCjr Owners Should Know About Display Adapters ... Before they Purchase Software

Purchasing software that will run on a PCjr is often confusing. The reason is that you rarely see "PCjr" listed on a software package. That's because most software manufacturers list the display adapters which they support, not the computers, on their packages.

Pick up any software package and examine the carton. Chances are it says the program will run with a Color Graphics Adapter (CGA). It may say an Enhanced Graphics Adapter (EGA), Memory Controller Gate Array (MCGA), or Video Graphics Array (VGA) is also supported. And now, you'll see more and more programs that also support the Tandy Graphics Adapter (TGA).

In addition to CGA, EGA, MCGA, VGA, and TGA you'll also see MDA, MGA, and HGA listed on many software packages. So what is a display adapter anyway, and which one of these does the PCjr have? More PCjr users shopping for software ask this question than any other. Do you know the answer?

If you're not sure then just keep reading. When you finish this article you'll know everything you need to select software that runs on your PCjr. Better yet, you'll also know exactly how to enhance your PCjr so it can run more software than any other computer!

The correct answer is that the PCjr doesn't use any of the display adapters listed above. To understand this answer lets go back to the time when IBM was still selling the PC and PC-XT. If you purchased one of these computers you would have been asked whether you wanted the system to be set up so it could display in color.

CGA and MDA

If you purchased a color system you got a color monitor and a plug-in circuit board that "adapted" the computer to work with the color monitor. IBM called this plug-in circuit board a Color Graphics Adapter, which is today more commonly known as a CGA card. If you did not select the color system you received a monochrome monitor and a Monochrome Display Adapter (MDA). Thus, the first two display adapters had arrived.

Programs designed to run on computers set up with a CGA (Color Graphics Adapter) card could operate in either text or graphics modes, and could display up to 4-color graphics with 320x200 resolution.

Programs designed to work with an MDA

(Monochrome Display Adapter) card could not display graphics at all and were limited to one color.

HGA and MGA

It wasn't long before someone would improve IBM's MDA card. The improved Monochrome Display Adapter, developed by a company named Hercules, allowed monochrome monitors to also display graphics. The new adapter was known as the Hercules Graphics Adapter (HGA). Other companies, were soon marketing their own version of the Hercules card. These other cards, which did exactly the same thing as the Hercules card, became known as Monochrome Graphics Adapters (MGA).

Programs which support either the HGA or MGA card will therefore not normally run on a PCjr at all, as both of these adapters were designed to work with monochrome systems, and the PCjr is a color system.

PCjr-CGA

The PCjr was IBM's entry into the home computer market. IBM wanted their home computer to have superior graphics when compared to their other computers, so they developed a special enhanced version of their CGA card. Enhanced CGA was supposed to revolutionize computing with its 3-voice sound and 16-color 320x200 graphics mode, but IBM stopped making PCjrs before Enhanced CGA had a chance to catch on.

Since IBM's Enhanced CGA was unique to the PCjr, we often refer to it as PCjr-CGA. And while PCjr-CGA is not 100% backwards compatible with true CGA, it is close enough to run *most* CGA programs. Nevertheless, differences between true CGA and PCjr-CGA do exist, and these differences account for some of the compatibility problems PCjr users have encountered.

This means if a program does not list the PCjr on its package, but it does list CGA, the program will normally run fine on the PCjr in CGA mode—although, because it is running in CGA mode, you should never expect the program to produce anything more elaborate than 4-color CGA graphics.

Programs which list the PCjr on their box, such as many titles sold by Sierra On-Line, often take full advantage of the PCjr's enhanced graphic and sound capabilities. This means the program will not only produce impressive 16-color graphics, but also arcade quality music and sound (All 100% PC compatibles are limited to using the computer's internal beeper as a sound source. This means they can not produce sounds in any way comparable to PCjr sound, unless an expensive sound card is also purchased).

However, here's the deceptive part. Just because a program lists the PCjr on its package it doesn't mean the program uses the enhanced 16-color PCjr-CGA mode—or the PCjr's 3-voice sound. The software publisher may have simply determined that the program runs on a PCjr in the usual 4-color CGA mode. So, unless it says 16-color PCjr-CGA mode on the package or manual, you'll need to try the program to determine whether it runs in the 16-color or 4-color mode.

TGA

Shortly after the PCjr was announced, Radio Shack introduced their Tandy 1000 computer. The Tandy Graphics Adapter (TGA) can also display 16-color graphics with 320x200 resolution. In addition, the Tandy also has both 3-voice and 4-voice sound capabilities.

Programs designed to produce Tandy 3-voice sound can produce the same sounds on a PCjr; however, to use this capability PCjr owners often need to run a software utility which turns the PCjr's internal beeper off and turns the 3-voice sound channel on.

Although TGA and PCjr-CGA are too similar to be coincidence, there is one minor hardware difference which prevents most Tandy programs from running correctly on a PCjr. Fortunately, PCjr owners can make a minor hardware modification to their PCjr System Board which will make their PCjr practically 100% Tandy compatible.

EGA

The next new IBM computer introduced was the PC-AT. About the same time IBM also introduced a new graphics adapter, which, like PCjr-CGA, could also display 16-color graphics with 200 lines of resolution. The new graphics adapter was called the Enhanced Graphics Adapter, or EGA card. In addition to the standard 200 line modes, EGA Card users who also purchased optional piggyback EGA memory expansion options, could also display graphics with superior 350 line resolution. So while 16-color EGA graphics may have excited those who were previously limited to 4-color CGA graphics, the EGA card offered with all IBM AT computers didn't offer a whole lot more than PCjr-CGA. But the bad news was that hardware differences between EGA and PCjr-CGA would prevent software that used the EGA 16-color mode from running with PCjr-CGA.

But here's where PCjr owners got their big break! When a software company decides to write a program that supports EGA, they must first decide which EGA mode to use. If they design their program to use a 200 line EGA mode their program will run on any computer that has EGA. If they use a 350 line EGA mode their program will not run on any IBM AT or other computer that uses IBM's EGA card unless the computer also has IBM's op-

tional EGA memory expansions installed. As a result, very few software publishers develop EGA programs which use anything other than 200 line EGA modes.

Here's why this is great news for PCjr owners. Remember earlier we explained how PCjr-CGA can produce 16-color graphics with 320x200 resolution? This means the monitor used on the PCjr was designed to display 16-colors and 200 lines of resolution. Or in other words, the PCjr's color display has no trouble at all when used to display 200 line EGA modes! That's why PCjr users do not need to buy another monitor in order to run most EGA programs. All they need is an EGA compatible display adapter.

IBM MCGA and VGA

IBM continued to design newer computer's, and with their PS family of computers they introduced the Memory Controller Gate Array and the Video Graphics Array standards, more commonly referred to as simply MCGA and VGA.

VGA offers substantial improvement over both EGA and PCjr-CGA for several reasons. First, VGA has a 256-color 320x200 graphics mode, and also a 16-color 720x400 text mode. This means VGA offers modes which enable software companies to develop games with dazzling graphics, as well as substantially improved detail for word processing and spreadsheet users.

VGA also provides for an improved method for programs to display information on the screen. As a result, thanks to VGA's CPU to video memory read/write cache you'll have no trouble if you upgrade your PCjr to VGA— even if you're still operating at 4.77 MHz.

MCGA is only used in IBM's low-end PS systems, and is not normally considered an important mode because VGA does more than MCGA, and VGA can also do all MCGA modes.

Super VGA

Soon lots of companies were making VGA cards. Each company made sure their VGA card was compatible with all IBM VGA modes, however virtually every VGA card manufacturer wanted to make their card better than everybody else's. VGA cards with 16-color 800x600 modes, as well as higher resolution modes which produced even more colors, were advertised. Terms such as "Enhanced", "Super", and "Above" were used to describe their VGA cards, but these terms had no universal meaning because there were no industry standards.

Well, VGA card manufacturers soon found out what all PCjr owners already knew: Owning a computer which has superior graphic capabilities doesn't do you any good unless you also have software designed to utilize that capability.

So, the VGA card manufacturers started writing their own software drivers to use improved modes. The result was that users needed a special driver for each program, and also needed a monitor that worked with the same horizontal and vertical frequencies as the "improved" VGA card. And because there were no standards, a software driver designed to work with one "improved"

VGA card did not normally work with another manufacturer's "improved" VGA card. Worse yet, each time the software manufacturer revised their program the VGA card manufacturers had to write new drivers to work with the new version of the software manufacturer's program!

Things were quickly getting out of hand and the industry recognized the need to agree upon a non IBM standard that provided better resolution than VGA. A standards organization named VESA was formed, and in August 1990 the Super VGA standard was announced. The VESA recommended standard for Super VGA is 16-color graphics with 800x600 resolution.

Super VGA is the first non IBM standard since TGA. It's also very important because software companies can now write software that displays slanted lines that look like slanted lines—not staircases; and circles that look like circles. It's also important because it means the software publishers, not the VGA card manufacturers, can design programs to work with Super VGA!

Upgrading the PCjr's Display Adapter

The PCjr can run VGA and VESA recommended 800x600 Super VGA software, however, like the IBM PC, XT, AT, and other computers, to do so you must purchase and install a new display adapter card.

When you purchase and install a PC Enterprises Display-Master VGA sidecar the PCjr can run programs designed to work with all the display adapters listed in this article. You'll be able to run software designed to work with Super VGA, VGA, MCGA, EGA, CGA, MDA, MGA, and HGA as well as most Tandy (TGA) and all PCjr-CGA software.

In addition, the PC Enterprises Display-Master VGA sidecar does not in any way interfere with the PCjr's normal sound capabilities. This means programs which support VGA that also support PCjr 3-voice or Tandy 4-voice sound can be run on a PCjr in VGA mode with 3 or 4 voice sound without purchasing anything else —and that's simply something no other IBM computer can do.

Before our Display-Master VGA Sidecar can be installed on your PCjr a modification must be made to your PCjr system board. This modification permits the Display-Master cartridge to turn off the PCjr's built in graphics adapter in order to avoid contention with our Display-Master VGA Sidecar.

There are three ways to have your system board modified:

1 To get started with VGA as quickly as possible without any down time at all, simply purchase the PCjr Display-Master VGA Sidecar and a reconditioned PCjr System Board (PCjr System Boards sold by PC Enterprises are already modified to support VGA). You'll be able to get VGA up and running on your PCjr the day you receive your order. Then, at your leisure, return your old PCjr System Board to us and receive a trade in credit. Refer to the "Trade-In Policy and Instructions" section (Page 91) of our catalog for more information.

2 You can send your existing PCjr System Board to us and let us make the necessary modifications. How long you'll need to wait may vary with our work load, however, we expect that in most cases your system board will be on its way back to you within one week after it's received. Refer to the "Five System Board Modifications" section (Page 13) of our catalog for more information.

3 Or, if you prefer, we'll provide modification instructions and the parts you'll need directly to you. Then, you can either modify your system board yourself, or let a local users group or dealer install the modifications for you. In this case, purchase the Display-Master VGA sidecar and the VGA Upgrade Kit (below).

Don't worry, if you are not successful at making the modifications yourself, you can still take advantage of our System Board trade-in credit without penalty as long as you haven't damaged the system board beyond repair!

VGA Upgrade Kit

Purchase this kit only if you intend to make the VGA system board modifications yourself. You will need to replace two components which are soldered to your PCjr System Board, cut several traces, and install a few jumpers. The kit includes all the components that you'll need, plus adequate wire, solder, solder wick, and step by step instructions. You'll need a soldering iron, an exacto knife, and a little know-how.

Order Kit #11201 Price: \$9.95

JRCONFIG v3.02 Now Available

Now one version does it all! The JRCONFIG.NRD and JRCONFIG.DSK programs have been combined. New features and support make JRCONFIG.SYS the most powerful PCjr utility ever! JRCONFIG is a PCjr utility that provides too many features to mention! No PCjr user should be without it!

The JRCONFIG is just one of many user supported programs you'll receive when you purchase the PCE Utility Disk (see Page 104).

Improved Information Reporting

Improved DOS 5.0 support

PCE jrExcellerator support

PCE Display-Master Support

PCE jrROM-Clock support

Highlights of New Support

Increases compatibility of your PCjr

Bugs in previous versions eliminated

PCE Compatibility Cartridge support

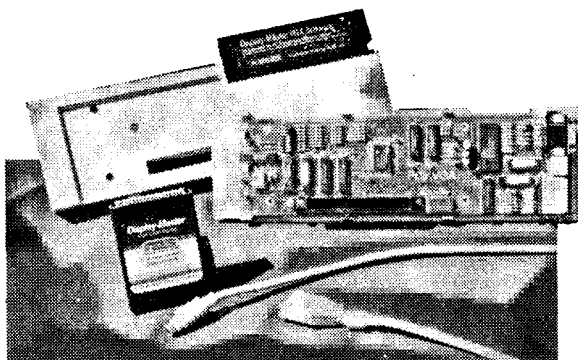
Display-Master

Now PCjr users can venture into a new world of computer sophistication. With our Display-Master VGA Sidecar installed your PCjr will become 100% EGA, MCGA, VGA, and Super VGA compatible! In addition, you'll also get full MDA, MGA, HGA, and CGA compatibility too! Add to this 16-color PCjr-CGA and 16-color Tandy capabilities, and we think it's going to be hard to find a program that doesn't run on a PCjr!

VGA graphics are revolutionizing computing. No wonder. The difference between VGA and the best graphics your PCjr can display now is like night and day. If you have never seen a program run with VGA graphics we promise you'll not be disappointed. Instead, you'll probably find yourself staring at your monitor in awe!

And Super VGA goes beyond the modes supported by IBM's VGA card to provide serious computer users with even more dramatic displays. With Super VGA slanted lines look like slanted lines, not staircases. And circles look like circles. But our Display-Master Sidecar doesn't even stop with Super VGA. Extended VGA capabilities permit PCjr users to go far beyond both VGA and Super VGA. We think our 80 column by 75 line text mode is ideal for word processing. And there's also a 132 column by 60 line mode designed specifically for spreadsheet users.

But what most people like best about our Display-Master sidecar is that you don't need to purchase new software to use it. Most software sold today already has



built in VGA and EGA support—so all you need to do is run the program. VGA is catching on like a wild fire because it's the display standard used by IBM's PS/2 computers. That's why you'll have no trouble finding programs that run in VGA modes. In fact, just about

every software publisher we know of now designs all their programs to run in VGA.

You'll have lots of fun running software that you already own. Familiar programs, which have always run with primitive 4-color graphics, now come alive with lifelike 256 color graphics! You'll find it hard to believe that you're running the same program!

The Display-Master VGA sidecar is a PCjr sidecar that looks much like any other PCjr sidecar. On the rear you'll find a 2x9 position PCjr connector which allows you to connect your existing PCjr Color Display. You'll also find a high density

15 position D-type connector that you'll use if you decide to connect an optional VGA or Super VGA monitor. Refer to page 50 for a complete description of which modes can be accessed with each monitor.

The Display-Master sidecar comes with a special VGA support cartridge. This cartridge can be plugged into either PCjr cartridge slot and permits you to add VGA BIOS support without using any ROM address space. The VGA cartridge also lets you return to PCjr or Tandy mode by simply unplugging the cartridge.

Simply speaking, we think the Display-Master VGA sidecar is the most important new PCjr product since memory expansion!

Display-Master VGA Sidecar

System Board Modification
Required (see Page 13)

Catalog #14048 Price: \$199

- **VGA, MCGA, EGA, CGA, MGA, HGA, MDA compatible**
- **Lets you run most EGA software without buying a new monitor**
- **800 x 600 x 16 resolution—VESA Super VGA compatible**
- **132 columns by 60, 50, or 30 lines**
- **100 columns by 75, 60, 50 or 30 lines**
- **Digital monitor connector: 18 pos (2 x 9) PCjr connector (works with the PCjr Color Display)**
- **Analog monitor connector: 15 pos high density D-type connector (works with industry standard analog monitors)**
- **Also works with CGA, EGA, and monochrome monitors (adapter required)**
- **Simple plug-in installation (it's a sidecar)**
- **Eliminates the need to use memory management software**
- **Our Compatibility Guarantee**
- **Our Satisfaction Guarantee**
- **Full Year Warranty with PC Enterprises**
- **PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr**

Attention PC Enterprises Hard Disk Expansion System Users: When you first start your system you'll see the message: "PCjr ST01jr Disk Boot Software v1.4". If your system displays an earlier version number, you'll need to upgrade your ST01jr BIOS before you add VGA. To do this order the latest SCSI Host Adapter BIOS at the time you purchase your Display-Master sidecar. Catalog #58315-5 Price: \$19.95

VGA Monitors

The PC Enterprises Display-Master VGA sidecar will permit PCjr users who already have an 80 column color monitor to run most EGA and true CGA programs without purchasing another monitor. For this reason we recommend that you purchase another monitor only if you are not satisfied with 16-color EGA graphics and instead prefer VGA, Super VGA, or Extended VGA capabilities.

If you decide to purchase another monitor you can either leave monitor selection to us and order one of the monitors on this page, or you can go to your local computer store and select your own monitor. In either case, we'll do our best to tell you everything you need to know to select a monitor which is particularly well suited for PCjr applications.

Things to Consider Before You Purchase A New Monitor for the PCjr

Beware—many monitors interfere with the PCjr's disk drive when they are placed on top of the PCjr system unit. If you select a monitor that interferes with your drives you'll experience "Disk Boot Failures" and "Error Reading Drive (Abort, Retry, Ignore)" messages. If this happens you will not be able to keep your monitor on top of your PCjr. Instead you will need to position your monitor to the side of your system, or somehow elevate the monitor above the system unit. The only way you can tell whether or not a monitor will interfere with the PCjr's disk drive is to try it.

Also, make sure the monitor you select comes with its own power cord that plugs directly into an AC wall outlet. Many monitors come with a special power cord that's intended to plug into the computer's power supply. If you purchase one of these monitors you'll find there's no place to plug it into when used with a PCjr.

It's also important to point out that, like other computers, the PCjr has a built-in beeper which produces sound. If you upgrade to VGA you'll still hear the PCjr's built in beeper, however while the PCjr Color Display came standard with a built-in amplifier and speaker, most VGA monitors do not. This will be apparent when you run programs which produce PCjr or Tandy sound. In order to hear the improved sound, you'll need to connect your PCjr to your stereo, or purchase an external amplifier and speaker (such as PCE Catalog #14804). Remember: This only affects PCjr and Tandy sound which you can't hear on other computers anyway.

Also, VGA has modes which emulate CGA and EGA, however, if you want to run software in other modes the monitor you purchase must be capable of operating at the frequencies indicated below.

	Vertical (Hz)	Horizontal (KHz)
PCjr-CGA (Tandy)	60	15.75
HGA	50	18.10
MDA	50	18.43
VGA and MCGA	60 and 70	31.50
Super VGA	56	35
Extended VGA Modes	50 to 70	31.5 to 35

Finally, keep in mind that these monitors also work on other computers, so an investment in a new monitor is not tied to your PCjr.

Monitor manufacturers and part numbers are not included in our catalog because monitor manufacturers come out with new models much more frequently than we print new catalogs. When you purchase a monitor from PCE it will always be selected specifically for PCjr applications and it will meet or exceed all the specifications provided on this page. Call for details. Also, monitor prices include shipping surcharges. This means we'll ship your entire order UPS Ground Service for \$5—even when the monitor alone might actually cost us ten times that to ship!

Single Frequency VGA Monitor
Purchase this monitor if you're looking for the least expensive monitor you can buy that permits you to upgrade to VGA. This monitor will let you run CGA, EGA, and VGA programs but not PCjr-CGA, Tandy, Super VGA, or several Extended VGA modes. If you buy this monitor and you want to run software that uses PCjr-CGA or Tandy modes you'll need to also keep your PCjr Color Display attached.

Catalog #78812 Price: \$399
Sale Price: \$349

Multi-Scanning VGA Monitor
If you can afford a good multi-scanning monitor, we strongly recommend you buy it. With the proper multi-scanning monitor, one monitor is all you'll need to display any mode that your PCjr and Display-Master sidecar can produce.

Even after upgrading to VGA there will be times when you'll want to run software in PCjr-CGA or Tandy mode. Many older programs support 4-color CGA and 16-color PCjr or Tandy mode—but not EGA or VGA. When you run these programs on other computers the program runs in 4-color CGA mode. No doubt you'll prefer to run these programs in 16-color PCjr-CGA or Tandy mode. To do so with a multi-scanning monitor is simple—just pull out the VGA cartridge. With any other type of monitor you'll need to switch back to your PCjr Color Display. But be careful if you purchase a multi-scanning monitor elsewhere—not all multi-scanning monitors go down to 15.75KHz, which is what you need to run software in PCjr-CGA or Tandy modes. And not all monitors go up to 35KHz, which is necessary to run all the Extended VGA modes that our Display-Master VGA Sidecar can produce.

Catalog #78811 Price: \$499 Sale Price: \$445

The PCjr Color Display
This information is included on this page for comparison with our VGA monitors. The PCjr Color Display is the monitor most PCjr users already have because it was usually sold with the PCjr. This is a digital monitor capable of displaying 16 colors with 200 lines of resolution. If you use the PCjr Color Display with our Display-Master VGA sidecar you'll be able to run programs that use any CGA or EGA mode—except EGA modes which require 350 lines. We didn't think 350 line EGA modes were very common so we ran some tests. We selected at random twenty popular programs which stated on their package that they supported EGA graphics. All twenty ran fine in EGA mode with this monitor and our Display-Master VGA Sidecar. So this is why we don't expect you to encounter many EGA programs that won't run with your PCjr monitor!

Catalog #78705 Price: \$199 (Reconditioned)

Horizontal Scan: 31.48KHz
Vertical Scan: 60 or 70 Hz
Max Resolution: 640 x 480
Screen Size: 14 inch
Dot Pitch: .39
Built in amplifier & speaker: No

Graphics Modes

640 x 480	16 Colors
320 x 200	256 Colors
360 x 480	256 Colors
720 x 540	16 Colors
640 x 350	16 Colors
640 x 200	16 Colors
320 x 200	16 Colors

Text Modes

100 Columns by 60 lines
100 Columns by 50 lines
100 Columns by 30 lines

Horizontal Scan: 15.75 to 35KHz
Vertical Scan: 60 to 70 Hz
Max Resolution: 800 x 600
Screen Size: 14 inch
Dot Pitch: .28
Built in amplifier & speaker: No

All PS/2 compatible modes PLUS:

Graphics Modes

Text Modes

100 Columns by 75 lines
132 Columns by 60 lines
132 Columns by 50 lines
132 Columns by 30 lines
*100% VESA Super VGA compatible

Horizontal Scan: 15.75KHz
Vertical Scan: 60Hz
Max Resolution: 640 x 200
Screen Size: 13.25 inch
Dot Pitch: Approximately .51
Built in amplifier & speaker: Yes

Graphics Modes

640 x 200	4 Colors
320 x 200	16 Colors

Text Modes

80 Columns by 25 lines

Sharper Characters for your CGA Monitor!

PCjr users often complain that the display is difficult to read. It's true. Normal characters displayed by the PCjr often "fill-in" or "close-up" making them difficult to read.

The Thin-Font module is a low cost easy-to-install product which helps to minimize this problem. It replaces the PCjr's original character generator IC with a new module that lets you choose between two different character sets.

Once installed, you can select the character set you prefer with a simple keyboard command. The first character set is very similar to the characters your computer displays now. These characters are two dots wide. Most people prefer these characters when run-

ing software in 40 column and reverse video modes (see Figure A).

We call the second character set the Thin-Font characters. These characters are only one-dot-wide so they are not as likely to "fill-in" or "close-up". You'll probably wind up using these characters the majority of the time (see Figure B).

Once installed, your computer automatically selects the Thin-Font characters. If for any reason you ever want to switch back to the bolder character set you can do so with a simple keyboard command.

Installation can be accomplished in just a few minutes provided your computer's character generator IC is already in a socket. Simply unplug the existing character generator IC and replace it with the Thin-Font module. Next, attach an E-Z clip to an easy to get at location.

While most PCjrs already have their character generator IC plugged into a socket a few do not. If your character generator IC is not already in a socket you can send your PCjr system board to us and we will be happy to install our Thin-Font Module for you (\$25 charge). Better yet, you can purchase our Five System Board Modifications (Page 13) and we'll install a socket for your character generator at no additional charge! The character generator IC is the 24 pin IC directly behind the round hole in the front of the PCjr. It can be found underneath the computer's IR receiver.

The Thin-Font Module improves the apparent resolution of your PCjr monitor.

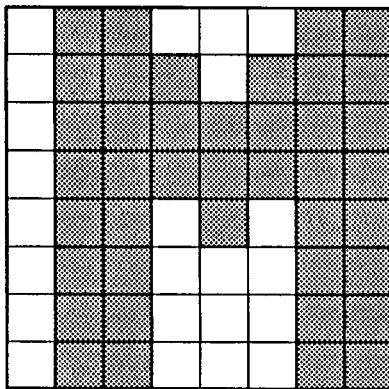


Figure A

Normal Character Set

Magnified view of the actual dot pattern used by the letter M

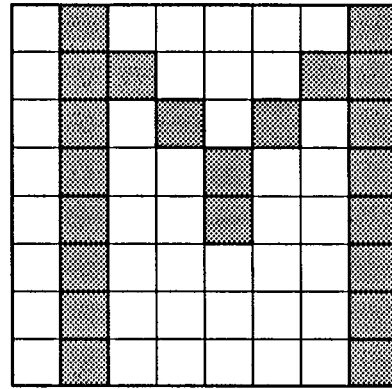


Figure B

Thin-Font Character Set

Normal PCjr characters are two dots wide. While two-dot-wide characters may be sharp and distinct in 40 column modes they tend to "fill-in" or "close up" in 80 column modes. And when two wide characters are displayed side by side the characters tend to blur together.

Thin-Font Module

The Thin-Font module adds a much thinner character set to the PCjr. The new characters are one dot wide and therefore have more distinctive shapes. And because they are thinner they will not "fill-in", "close up", or blur together as easily as two-dot-wide characters.

Catalog #18009 Price: \$19.95

Video Adapters and Accessories

Racore External Amplifier and Speaker

The IBM Brand PCjr Color Display has a built-in amplifier and speaker. If you replace your PCjr Color Display with a display that does not have this feature you will not be able to hear PCjr or Tandy sound. All you'll hear are 1-voice sounds produced by the system board beeper.



An external amplifier and speaker are highly recommended to every PCjr owner who upgrades to VGA. That's because once you add VGA, the PCjr becomes one of the few computers ever made that can display VGA graphics and also produce 4-voice Tandy sound!

This product permits you to hear PCjr and Tandy sound when you run PCjr and Tandy software. It fits inside your PCjr and installs in minutes.

Catalog #14804 Price: \$39.95

Adapter for Color Displays

Attach an industry standard CGA monitor to your PCjr



Permits an industry standard RGB (digital) monitor to be used with the PCjr. One end of this adapter plugs into the 2x9 pin connector marked with a "D" in the rear of the PCjr or Display-Master VGA sidecar. The other end of this adapter has a female 9 pin D-type connector which plugs into the male 9 pin D-type connector found on all industry standard RGB monitors. This adapter is for digital color monitors only and does not work with monochrome displays (Note: this adapter also works with the PC Convertible).

Adapter for Color Displays
Catalog #22509-1 Price: \$29.95

Adapter for Digital Displays

Permits industry standard digital monitors which have 9-pin connectors to be used with the PCjr D connector or with our Display-Master VGA Sidecar. Works with CGA, EGA, and Multi-scanning displays.

Adapter for Digital Displays
Catalog #22523 Price: \$34.95

Adapter for Monochrome TTL Displays

Permits an industry standard monochrome TTL monitor to be used with our Display-Master VGA Sidecar. Call to determine availability.

Adapter for Monochrome TTL Displays
Catalog #22524 Price: \$34.95

TV Connectors

Permits you to connect a color or black and white television set to the PCjr for use as a monitor. Ideal for those who take their computer with them when they travel as it permits connecting the PCjr to Hotel/Motel television sets.

Others purchase and save a TV Connector for possible future use in the event their monitor ever needs service. Can also be used to attach the PCjr to a VCR so that you can make video tapes of programs that you run.

TV Connectors are frequently used by those who run Prodigy and other similar services. They prefer connecting their PCjr to a television set because it often has a larger screen than their monitor.

Simultaneous operation between your existing monitor and television, will be possible.

Games come alive with action when the PCjr is connected to a large screen TV.

Catalog #79003 Price \$29.95

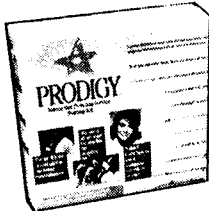
The Enhanced Model PCjr did not come with a modem.

Modems

A modem is an add-on product that allows your computer to exchange information over telephone lines with other computers. Internal modems plug inside the computer, while external modems plug into the PCjr's "S" connector.

Baud rate is how fast the modem sends and receives information. Most modems manufactured today can operate at speeds up to 2400 baud (approximately 240 characters per second).

PRODIGY[®] Service Start-up KitPage 55



Want a good reason to buy a modem? The PRODIGY service gives you hundreds! Get the latest news, weather and sports. Gain access to a 33,000 article encyclopedia that never goes out of date, and much much more!

2400 Baud Internal ModemPage 56



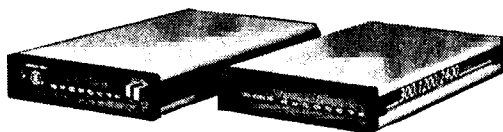
Like to add a modem inside your computer without taking up space on your desk? Also like it to be 100% Hayes compatible so it works with practically any software package you're likely to purchase? Make this modem your first choice!

300 Baud Internal ModemPage 57



Prefer to buy a modem without spending a lot of money? This modem is not Hayes compatible, so it won't work with modem software you buy in the store, but you won't need to buy any software because user supported software is included!

2400 and 1200 Baud External ModemsPage 58



Already using your PCjr's internal modem slot, and you want to add our fastest Hayes compatible modem? These are our best 2400 baud external modems! Is price more important than speed? Our lowest cost 1200 Baud external modem is just for you.

Recommendation: Always purchase an internal modem if you have a choice. Doing so allows you to install a modem and still use the PCjr's "S" connector (serial port) for a mouse, printer, or other serial device.

Purchase a 2400 baud modem if you could afford it and you're a serious computer user, or if you expect to use your modem to make long distance telephone calls.

Purchase the IBM 300 Baud Internal Modem if you don't want to spend a lot of money and you're more or less looking for an inexpensive new toy.

Software Closeouts

IBM Reporting Assistant

Helps you custom design reports from keyboard and IBM Filing Assistant. Select the items to be printed and the order in which they will appear. Use simple commands to format, sort, calculate, and print reports.

System Requirements: 128K PCjr, IBM Filing Assistant
Catalog #86023 Price: \$99.95 Clearance Price: \$29.95

IBM Graphing Assistant v1.01

Helps you create colorful line, bar, and pie charts from keyboard and information stored in IBM Filing Assistant. These charts and graphs can also be incorporated into documents produced with IBM Writing Assistant.

Catalog #86018 Price: \$99.95 Clearance Price: \$29.95

IBM PCjr COLORPAINT

Enables you to draw color graphics with the touch of a button! An easy-to-use, high function drawing tool for both amateur and professional artists. Cartridge version.

System Requirements: 128K PCjr IBM PCjr compatible serial interface mouse
Catalog #18029 Price \$65.00 Clearance Price: \$39.95

*Very limited quantities are available!!
Please order early to insure that you get
the best selection.*

IBM Planning Assistant

This easy-to-use electronic spreadsheet lets you analyze "what if" situations in planning, budgeting, projecting, and forecasting. Offers on-line help screens and customized formulas for advanced calculations. Exchanges data with other IBM Assistant programs.

Catalog #86006 Price: \$99.95 Clearance Price: \$29.95

IBM Drawing Assistant

Create drawings and edit graphs for personal and business communications. Add text in four type styles and choose from a variety of colors or shades. Also move, copy and selectively erase graphics easily. Incorporate drawings into documents created by IBM Writing Assistant.

System Requirements: DOS 2.10 or higher, 256K, IBM compatible mouse recommended
Catalog #86024 Price: \$99.95 Clearance Price: \$49.95

PC VIDEOTEX vA.100

An interactive communications facility that lets you access multiple databases with text and pictures displayed in color. Travel arrangements, investment portfolio options, home shopping, agricultural forecasts and more available to you.

System Requirements: DOS 2.10 or higher, 128K PCjr, 1200 Baud modem, PCjr serial cable, access to a Videotex service.
Catalog #86025 Price \$9.95

The Chessmaster 2000

The national bestseller that made chess history. With an unprecedented selection of features, 3-D board view, 20 levels of play, 71,000 opening moves, and a US Chess Federation rating of 2018, the Chessmaster 2000 is a knowledgeable tutor, an impartial referee and a powerful opponent. Special PCjr version.

System Requirements: 384K PCjr 512K recommended
Catalog #86525 Clearance Price: \$29.95

Computer Novel Construction Set

Designed so that you can create your own exciting interactive fiction. Now, in addition to being the central character in text adventures, you can also be the author...the creator of swash-buckling heroes, dastardly villains, romantic encounters, alien planets, whatever your mind can conjure up. No programming skills required.

System Requirements: 128K PCjr
Catalog #86315 Price \$19.95 Clearance Price: \$9.95

ACCOLADE'S MEAN 18 FAMOUS COURSE DISK II

You've played some of the world's greatest courses on your Mean 18. You've birdied at Pebble Beach, eagled at St. Andrews and shot a cool five under at Augusta. But don't get fitted for your Masters jacket quite yet. Accolade presents the second leg of the Mean 18 Tour, Famous Course Disk Volume II.

System Requirements: Mean 18 Program Disk, 256K PCjr
Catalog #86618 Price: \$29.95 Clearance Price: \$21.95

DOS 2.10

5 1/4 diskettes. Includes manual, DOS diskette plus Supplemental Programs diskette.

Opened
Catalog #78731 Clearance Price: \$19.95
New
Catalog #86011 Clearance Price: \$29.95

DS Tutor

A powerful, interactive education tool designed to teach beginning users how to use a personal computer and the DOS System.

Requires 256K. 384K recommended.
Catalog #86511 Price: \$31.19 Clearance Price: \$24.95

The PRODIGY[®] Service Runs on the PCjr!

If you own a PCjr, and you also have a 1200 or 2400 baud Hayes or compatible modem, you may already have everything you need to access the PRODIGY service.

The PRODIGY service is created by a partnership of IBM and Sears. If you purchase the PRODIGY Service Start-up Kit below all you'll need to access the PRODIGY service is your PCjr, a modem, and a phone line.

There are lots of other services that permit a PCjr to communicate with larger mainframe computers, but the PRODIGY service is the only service we've ever recommended for average PCjr users.

Here's three reasons we think you'll enjoy using the PRODIGY service. First, there's a good chance that you can access the PRODIGY service by dialing a local telephone number. The PRODIGY service has hundreds of phone numbers all over the US. Feel free to ask our sales representative for a list of cities which offer local telephone numbers.

Second, while other on-line information services have an hourly charge, the PRODIGY service is an excellent value. It gives you so much for so little. The basic membership fee is inexpensive and the PRODIGY service is very affordable.

And third, the services offered by PRODIGY are useful, fun, and well worth the while. We think you'll agree. Examine this page and decide for yourself.

But first, here's a testimonial. When PC Enterprises needed to send two representatives to a trade show in Boston we thought it was a good opportunity to try out the PRODIGY service. The service advertises that users can make airline reservations, so we decided to put them to the test.

First we contacted our usual travel agent and asked to reserve two seats on the least expensive flight to Boston. Then we logged onto the PRODIGY service for the first time. In less than fifteen minutes we were able to view airline schedules and prices. We selected a flight, and asked to reserve two seats. Several hours later our travel agent called back and quoted a fare \$100 per seat higher! While we're not knocking travel agents, this experience does make a statement concerning the usefulness of the PRODIGY service.

Just look at all these services:

● Computer Club

In this section you'll meet lots of other PCjr owners and some pretty accomplished PCjr gurus. They'll offer advice and answer specific questions you might have concerning PCjr's and other computers.

● Travel

PRODIGY is great for travelers. With EASY SABRE, you can book seats on over 300 airlines at the lowest available fare, and make hotel and rental car reservations worldwide. With the Mobil Travel Guide,™ get information on restaurants and lodging for 3,300 cities across the US. And the Travel Club bulletin board has tips from experts and lets you exchange travel ideas with other service members.

● Education

PRODIGY makes learning fun for the entire family. Grolier's 21 volume encyclopedia contains 33,000 articles and it's updated every 3 months, so it's never out of date. And if it's excitement you're after, you can go on a worldwide chase in our version of "Where in the World is Carmen Sandiego?" and learn about the cultures of other lands.

● Communications

Send and receive personal messages from other members all over the country. Your PRODIGY service membership includes 30 free personal messages per month. Or if it's public bulletin boards you're into, you can exchange ideas and information on everything from food and wine to money and travel.

● Weather

Accu-Weather coverage—over 300 cities worldwide! After making our airline reservations to Boston we used this section to see what the weather would be like. We were happy that we did, because when the thunderstorm started we were prepared! You can also get foreign weather, ski reports, boat and beach conditions, and much much more.

● Sports

Extensive in-progress coverage of baseball, football, hockey, golf, tennis, soccer, bowling, horse racing, autoracing, and basketball. Scores, standings, and statistics for your favorite teams!

● Shopping

If you like to shop, you'll love the value and convenience of shopping with over 60 merchants on the PRODIGY service. Especially exclusive discounts and specials available only to PRODIGY service members. For instance, you can enjoy tremendous savings on fine china, crystal and silver. Or you can send fresh flowers and plants, just about anywhere, with next day delivery. We even have an online Post Office where you can order stamps and have them delivered right to your door within five business days.

● Financial Services

The PRODIGY service gives you control of your investments. You can buy and sell stocks, and get free investment reports from an online discount broker. QUOTE TRACK™ tracks your stocks throughout the day on a minimum 15 minute delay with information from Dow Jones News/Retrieval. And there's more. In-home banking lets you pay bills without writing checks, transfer funds from a savings account to your checking account, even view your account status.

● Other

Look up product information in Consumer Reports. Play challenging and fun games! Get advice from nationally known experts. And lots more!

That's right, the PRODIGY Service does run on a PCjr, but it runs much better when you purchase the PRODIGY Service Start-up Kit from PC Enterprises! That's because PC Enterprises includes a special screen driver which lets PRODIGY run in color and keyboard-fix software that prevents the PRODIGY service from being interrupted by an NMI problem that concerns the PCjr keyboard.

PRODIGY Service Start-up Kit
Requires: 512K, 1 Drive, 1200 or 2400 Baud Modem

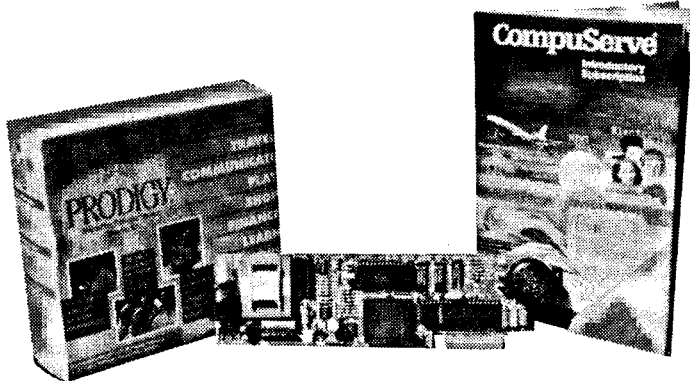
Runs Best With 640K, 2400 Baud Modem, and Mouse

Includes everything you need to access the PRODIGY service except the modem, computer, and telephone line. Also includes a one month membership.

Prices and services are those in effect at the time this catalog was printed and include the PRODIGY service basic membership fee for the first month. If you elect to continue using the PRODIGY service after the first month a \$12.95 monthly fee must be paid directly to PRODIGY. If you cancel after the first month, you will not be billed for any additional charges.

Catalog #86316 Price: \$29.95

2400 Baud Internal Modem



- Plugs into the PCjr Internal Modem Slot Without using the PCjr S Connector
- 2400, 1200, 600, 300, and 110 Baud Capability
- 100% Hayes Command Set Compatible
- 100% Address and Interrupt Compatible
- Dials and Answers Calls Automatically
- PBX Compatible (Waits for second dial tone)
- Bell 103/212a compatible and CCITT V.21/V.22/V.22bis compatible
- Nonvolatile Memory
- Built in Speaker
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility and Commitment to Continue Supporting the PCjr

Most computer users prefer internal to external modems because internal modems do not take up space on their desk. However, there's a much more important reason why PCjr users should use an internal modem. Internal modems plug into a slot inside the computer and therefore do NOT use the computer's RS-232 serial port (the S connector). This is important because PCjrs only have one RS-232 port, and there are lots of other devices which can be connected to your computer through this port.

If you add an internal modem, you'll have no trouble if you also decide to use a serial mouse, tracker ball, printer, or other RS-232 serial device. When you select an external modem you can install any other serial devices unless you also purchase a switching box, and even then you could not use the other device at the same time as you use your modem.

2400 Baud Capability

The PC Enterprises Internal Modem can operate at 110, 300, 600, 1200, or 2400 baud for maximum compatibility with other modems including the IBM internal modem. However, when operating at 2400 baud our modem is eight times faster than IBM's internal modem.

The following chart illustrates the advantage of 2400 baud modems. We have listed the overall time it would take to transfer three different files. Actual times could be longer due to telephone line noise.

File Name	Size	300 Baud IBM Modem	2400 Baud PCE Modem
JRCONFIG.NRD	3169 bytes	1 min 45s	12 seconds
JRCONFIG.DOC	24027 bytes	13 min 21s	1 min 40s
PCE Utility Disk	362496 bytes	3 hours 21 min	25 min 6s

As you can see, if you're now using the IBM Internal Modem and you purchase the PC Enterprises Internal Modem the new modem can pay for itself with the money you'll save on long distance phone calls.

Hayes Command Set Compatibility

Completely Hayes command set compatible. This means it recognizes all the Hayes AT commands and is therefore compatible with industry standard communication software packages which are designed to work with Hayes modems.

Address and Interrupt Compatible

Always recognized as COM1: and always uses the same hardware address (3F8h) and interrupt request (IRQ4) as COM1: uses on an IBM PC. This means that it will work with almost any communications software package designed to run on PC Compatible computers.

Nonvolatile Memory

Instead of using DIP switches to store your preferred operation set-up we use nonvolatile memory. This offers significant advantages as it lets you change defaults with keyboard commands—saving you the trouble of disassembling your computer. The nonvolatile memory lets you store communication parameters, the compatibility standard (Bell or CCITT), dialing method (pulse or tone), speaker volume, and numerous other things you will want to occasionally change.

Built in Speaker

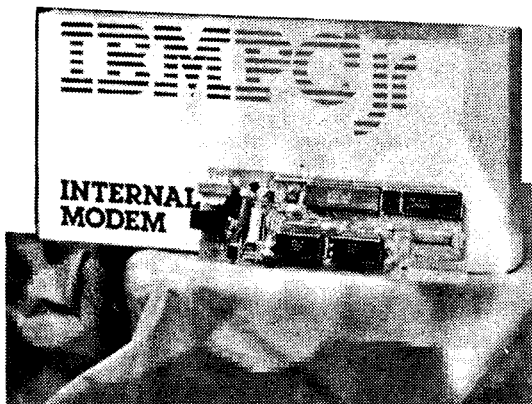
When you use our modem to originate a call you will hear the call being dialed, the ringing of the remote telephone, a busy signal (if any), and a brief carrier signal (if data connection is established). The speaker volume can be initially set by adjusting the volume control knob then later changed with a keyboard command.

2400 Baud Internal Modem

Catalog #15508 Price: \$199 **SALE \$129**

When you purchase the PC Enterprises 2400 Baud Internal Modem you'll also receive at no additional charge a FREE CompuServe subscription with a \$15 usage credit and also a free PRODIGY® Service Start-up Kit with a trial membership. This is a special limited time offer that will be withdrawn without notice, so call to avoid disappointment.

IBM 300 Baud Internal Modem



New Low Price!

While our Supplies Last—Now Only \$9⁹⁵

Telecommunications Starter Package

Here's a chance for you to enter into the exciting world of telecommunications for less than ever before! That's right, just \$9.95 gets you absolutely everything you'll need—except the PCjr and the telephone line.

If you're curious about modems and would like a chance to "get your feet wet" without spending a lot of money don't let this starter package pass you by. The package includes a Bell 103 compatible PCjr auto answer/auto dial internal modem (300 baud), user supported communications software, and a FREE subscription to CompuServe which includes fifteen dollars worth of FREE access time.

Access CompuServe Forums where you can exchange information with other PCjr users. Read about PCjr problems—and their solutions. Learn which programs run on a PCjr—and what to do when a program does not. You'll even be able to chat through your keyboard with other PCjr users, trade software, and obtain lists of thousands of other places you could call with your PCjr!

But when you log on to CompuServe, that's only the beginning. You can also access airline schedules, electronic encyclopedias, the daily news, and even stock market quotes and reports. Plus thousands of places that you'll be able to call with the IBM Internal Modem and your PCjr. You'll be able to communicate with any computer that uses a Hayes compatible modem—because all Hayes modems are Bell 103 compatible.

And don't be fooled by this low price. These modems originally sold for \$300 and were listed in our Spring 1988 catalog for \$129. We've slashed the price because we're overstocked and because experienced users prefer faster modems. Nevertheless, at \$9.95 this is perhaps the best bargain in our catalog!

But don't wait too long—our supplies won't last forever and the \$15 CompuServe credit is only being offered for a limited time.

Catalog #79024

ComSwap Board

- Strongly recommended for all PCjr users who do not have an internal modem
- Permits the PCjr to work with more PC programs which access COM ports
- Makes your PCjr Serial Port 100% Address Compatible with COM2 on the IBM PC
- Easy to use—works without running software
- Easy to install—plugs into the internal modem slot
- Ends Com Port Mystery
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Our Full Year Warranty
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

The ComSwap Board may be the smallest and least expensive PCjr product that we make—but it can save PCjr owners that use external modems a lot of aggravation. In fact, if you do not have an internal modem installed, we strongly recommend that you purchase and install a ComSwap Board before you attempt to use any device which plugs into the PCjr's S connector!

Other computers (including the IBM PC and all true compatibles), are normally set up to work with two or more serial

ports. These ports are known as COM1 and COM2.

When a PCjr is set up with an internal modem, the internal modem becomes COM1 (as it should) and the PCjr's serial port (the "S" port) becomes COM2, as it should. But, here's the problem. When you use a PCjr without an internal modem, the PCjr serial port becomes COM1—even though it still uses the hardware address associated with COM2 on the IBM PC.

That's why programs designed to work with serial devices (especially external modems),

may not run correctly when the serial device is plugged into the PCjr's S connector. In some cases the problem is minor. For example, if the program uses DOS, BIOS, or BASIC to control the serial device, you must tell it you're using COM1. If the program directly addresses the computer's hardware you must tell the program to use COM2 instead. And because there's no way to tell which method a program uses, it means you must experiment before you know whether to tell the program you're using COM1 or COM2.

But while experimentation works some of the time, it just places a band-aid over the problem.

Sooner or later a program that you are running will use DOS, BIOS, or BASIC for certain functions, and hardware addresses for others. When this happens the program simply will not run correctly on your PCjr unless a ComSwap Board is installed. Certain features may work perfectly, while other features will not work at all or may even cause the program to hang up.

The solution is to use a ComSwap Board to swap the names of your COM ports. Just plug ComSwap into your internal modem slot, then forget about it. You're PCjr's S connector will now always be 100% address compatible with COM2 on an IBM PC.

Whether you have already had problems using a serial device, or whether you're the type of PCjr user that prefers to prevent a problem before it occurs, for only \$9.95 how could you lose? Add a ComSwap Board to your next order of PCjr add-on products!!

Catalog #15506 Price: \$9.95

Special Offer

Purchase any external modem from PC Enterprises and you'll receive a free ComSwap Board PLUS a \$15 CompuServe credit FREE with your order!

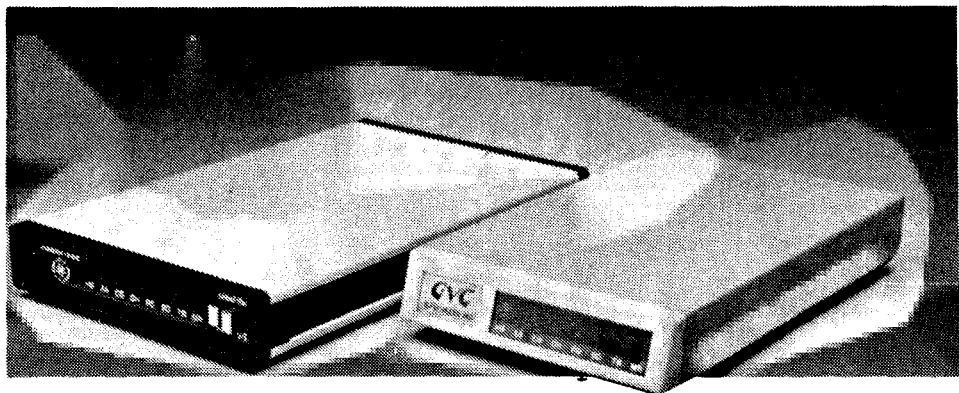
External Modems

1200 and 2400 Baud Hayes Compatible Modems

The 1200 baud modem features 1200/300/110 baud selection and our 2400 baud modem features these speeds as well as 2400 baud. Both have auto dial, auto answer and auto speed detect capabilities. Both have eight front panel lights, an RS232 interface, and an external power supply. The 1200 baud modem also has two push buttons for manual control of baud rate and the voice/data feature.

These modems have been tested by PCE with PCjr's which use both the long and the short PCjr power supplies and have been found to work extremely well. You will also need a PCjr Serial Cable (such as catalog #22505-4).

- 1200 Baud External Modem
Catalog #75507 Price: \$89
- 2400 Baud External Modem
Catalog #75516 Price: \$99
- 2400 Baud External Modem
w/MMP5 Error Correction
Catalog #75521 Price: \$169





"The jrProducts Group"

PC Enterprises, PO Box 292, Belmar NJ 07719

Order Desk: (800) 922-PCJR 8AM to 5:30PM EST

Customer Service: (908) 280-0025 9AM to 4:30PM EST

PC Enterprises started manufacturing products for the PCjr in 1984. Today, as always we remain dedicated exclusively to support and service of the PCjr and have no plans for things to change. This year we've lowered many prices and now ask for your help so we can continue to do so. Please do your best to complete the section below. Thank You.

How long have you owned your PCjr? How did you first find out about PCE? How long have you known about PCE?

How to Place an Order

Please review the page titled, "Terms and Conditions of Sale" and select the type of service you prefer. Next, if our terms are acceptable, complete this order form and mail it to the above address—or call our toll free order line and place your order by phone.

Home Address of the Person Placing the Order

Name Address City State Zip Day Phone Night Phone

Shipping Address (if different from above)

Name Address City State Zip

Check Enclosed Money Order Enclosed

Credit Card Customers Visa Mastercard

Name as printed on card

Credit Card #

Expiration Date Signature

Table with 5 columns: Catalog Number, Quantity, Item Description, Unit Price, Total Price

Got a Friend?

Do you know someone else who owns a PCjr? If so, we'd like to send them a free catalog. And if they're not already on our mailing list we might just send you a discount coupon for future orders!

Name Address City State Zip

Please Check One: Regular Service, Special Service - Priority (\$7.50), Special Service - Top Priority (\$22.50)

Amount of Order table with rows for Other Credits, Subtotal, NJ Residents 7% Tax, Shipping & Handling (\$5 00), Special Service, Total

TERMS AND CONDITIONS OF SALE

ORDERING INFORMATION

Order Line: (800) 922-PCjr—8:00AM to 5:30PM EST
Customer Service: (908) 280-0025—9:00AM to 4:30PM EST

How to Place an Order

If you have a Visa or MasterCard call either our toll free order line (800) 922-PCJR or our main number (908) 280-0025 and place your order by phone. Or, if you prefer, you can mail us your order along with a check or money order. Purchase Orders must include a check. Sorry no COD purchases.

How Long Should It Take?

Orders paid for with Visa, MasterCard, certified check or a money order drawn on a US bank are normally processed the day received. Personal and business checks are held for 14 days. After your order is processed it is sent to our shipping department. Everything ordered which is in stock is shipped immediately. If one or more items ordered are temporarily out of stock, the back ordered items will ship separately at our expense.

Checking on an Order

If an order you place is overdue and you would like to check on the order, feel free to call our toll free order line to ask whether the item you're waiting for is on back order. The Order Entry Department cannot look-up your specific order, but they can tell you whether an item you're waiting for is on back order. If you prefer to talk to someone who can check on your specific order, or to change an order previously placed, you'll need to call our Customer Service Department. Customer Service is absolutely the only department that has access to this information.

Problems

If you need help installing or using one of our products, or you have any other problem and need to speak to anyone other than an Order Entry person, call our Customer Service Department. Our Customer Service representatives can get you an answer to your question or arrange for the return of an item. Please do not call on our order line if you have a problem. The people who answer these lines are order takers only, and therefore are not knowledgeable in the use of our products, and do not know how to check up on orders.

SHIPPING AND HANDLING

Regular Service—\$5.00

Regular Service still only costs \$5 per order, regardless of the number of items ordered. This charge includes the cost of labor, the shipping carton, packaging materials, insurance, and the actual shipping cost via UPS Ground Service. (UPS Ground service can take up to ten days). Regular Service is not available to Alaska, Hawaii, Canada, Puerto Rico, Post Office Boxes, APOs, FPOs, or any other location which UPS does not offer ground service. If you want us to ship to any of these locations you must pay for one of the special services listed in this section.

Special Service—Priority

If you want us to give your order special attention you can pay a \$7.50 premium and select Priority Service. When you select Priority Service we'll put a rush on your order. If any item you order is on back order we'll add your name to the top of the waiting list and also ship everything that is in stock immediately.

While we can't make any promises, in most cases you'll receive your package within three business days. Your order will ship UPS Blue Label (second day service). If UPS does not offer second day service to your address, or if you did not give us a street address, your order will be shipped via First Class Priority mail. To select "Special Service—Priority" enter \$7.50 in the Special Services section of our order form. (Total S&H charge: \$12.50).

Special Service—Top Priority

If you want us to "drop everything and process your order" you may select Top Priority Service. In this case we'll do our best to get your order to you the next business day (UPS "Red Label" or equivalent), provided everything is in stock. To select "Special Service—Top Priority" enter \$22.50 in the Special Services section of our order form. (Total S&H charge: \$27.50).

Shipping Services and Other Locations

We will ship to other locations or use any other shipping service that you request if you pay the actual shipping cost plus a \$10 service fee. In this case, pay by credit card and tell us how you want your order shipped. We will add the appropriate charges to your bill. The \$10 service fee is applied to cover the cost of shipping materials and labor.

POLICIES

All Sales Final After 30 Days.

Prices Subject to Change without Notice.

Not Responsible for Typographical Errors

Hardware Policy

All hardware sold by PC Enterprises is brand new unless otherwise stated and guaranteed to work correctly. If you receive a product which does not work correctly we'll repair or replace the product or refund your money.

Software Policy

All software in our catalog is believed to be fully PCjr compatible (certain items are modified for PCjr compatibility). If software you purchase is defective or accidentally damaged we'll replace it—otherwise software can NOT be returned once opened. The only exception is when we goofed and the program does not run correctly on a PCjr. If this happens, we'll either fix the problem or refund your money.

Returns Policy

If you need to return an item for repair or refund call our Customer Service Department to receive a Return Authorization (RA) number. Write this number on the outside of the package. You pay shipping charges to us and we pay the shipping back to you. Items returned without a valid RA number will be refused. If you paid by credit card and request a refund we will credit your account. If you paid by check and request a refund we will send you a check payable in US dollars. Requests for refund must be accompanied by proof of purchase and be in accordance with one of the policies listed in this section. Sorry, but we can not refund shipping and handling charges.

Our Compatibility Guarantee

There's never a restocking charge if you purchase a product that you are unable to use due to compatibility. We'll do our best to solve compatibility problems for you. All you need to do is describe the problem with adequate detail for our staff to reproduce the problem in our laboratory. If we can't solve the problem in a reasonable time, you'll be permitted to return the product in accordance with our Satisfaction Guarantee, and, of course we'll waive all usual restocking charges.

30 Day Satisfaction Guarantee

All hardware is sold with our 30 day Satisfaction Guarantee. Try it. If for any reason you are not completely satisfied, we'll take it back. Items manufactured by other companies must be returned in like-new condition with all original packaging and documentation. (Do not write on documents or boxes). We will refund the purchase price of the item(s) less a 15% restocking charge if in our opinion the item must be retested before it can be resold. Shipping and handling charges are not refundable.

Our Full Year Warranty

All services performed and products manufactured with the PC Enterprises label are warranted for one full year (90 days for reconditioned products). Details available upon request. Items manufactured by IBM which were sold by PC Enterprises are also covered by our same full year warranty, as are items manufactured by other companies which are modified for PCjr compatibility by PCE (these items will be clearly indicated in our catalog and on their packaging). Items manufactured by other companies (except those modified by PCE) can only be returned to PC Enterprises for service or replacement during the first two weeks. After two weeks the manufacturer's warranty is in effect.

The Enhanced Model PCjr was originally supplied with a 62 key "Chicklet" style keyboard. Later, IBM substituted an improved "Replacement" style keyboard. Both keyboards are wireless, although either can be used with an optional keyboard cable.

Keyboards and Keypads

Chicklet style keyboards have keys which resemble chicklets standing up on their side. The Chicklet style keys do not have indentations for your fingers, and they do not have the key's name written on them. The Replacement style keyboard looks like a standard keyboard except it's much smaller than keyboards supplied with other computers.

To produce key codes for keys which do not exist on the 62-key keyboards, the Fn key is used in combination with other keys. For example, when a program requires the use of the Function 10 key, you must press and release the Fn key, then press and release the Zero key.

Keyboards

101 Enhanced KeyboardPage 63

Tired of IBM's 62-key keyboard? Prefer to upgrade to a keyboard that has all the keys you'll need? The PCE 101 Enhanced Keyboard is the finest and most compatible keyboard that we offer!

Replacement Style Wireless KeyboardPage 66

Has your existing keyboard gone bad? Want to have a spare? The IBM brand Replacement style keyboard is the finest IBM brand PCjr keyboard ever made!

Chicklet Style Wireless KeyboardsPage 66

Prefer chicklet style keys? Although often saved for possible future use as a spare, these keyboards are also purchased for spare parts, as the keyboard mechanism and circuit board is identical to that of the IBM Replacement style keyboard.

Keypads

Numeric KeypadPage 65

Like your existing PCjr keyboard, except you wish it also had a numeric keypad? The Keytronics Numeric Keypad adds just the keys you need!

Function KeypadPage 64

Like your existing keyboard, but you don't like using the Fn key? With the PCE Function Keypad you'll never need to use the Fn key again!

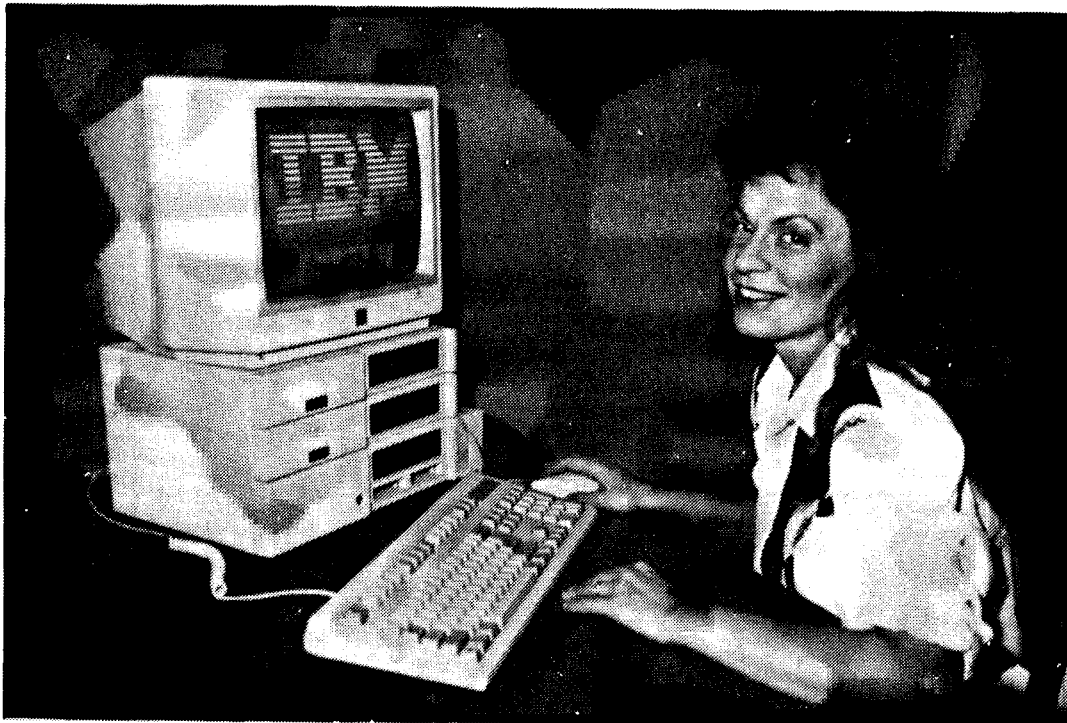
Cables and Accessories

Keyboard CablesPage 66

Prefer to use your existing PCjr keyboard with a cable instead of its wireless link? IBM and PCE straight and PCE coiled keyboard cables will meet your needs.

Keyboard OverlaysPage 66

Already own a chicklet keyboard and you'd like to purchase overlays so you can individually label each key? Keyboard Overlays may have a practical application, but they're more often purchased by curious PCjr owners for their personal museum of PCjr products.



Recommendation: Personal preference should normally determine the best keyboard to use, as most PCjr owners never experience any keyboard compatibility problems.

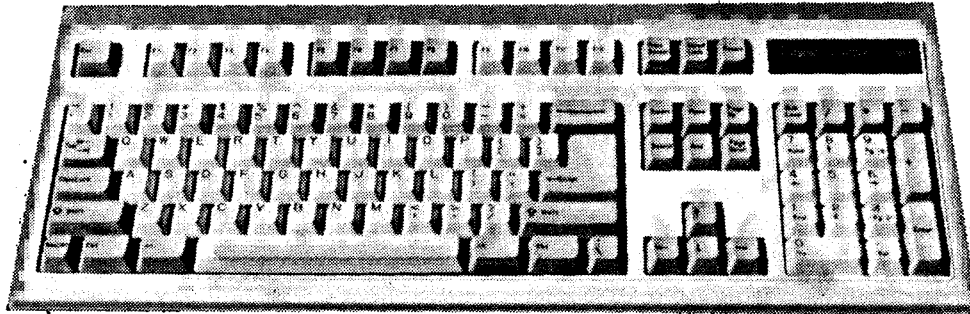
Although compatibility problems are quite rare, here are a few things all PCjr owners should know.

Without a question, the most common keyboard compatibility problem concerns a bug in the PCjr BIOS. If you press a key and see two characters appear on the screen—or nothing appears at all, you'll need the INT9FIX utility provided on the PCE Utility Disk, or a QuickSilver cartridge.

Another problem that some PCjr owners experience occurs when they release certain keys. A few programs have features, such as the search feature of WordPerfect v5.0, which do not always work as expected when the PCjr's Fn key is used. These programs may act as though you never released the Fn key. If you encounter this problem, it can be solved by either the PCE Function Keypad or the PCE 101 Enhanced Keyboard.

The last keyboard compatibility problem concerns the Alt / key combination. If a program requires this combination, the program will not work properly on a PCjr unless you use the INT48FIX utility provided on the PCE Utility Disk. This is because the Alt / combination has a special meaning on the PCjr. When you press the Alt key and then the slash key on a PCjr, the PCjr converts the slash to a backslash because that's what the PCjr was designed to do! Consequently, the program never sees the Alt / combination (It sees Alt \ instead).

The PC Enterprises 101 Enhanced Keyboard for the 600,000 PCjr Users Other Companies Ignore!



While many PCjr users are very satisfied with the 62-key keyboard that came with the PCjr there are times that a full size keyboard is much more convenient.

The PC Enterprises 101 Enhanced Keyboard makes your PCjr much easier to use. With its positive tactile feel, extra large shift and return keys, and indicator lights for Num Lock, Caps Lock, and Scroll Lock our 101 Enhanced Keyboard is perhaps the most convenient keyboard ever designed.

It has twelve dedicated function keys, so that when your software says "Press F10 to continue" you simply press the F10 key. With the original PCjr keyboard you're supposed to press and release the Fn key first then press and release the 0 key. And try doing that three times fast!

You'll also find the calculator style numeric keypad is as easy to enter data with as is a pencil. And, just in case you make a mistake, the separate cursor movement keys will act as your eraser.

Best of all, when you use our 101 Enhanced Keyboard your PCjr becomes even more PC compatible because Fn key compatibility problems are eliminated! As a result, you can run even more PC programs!

The PC Enterprises 101 Enhanced Keyboard comes with its own coiled keyboard cable. The cable plugs into the 2 x 3 pin K connector found on the rear of the PCjr. Select our 101-key keyboard and we think you'll agree, thirty-nine extra keys make a world of difference!

Catalog #71518 Price: \$139.95

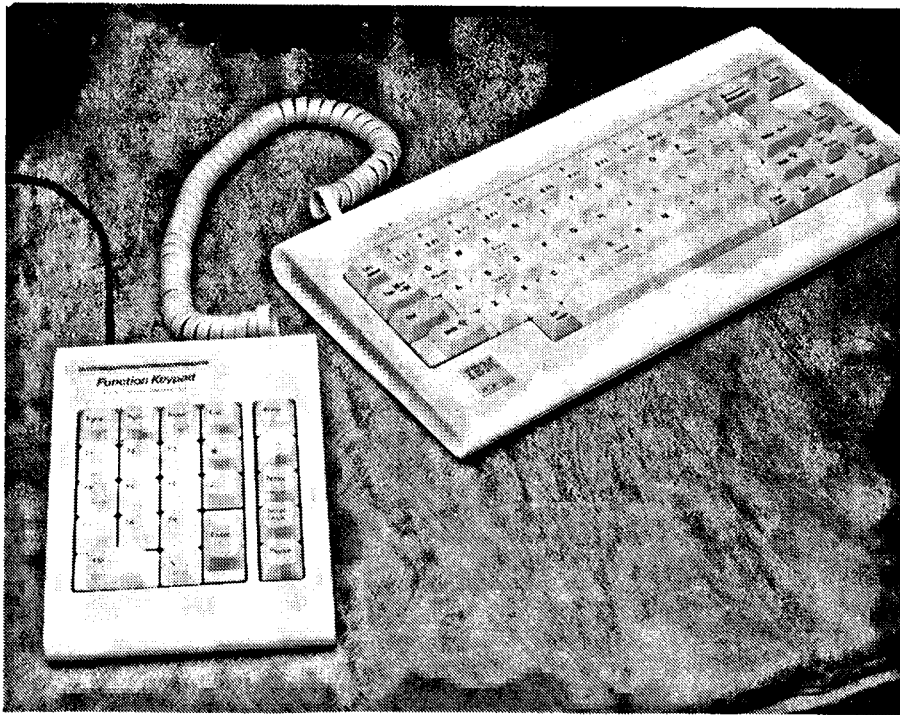
- 101 Keys
- 100% Scan Code Compatible with PC Keyboards
- 12 Function Keys Across the Top
- Dedicated Numeric Keypad with Large Enter Key
- Dedicated Cursor Movement Keys
- Num Lock, Caps Lock and Scroll Lock Indicator Lights
- Dedicated Keys for Print Screen, Scroll Lock and Pause
- Dedicated Page Up, Page Down, Home, and End Keys
- Isolated Escape Key
- Positive Tactile Feel
- Extra Large Shift and Return Keys
- Two Control and Alternate Keys for Ambidextrous Access
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Conversion Kit for PC-XT

Our 101 Enhanced Keyboard can be converted so it works with an IBM PC-XT or compatible. Purchase this kit to use this keyboard with another computer.

Catalog #10036 Price: \$14.95

Function Keypads Add All the Features of a Full Size Keyboard...at a Fraction of the Price!



**You'll
Never
Need to
use the Fn
Key Again!**

Note: This item is currently on Engineering Hold. Please call before ordering.

Most full size PC style keyboards have separate keys for functions such as BREAK, PAUSE, ECHO, PRINT SCREEN, NUM LOCK, and SCROLL LOCK. In addition, they have Page Up, Page Down, Home, and End keys. Plus ten separate function keys.

The keyboard IBM provided with your PCjr does not have any of these keys. While it can generate most of the scan codes which you might need, two or three key combinations, which include the use of the Fn key, must be used.

Until now, PCjr users who wanted separate keys for these functions had to purchase another keyboard. Not so anymore.

Now you have a choice. You can still buy a full size keyboard or you can continue using your compact 62-key keyboard and add our Function Keypad instead!

So, if you like your PCjr keyboard but don't like pressing the Fn key, you'll love our PCjr Function Keypad! Because with the Function Keypad installed you'll never need to press the Fn key again.

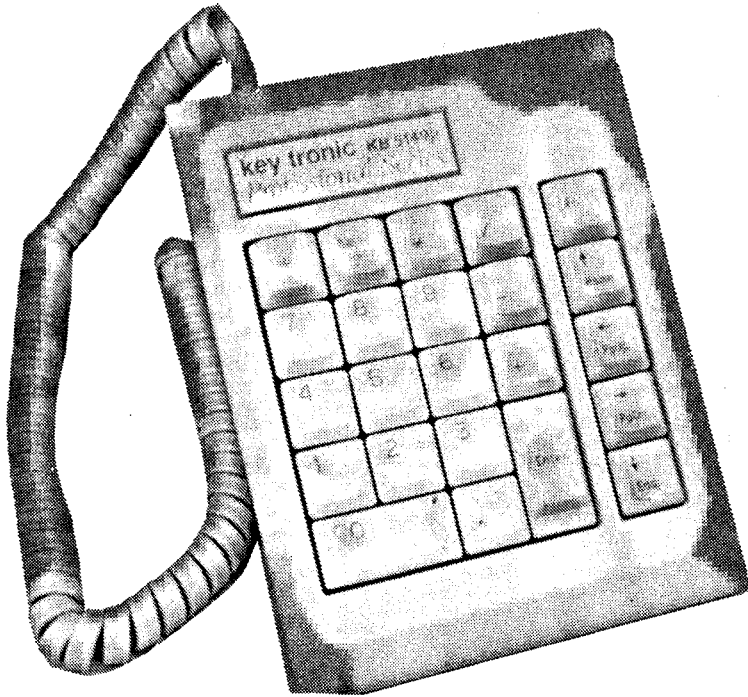
The Function Keypad also provides greater PC compatibility because it transmits the same make and release scan codes as full size keyboards. This also means with our Function Keypad installed you'll be able to run more PC programs than before.

Installation is simple. To connect the Function Keypad to your PCjr use your existing IBM or PC Enterprises keyboard cable (not included and not shown in photo). Then connect the keypad to your original PCjr or fully compatible PCjr keyboard with the coiled cable provided.

The Function Keypad works with either of IBM's PCjr keyboards and all other fully compatible PCjr keyboards.

Catalog #13503 Price: \$39.95

Why Purchase a New Keyboard when all you Really Need is a Calculator Style Numeric Keypad with Separate Cursor Movement Keys?



Reduced! Limited Supply

Now Only \$9⁹⁵

Have you ever wished your keyboard had a separate calculator style numeric keypad and separate cursor movement keys? If so, this keypad may be the answer to your wishes.

The KB 5149jr is made by Keytronic. It is extremely popular with those who use spreadsheet software—because it lets you move the cursor and use the calculator style numeric keypad, without pressing the Num Lock key!

To connect the KB 5149jr to your PCjr use your existing IBM or PC Enterprises keyboard cable (not included and not shown in photo). Then connect the keypad to your original PCjr or fully compatible keyboard with the coiled cable provided.

The Keytronic Numeric Keypad works with either of IBM's PCjr keyboards and all fully compatible PCjr keyboards.

Keytronic Numeric Keypad (KB 5149jr)
Catalog #71511 Sale Price: \$9.95

Twenty-Three Keys!

10 Number Keys

. + - * and / Keys

Four Arrow Keys

**Tab, Backspace, Fn,
and Enter Keys**

Important Notice

THIS MAY BE THE LAST PCjr CATALOG YOU EVER RECEIVE!

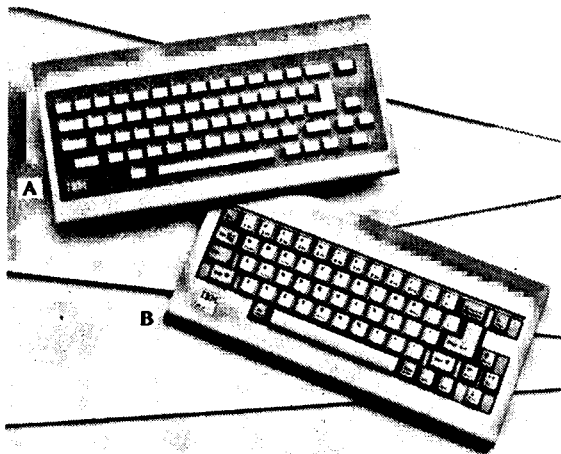
When you call PC Enterprises to request our PCjr Products Catalog we always send you a catalog, but your name is never added to our permanent mailing list. Only active customers qualify to automatically receive new PCjr catalogs.

Check your mailing label to determine your PCE status code. Inspect the upper right hand corner and locate the three asterisks. Following the three asterisks you'll see a letter and two digits.

PCE customers who have placed at least one order during 1991 or 1992 are assigned either a ***C91 or ***C92 status code. These customers automatically received this catalog. If you order anything from this catalog your status will be changed to ***C92. In this case you'll automatically receive our next catalog. If you have already placed an order with PCE during 1991 or 1992 and the letter C does not appear in your status code, simply send us a note, include a copy of your order with PCE and we'll happily upgrade your PCE status!

Other PCjr Keyboards and Accessories

PCjr Wireless Keyboards



A PCjr Chicklet Style Keyboard

New —
Catalog #71507
Price: \$29.95

Reconditioned —
Catalog #78726
Price: \$15

B PCjr Replacement Keyboard

New —
Catalog #71508
Price: \$49.95

Reconditioned —
Catalog #78717
Price: \$25

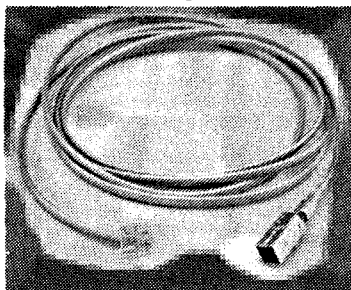
These are the actual IBM Brand PCjr wireless keyboards originally sold and marketed with the IBM label. IBM called them "Freeboards" because they work without wires but we call them a bargain — because at these low prices they can't be beat!

Kids, both young and old, often prefer wireless keyboards when playing games which permit more than one player to compete. Each player gets to use their own keyboard. And you'll prefer to let the kids bang on their very own keyboard instead of yours!

Those of you who run serious software may find it's a good idea to keep a spare keyboard around — just in case your usual keyboard stops working. If this happens while running a program, you'll still be able to use your spare keyboard to save your data. Just think of what that could be worth!

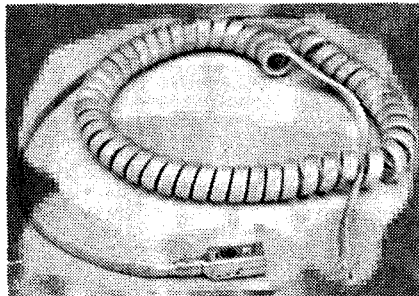
Keyboard Cables for PCjr Keyboards

Straight



Catalog #22502-1 Price: \$18.95

Coiled



Catalog #22501-1 Price: \$19.95

Keyboard cables permit you to use the PCjr wireless keyboard without batteries and without the keyboard facing the system unit. They also eliminate interference and beeping caused by bright lights and other PCjrs. Six feet long.

IBM Brand PCjr Keyboard Cord

This is the original PCjr keyboard cable sold by IBM. Straight. Reconditioned. Limited supply. Call before ordering.

Catalog #78724 Price: \$24.95

New! Extended length PCjr keyboard cable. Use your computer from across the room! Fifteen feet long. Catalog #22502-2 Price: \$28.95

Win A New Product!

Here's a partial list of PCjr products that we've already begun to develop. Complete this form to become a "beta test" customer! Each time we release a new product we'll have a drawing. Winners receive the product free!

When you complete this form check off any product you might purchase if it were available today — then send this form (or a copy) to:

Sneak Peek Product Preview
PC Enterprises
PO Box 292
Belmar, NJ 07719

You don't need to check an item to win and the number of items you do check has no bearing on whether you win. Please PRINT clearly. Submit all entries separately.

- 386 Board
- Video Capture Board
- 9600 Baud FAX Card
- DMA Board
- Cartridge Expansion Box
- MIDI Interface

Other _____

Other _____

Name _____

Address _____

City _____

State _____ Zip _____

Phone () _____

Keyboard Overlays

Package of five overlays which fit the PCjr Chicklet Keyboard.

Catalog #71517 Price: \$2.95

Remember! When you purchase your PCjr expansion products from PC Enterprises you'll be able to add what you want — when you want and you'll never need to worry about compatibility.

Mice, Joysticks, & Pointing Devices

Mice

Microsoft jrBus-MousePage 69

Want to add a mouse that doesn't use the PCjr's "S" connector? Microsoft is the name all the others are compared to!

PCE jrBus-MousePage 68

Prefer lower price to the Microsoft name? The PCE jrBus-Mouse is Microsoft compatible and offers the best bus mouse value for your money. We guarantee it!

Serial MicePage 70

Don't mind using the PCjr's serial connector? Our lowest cost mice plug into the "S" connector located on the rear of the PCjr.

Other Pointing Devices

Tracker BallPage 71

Like to add a mouse, only you don't have much space on your desk? Tracker Balls are also referred to as stationary mice!

Light Pen Page 71

Need a light pen? Here's the best!

Joysticks

IBM Brand JoystickPage 72

Want the lowest cost joystick that we sell? Genuine IBM brand joysticks fit the bill!

CH Products JoysticksPage 72

Prefer CH Product's quality and reputation? The CH Products Mach III joysticks are the finest joysticks we sell!

CH Products FlightStickPage 72

Use Flight Simulator software? Our FlightStick is suited perfectly for your application!

New Product Announcement

PCE jrBus-Mouse



**All the
Features of
the
Genuine
Microsoft
Bus Mouse
for Half the
Price!**

- Lowest cost
- It's an imitation! Not made by Microsoft—instead it's the genuine PCE brand mouse made by PC Enterprises
- Does not use the PCjr's S connector
- 360 Points per Inch Resolution
- Includes our latest Microsoft Compatible Mouse Driver
- Simple plug-in sidocar installation
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Catalog #14049
Introductory Price: \$89.95

Why pay extra for the Microsoft name when you can have a genuine PCE Mouse for much less? Here are all the features of our Microsoft brand jrBus-Mouse at a price that makes sense and saves dollars! Best of all, it's backed by the PCE name!

In response to requests for a low cost PCjr Bus Mouse, PC Enterprises has developed our own Bus Mouse. The PCE jrBus-Mouse is 100% Microsoft compatible although it only sells for half the price!

Are you a true PCjr fan?

Free Mouse Pad!

Do you know why the peanuts are on the front cover of our catalog? If so, chances are you're a true PCjr fanatic and that's why you'll enjoy owning the new PCE Mouse Pad!

Order a PCE jrBus-Mouse at this introductory price and you'll receive the PCE Mouse Pad Free! The PCE Mouse Pad was designed exclusively for PCjr fanatics and is featured on page 99 of the "Other Products" section of this catalog.



Microsoft jrBUS-Mouse

**At Last, a
Mouse for the
PCjr That
Does Not Use
the PCjr's
S
Connector!**



Until recently, all stand alone mouse products offered for the PCjr were serial devices – and that meant they had to be plugged into the PCjr's S connector.

Here's the problem. The PCjr only has one S connector. So if you add a serial mouse to your PCjr, you won't be able to easily connect an external modem, serial printer, or a plotter. Most PCjr users therefore find themselves asking "Should I add a Mouse or a Modem?"

Introducing the Microsoft jrBus-Mouse. The first mouse we've ever offered for the PCjr that's 100% compatible with external modems and other serial devices because this mouse does not plug into the PCjr's S connector.

This product is now available thanks to combined efforts of Microsoft and PC Enterprises. We selected the Microsoft Mouse because Microsoft has always been the one all

others are judged by. With its sleek and elegant design the Microsoft mouse is easy to maneuver and comfortable to hold.

With each Microsoft jrBus-Mouse you'll receive the PC Enterprises jrBus-Mouse Sidecar. The sidecar plugs into the PCjr's sidecar expansion bus and is compatible with all other IBM, PC Enterprises, and most other PCjr add-on products.

We think we've put together a great team. If you wanted to select the finest and most compatible mouse that you could find which other Mouse would you choose but the genuine Microsoft Mouse? With the Microsoft name you're assured full compatibility with all your software.

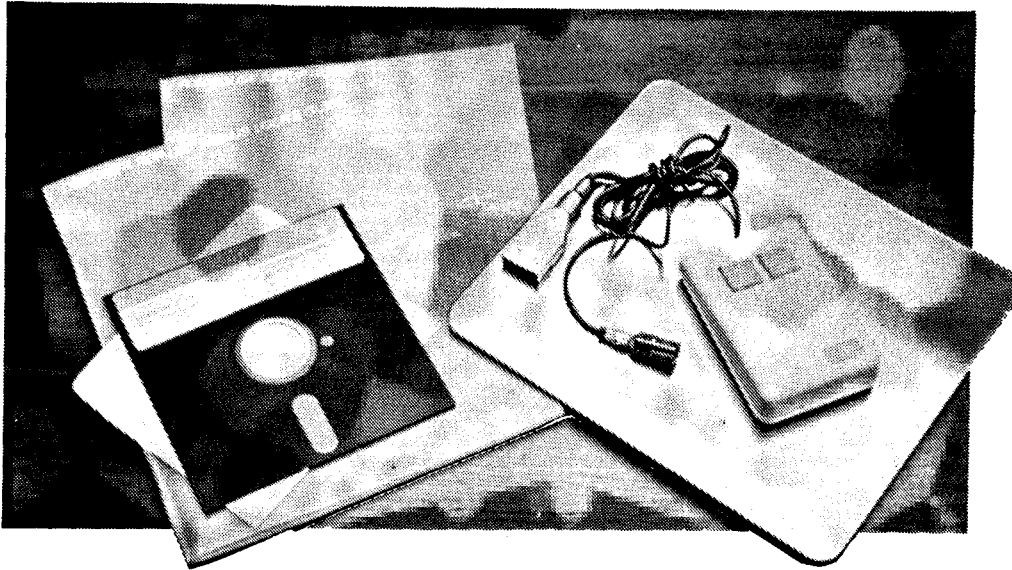
And if you were to select a company to design a special PCjr Bus interface that would not limit your future expansion opportunities, would you choose any company other than PC Enterprises?

- Not an imitation. This is the genuine Microsoft Mouse made by Microsoft
- Does not use the PCjr's S connector
- 400 Points Per Inch Resolution
- Only requires an area the size of a postage stamp to move anywhere on the screen
- Adjustable acceleration and sensitivity
- Includes the latest Microsoft Mouse Drivers
- Simple plug-in installation
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to Continue Supporting the PCjr

Microsoft jrBus-Mouse
Catalog #14044 Price: \$149

**Microsoft jrBus-Mouse
and Paint Program**
Catalog #14045 Price: \$169

Serial Mice



A mouse is a hand held pointing device which makes even the most complex software package fun to run. Click a button and a menu appears on the screen. Now move the mouse until the arrow on the screen points at the command you wish to select. Finally, click the button again... and your wish is your command. All without taking your eyes off the screen!

But much more important compatibility problems are rare indeed because Mouse Systems and Microsoft are the two standards in the industry.

Optical mice are sometimes preferred to mechanical mice which use a ball because there are no moving parts to wear out. And no balls to keep clean.

Either mouse will plug into the PCjr's "S" connector located on the rear of the system unit. The Mouse Systems optical mouse also plugs into the light pen (LP) connector.

A Graphics Package Which is Fun to Use

In just a few short minutes our paint programs will turn your PCjr into a powerful graphics development tool. You'll be able to draw pictures quickly and easily because these programs are especially easy to use with a mouse.

Point at the pencil and click the mouse. Now draw a quick sketch just as if you were holding the pencil in your hand. Next, point at the spray can and spray on some color. Make a mistake? Point at the eraser and click again. It's fun and easy.

Our paint programs also let you create signs, banners, and even load and edit graphs and pictures created with other programs such as Lotus. A long long list of printers are supported so you'll be able to integrate the graphs, charts and diagrams you create with text printed with your favorite word processing software.

Mouse Systems

Select this mouse if you are not presently using the PCjr's serial port and you want to purchase the Mouse Systems optical mouse. Optical mouse pad included.

Mouse Only

Catalog #75502 Price: \$99

Mouse & Paint Program

Catalog #75513 Price: \$139.95

Low Cost Serial Mouse

Purchase this mouse if you are not using the PCjr's serial port and you want to purchase the lowest cost Microsoft compatible mouse that you could find. Mouse Pad optional but not required.

Mouse Only

Catalog #15509 Price: \$59.95

Mouse & Paint Program

Catalog #15510 Price: \$79.95

Tracker Balls and Light Pens



Our Serial Tracker Ball

Tracker Balls are often thought of as stationary mice because they work with all programs designed to use a mouse—however Tracker Balls are often preferred because they are stationary, and therefore require less desk space.

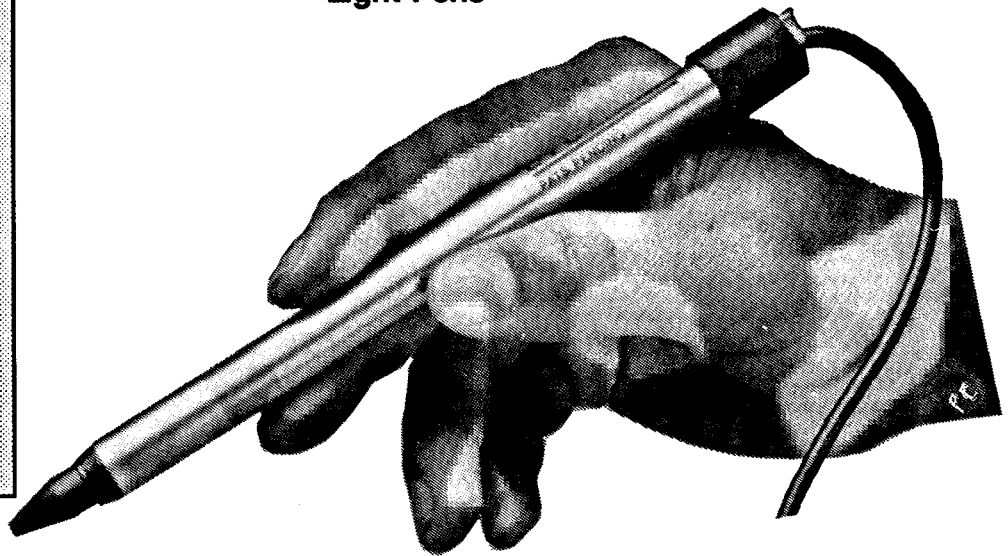
The first time you rest your hand on our Tracker Ball you'll understand why it's so popular. With its unique hand-fitting design and thumb-operated ball, the Tracker Ball offers more ease, comfort, and productivity than other pointing devices.

**Serial Tracker Ball
with a PCjr Connector**
Plugs into the PCjr's S connector.

Catalog #75519 Price: \$69.95

- **Stainless Steel Body for Durability**
- **Comes Complete with Application Software Package**
- **Operates with all Light Pen Software**
- **Includes Game Software**
- **Mouse Emulation Software for Prodigy and other programs under development. Ask for details.**

Light Pens



A light pen is a bridging device between man and machine. It permits people to operate computers without taking their eyes off the screen. Much more important, a light pen permits computer operation without hampering your thought process or your creativity.

When you use a light pen you point to what you want. The light pen therefore offers a natural form of communication. One hand operation offers precise computer control with less effort and greater efficiency.

As fast as you can point to what you want to do, it is done. The ease and speed with which you can use your computer will amaze you. The light pen is the nearest thing to your normal thought process and frees you to do something the computer can't do, create.

Light pens are especially popular with those who write their own programs because the light pen commands are easy to use and fun to program with. Use the light pen to select options from a menu instead of the keyboard.

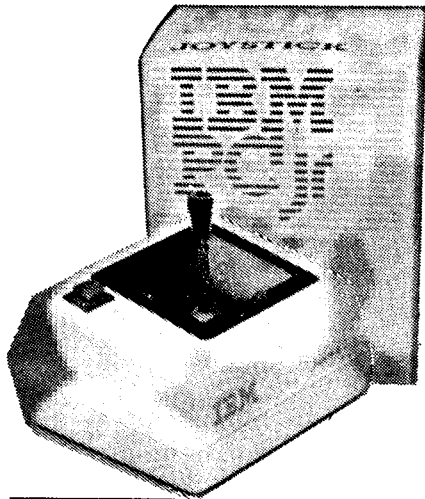
Software is included so you can start using your light pen right away. Software is provided which permits you to create graphic presentations, play Solitaire, Reversi, Backgammon, or an educational game of World and United States Geography.

In addition to the programs supplied, the light pen will work with all other programs designed to work with a light pen. The Light Pen plugs into the LP connector on the rear of the PCjr.

Catalog #75101 Price: \$189

Reduced! \$129

The Right Joystick for Every Member of Your Family



- Lowest Cost
- Conventional Style
- Two Fire Buttons
- Spring Centering or Free Motion
- Designed for General Purpose Applications
- One Year Warranty with PC Enterprises

IBM Brand PCjr Joystick
Catalog #74506 Price: \$29.95

Sale Price: \$19.95

The PCjr comes standard with two built in joystick ports. This means you can add joysticks to the PCjr without purchasing a "game card", or anything else. On the rear of the PCjr you'll find two connectors which are marked with the letter "J". This is where the joysticks attach.

To connect a joystick to the PCjr the joystick must have a 2x4 pin connector which fits into the PCjr's joystick port. Naturally, all of the joysticks on this page are provided with this connector.

How many joysticks you need depends upon the programs you run. Some programs only require one joystick while others, especially those which permit two players to compete, require two joysticks.

Genuine IBM Brand Joysticks

The IBM brand joystick was made specifically for the PCjr, and is still the most widely used PCjr joystick ever. It's a good choice for general purpose applications.

Note: Our suppliers stock of this joystick is now completely exhausted. Don't waste time. When we run out, the genuine IBM brand joystick will be gone forever!

CH Products Mach III Joystick

- Precision Movement
- Superior Quality
- Conventional Style
- Three Fire Buttons
- Spring Centering or Free Motion
- Designed for General Purpose Applications
- One Year Warranty with PC Enterprises

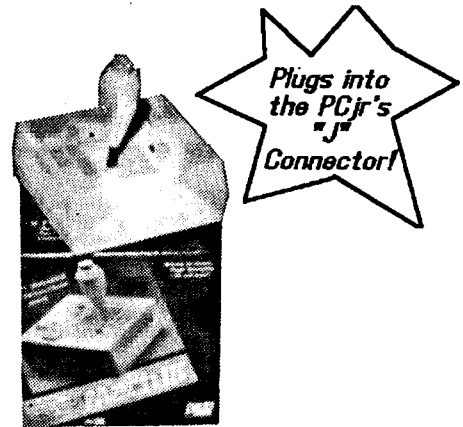
Mach III Joystick for the PCjr
Catalog #74509 Price: \$49.95

Mach III Joystick—Package of Two
Catalog #10039 Price: \$94.95

Here's a great joystick for kids of all ages who are serious about the software they run. If you demand accurate and precision movement when you use a joystick, the CH Products Mach III joystick is the right joystick for you.

CH Products has been long established as a leader in joystick technology. Their joysticks are not considered toys, but precise instruments which control cursor movement.

Each joystick has three fire buttons. Two buttons are located on the base. The third button is conveniently located at the top of the shaft.



CH Products FlightStick

- Precision Movement
- Superior Quality
- Superior Operation with Flight Simulation Software
- Contour pistol grip looks and feels like a real flight stick
- Audio and tactile feedback fire buttons add to reality of flight simulation
- One Year Warranty with PC Enterprises

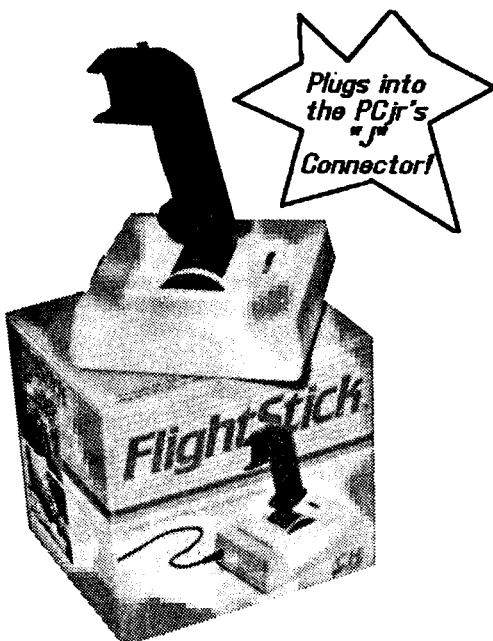
Note: All CH Products joysticks on this page are modified by PC Enterprises for PCjr compatibility. As a result, these joysticks are covered by PC Enterprises standard one year warranty with PCE, instead of CH Product's usual 90 day warranty.

The FlightStick has been designed specifically to provide the ultimate in hand comfort and easy one hand access to the two buttons used in fast paced action games. The pistol grip handle design and prime button locations reduce fatigue and improve response time to more realistically simulate actual flying conditions, giving you the edge against the elements.

While the CH Products FlightStick is the most superior joystick on the market for flight simulator software, it can also be used with other programs. It is especially well suited for computer aided design and other graphics applications where a pistol grip is preferred to conventional designs.

In addition to the usual two axes provided by other joysticks, the FlightStick has a third control which permits you to utilize the throttle control feature of most flight simulation software. The third axis control does exactly the same thing as the Y axis control of the B joystick.

CH Products FlightStick for the PCjr
Catalog #74508 Price: \$79.95



The Enhanced Model PCjr has two cartridge expansion slots.

Cartridges

The PCjr works best with a QuickSilver, jrVideo, Keyboard Buffer, and Compatibility cartridge all installed and used at the same time. Since the PCjr only has two cartridge slots, Combo Cartridges are the most popular. A BASIC or a Configuration Plus Cartridge is used to run programs written in BASIC (.BAS extension), and also to write your own BASIC programs.

Compatibility CartridgePage 74

Fed up with compatibility issues? Here's the most important cartridge we've ever produced.

QuickSilverPage 77

Tired of waiting for the PCjr to count up its memory? QuickSilver lets your PCjr count its memory almost instantaneously and applies INT 9 patches for greater compatibility.

jrVideoPage 76

Want to speed up the PCjr's video routines? Dramatic improvement is possible.

Keyboard BufferPage 76

Like to input up to 47 characters even while the PCjr's disk drive is operating—without the PCjr beeping and without missing a single character?

Combo v1.0Page 77

Combo v1.0 combines the jrVideo and Keyboard Buffer routines in one cartridge.

Combo v2.0Page 77

Combo v2.0 combines QuickSilver, jrVideo, and Keyboard Buffer all in one cartridge.

Combo v3.0Page 77

Want an all-in-one cartridge? Combo v3.0 combines QuickSilver, jrVideo, Keyboard Buffer, and Compatibility routines and is therefore the undisputed best choice!

Cartridge BASICPage 75

Like to run BASIC programs or write your own? Cartridge BASIC supports all PC graphic modes plus the PCjr's 16-color graphic and 3-voice sound capabilities.

Configuration PlusPage 78

Want to run programs which require BASIC, or to write your own BASIC programs, and you don't care about using the PCjr's enhanced graphics or sound capabilities?

Game CartridgesPage 80

More interested in games? Select as many as you like because you'll use one at a time.

Siamese Cartridge SlotsPage 75

Running out of slots? Here's a way to get two cartridges in one slot!

Recommendation: For optimum performance and compatibility install a Combo v3.0 in one slot, and a Configuration Plus or BASIC Cartridge in the other slot. To use a game cartridge, unplug the BASIC or Configuration Plus cartridge, then insert the game cartridge in the vacated slot. This way you'll still benefit from Combo cartridge enhancements while playing the cartridge game. If your system board has the Tandy Modification, and you have found Tandy programs which do not work correctly on your PCjr, try a Compatibility Cartridge.

New Product Announcement

Compatibility Cartridge

Most PC programs work fine on the PCjr as long as the PCjr has been expanded so it meets the hardware requirements of the program. This basically means if your PCjr has adequate memory and other devices (such as printers, disk drives, or display adapters) that the program requires the program will run. Nevertheless, there are times that PCjr users encounter PC or Tandy programs which do not run correctly on their PCjr. The Compatibility Cartridge is a product that solves most of these incompatibilities!

Most compatibility problems exist because the PCjr is not 100% BIOS and DOS compatible with other computers. While it was IBM's intention to obtain 100% compatibility they failed to achieved this goal. Improperly coded BIOS routines (bugs in BIOS) cause the majority of compatibility problems which PCjr users encounter.

Compatibility is a major concern—and even 99% is not good enough. That's why PC Enterprises has spent years seeking out programs which do not run on a PCjr. These incompatible programs have always been analyzed to determine the source of incompatibility, but until now, our efforts only resulted in disk based utilities and software patches which permitted otherwise incompatible programs to run on the PCjr.

Unfortunately, there's a limit to what you can do with disk based patches (software provided on diskettes). That's because the PCjr's BIOS runs from ROM and disk based patches and other software runs from RAM. The problem is RAM is slower than ROM (because the PCjr inserts wait states in RAM cycles to accomplish video and memory chip refresh). ROM does not require refresh. These added wait states slow down disk based software and prevents many routines which replace BIOS routines from working correctly when executed from RAM.

Fortunately, IBM gave the PCjr two cartridge slots. These slots allow PCjr users to run software from ROM (instead of RAM). Programs that execute

from ROM cartridges therefore run at the same speed as the PCjr's ROM BIOS. Or, in other words, when software is provided on a cartridge it can do anything the PCjr's BIOS can do!

The Compatibility Cartridge corrects every bug in the PCjr's BIOS that we know of. In addition, it also corrects bugs in DOS which show up on PCjrs due to hardware differences. But that's not all. The Compatibility Cartridge even permits the PCjr to run many not-so-polite applications which bypass the usual BIOS and DOS interfaces and directly access the hardware!

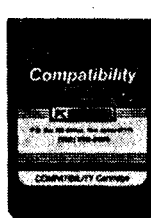
Best of all, the Compatibility Cartridge works hand in hand with the new JRCONFIG.SYS utility (also included) and is therefore simple to use! When used in conjunction with JRCONFIG all you need to do is plug it in!

The Compatibility Cartridge is a product of many years of experience debugging programs which did not run on the PCjr. It makes the PCjr 100% BIOS and DOS compatible with other IBM computers—as IBM intended it to be.

The Compatibility Cartridge also allows both DR DOS 6.0 and DOS 5.0 to work correctly on the PCjr. In addition, it allows the unpatched version of every program PCE has ever patched to run correctly without patching. If you've ever become frustrated because you couldn't get a PC compatible program to run on your PCjr this may be the most important PCjr cartridge you can buy!

Catalog #18032 Price: \$39.95

The Compatibility Cartridge is a brand new product which is expected to be released soon. Call to determine availability before ordering. The Compatibility Cartridge is intended to allow the PCjr to run all programs which do not run now due to BIOS or DOS incompatibilities. Incompatibilities caused by programs which bypass BIOS and DOS and directly access the computer's hardware can not always be corrected, nevertheless, when possible these problems will be corrected too. If future releases are made upgrades will be available.



Cartridge BASIC

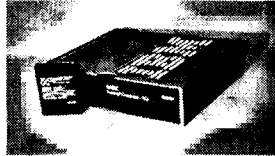
Cartridge BASIC is the BASIC designed specifically for a PCjr.

If you want to run BASIC programs, or to write BASIC programs which utilize the PCjr's enhanced graphics or sound capabilities, then Cartridge BASIC is the only BASIC you'll need.

Just the Cartridge
Catalog #18031 Price: \$79

Just the Manual
Catalog #79022 Price: \$49.95

Cartridge BASIC and Manual
Catalog #78722 Price: \$119



Note: Most of the BASIC Cartridges that we have left are used. When you order this item, you may receive a reconditioned cartridge, however you'll have no trouble using the product because it has been thoroughly tested, and is fully warranted by PC Enterprises.

Also Available—

Hands on BASIC Manual
Personal computer BASIC self-tutor for the IBM PCjr. Teaches you the important ideas about computers and programming.

Catalog #85031 Price: \$14.95 **SALE PRICE: \$9.95**

Cartridge BASIC Features

Additional Screen Modes

Six screen modes with 2, 4, or 16 colors are available, depending upon the screen mode

Advanced Graphics

Enhanced statements are CIRCLE, PUT, GET, PAINT, DRAW, VIEW, WINDOW, PALETTE, PALETTE USING, and PCOPY. These operations make it easier to create more complex graphics.

Advanced music support

The PLAY statement allows easy usage of the built-in speaker to create musical tones and can support multi-voice tones to your television or external speaker

Communications

The TERM statement is used to communicate with other systems.

Siamese Slots

Twice as Many Cartridge Slots for your PCjr

Here's a PCjr product that lets you install twice as many cartridges in your PCjr.

Just plug a Siamese Cartridge Slots product into either PCjr cartridge slot and two new cartridge slots are now provided.

You can insert one Siamese Cartridge Slot product in each PCjr cartridge slot, permitting a total of

four cartridges to be used at the same time!

Note: If two cartridges use the same cartridge select line, they cannot be used at the same time.

Also, some cartridges do not use any cartridge select lines and therefore will not conflict with other cartridges. Contact PC Enterprises for more information on other cartridges you might have.

Siamese Slots
Catalog #14805 Price: \$24.95

Cartridge	Cartridge Select Line Used
Keyboard Buffer	CS2
JrVideo	CS3
Combo (all versions)	CS3
QuickSilver	None
Compatibility	CS5
Configuration	None
Configuration Plus	None
Cartridge BASIC	CS5
PCE HardBIOSjr	CS4
Display-Master	CS4
Racore PC Identifier	None



Three More Cartridges which Improve the Personality of your PCjr

Here are three great cartridges to upgrade and enhance your PCjr. All three make your PCjr easier and more enjoyable to operate, because they actually change the computer's Basic Input Output Service (BIOS) routines—thus improving the personality of your computer.

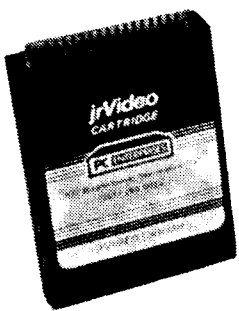
The jrVideo Cartridge speeds up the computer's screen writing routines.

The Keyboard Buffer Cartridge lets you continue using your keyboard even while the computer pauses so it could access the disk drive. It also corrects several bugs in DOS which often cause PCjr's to hang up and crash without warning.

The QuickSilver Cartridge makes the PCjr boot quickly and silently. QuickSilver also enables you to run many PC programs which do not respond correctly to a PCjr's keyboard.

The three cartridge routines can be purchased in separate cartridges—or combined together in one. Our combined cartridges, called Combo Cartridges, are by far the most popular as they only take up one cartridge slot. All cartridges work in either slot, and all are compatible with IBM's Cartridge Basic and all other PCE Cartridges.

JrVIDEO CARTRIDGE



"The PCjr is much slower than the PC and PC-XT. It seems to take longer to do everything. Directories take forever to finish scrolling and spreadsheet response is really sluggish. And games. They run so slowly they're just not a challenge."

Sound familiar? These are common assaults on the PCjr which are often launched from those who operate a PC. And

for the most part they're legitimate. The PCjr does take longer to do certain things.

Other acceleration products, such as our jrExcellerator Speed up Board increase the computer's clock speed—thereby enabling the computer to execute instructions more quickly. But this is not enough. Computed results are often meaningless until the computer displays information on the screen.

Here's where jrVideo will help. Three routines are included to speed up the PCjr's ability to write information on the screen. The improvement you see will at times be quite dramatic (see table in next column).

The first routine is activated automatically when the cartridge is plugged in. Sluggish BIOS screen writing routines are replaced with significantly faster jrVideo routines. All programs which use BIOS for screen writing now display information faster than ever before.

The second routine activates DOS support of the video speed up. The use of this routine is strictly optional (it causes the PCjr to become too fast for some people).

Once activated text will dash on-to and off-of your screen so quickly that you're certain to become very familiar with the key on your keyboard labeled "Pause".

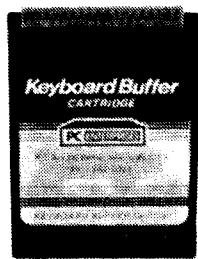
The third routine permits the PCjr to recognize added memory—without slowing down screen writing routines. In addition, the jrVideo Cartridge will also let you run more PC programs because it provides better mode defaults, and better register protection.

JrVideo Cartridge Catalog #18002 Price: \$29.95

Activity	640K PCjr	640K PCjr w/jrVideo	640K PCjr w/jrVideo & jrExcellerator
DIR Test	32.9s	12.2s	6.2s
TYPE Test	70.8s	13.9s	6.9s

We wanted to publish test results for actual entertainment, word processing, and spreadsheet applications, but we had one problem. Our finger couldn't press the button on our stop watch fast enough! So we decided to publish the results of our DIR and TYPE tests instead—this way we could publish repeatable results and you could more reliably calculate percent improvement. The DIR test was how long it took to display the 171 files in the M:\1991CAT directory of our hard drive. The TYPE test was how long it took to "TYPE" out the JRCONFIG.DOC v2.10 file on a basic PCjr with 640K. By the way, all tests were performed in PCE memory above 128K and yes, M: is the drive letter used by our PCjr's hard drive!

KEYBOARD BUFFER CARTRIDGE



For years the PCjr was sharply criticized because its keyboard couldn't be used while the disk drive was spinning. Other computers do not have this restriction because they have DMA—a feature which permits both the keyboard and disk drive to be used at the same time.

But the PCjr doesn't have DMA. That's why the computer beeps if you use your keyboard while the disk drive is spinning. These beeps occur because the PCjr is too busy supervising a diskette operation to deserialize keyboard information.

Once you use a computer which has DMA the PCjr will seem sluggish for this very reason. Most PCjr users simply learn to accept as fact: when the PCjr is reading or writing to its disk drive, you must wait for the PCjr to finish doing what it wants-to-do before you tell it what you want-it-to-do!

Well, PCjr users need not remain patient anymore! With the Keyboard Buffer Cartridge installed a new keyboard routine replaces the usual BIOS routine that handles keyboard input. As a result, you can type up to 47 characters while the disk drive is spinning—permitting the PCjr's keyboard to work like it would if the PCjr had DMA.

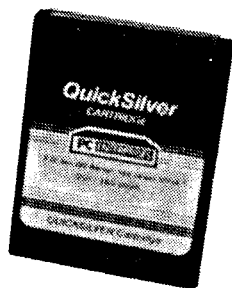
And if you're still using DOS 2.1, the cartridge will also improve system reliability. It will correct several bugs in DOS which relate to the PCjr's keyboard and NMI routines. These bugs are known to cause PCjrs to "hang up" and "crash" without warning. With the cartridge installed and activated, the DOS NMI bugs are exterminated!

The next time you find yourself waiting for the PCjr's disk drive to stop spinning remember that you don't need to wait any longer. Whether you choose the Keyboard Buffer Cartridge alone, or combined with our jrVideo and QuickSilver Cartridges, this is one PCjr product we don't think you should be without. We like the Keyboard Buffer Cartridge a lot and we're almost certain it will become one of your favorite PCjr products, too!

Keyboard Buffer Cartridge Catalog #18001 Price: \$29.95

QUICKSILVER CARTRIDGE

When the PCjr is first turned on the computer counts up its memory then sounds a beep to indicate all is well. PCjr users often complain that this start up process takes too long—and also that the beep heard at the end of the start up process is annoying. The QuickSilver Cartridge is designed for anyone who would prefer their PCjr to power up quickly and silently.



Quickly because QuickSilver replaces the usual IBM memory test with a new test that's so fast and efficient that you'll hardly notice any delay at all. And silently because the QuickSilver Cartridge eliminates that annoying beep that you hear at the conclusion of the usual memory test. With QuickSilver installed, your PCjr only beeps when an error is detected during the Power On Self Test (POST).

What's even more important to most is that QuickSilver corrects a bug in the PCjr's keyboard handling routine (INT 9). This bug will cause certain PC programs to display two characters on the screen each time a single key is pressed, or, not to display any character on the screen at all. So with QuickSilver installed, you'll be able to run more PC programs than ever before!

Activity	640K PCjr	640K PCjr w/QuickSilver	640K PCjr w/QuickSilver & jrExcellerator
Count to 640K	26.9s	2.6s	1.4s

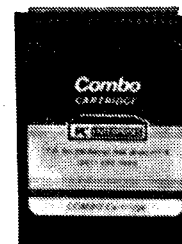
That's right. From 26.9 to 1.4 seconds!

To illustrate the Quicksilver advantage, we set up a PCjr with 640K and then turned the computer on. We timed how long it took to count up to 640. Then, we installed a Quicksilver Cartridge and did the same thing. And just to show you how you could further optimize PCjr performance with PCE products, we installed a jrExcellerator—then ran our test one more time.

QuickSilver Cartridge Catalog #18027 Price: \$29.95

COMBO CARTRIDGE Version 1.0

The Keyboard Buffer and jrVideo Cartridge are available combined on a single cartridge. Order the Combo Cartridge version 1.0 and receive these two great products in one.



Combo Cartridge Version 1.0
Catalog #18012 Price: \$54.95

COMBO CARTRIDGE Version 2.0

Combo version 2.0 combines the three original PCE cartridges: Keyboard Buffer, jrVideo, and QuickSilver—all in one cartridge!

Combo Cartridge Version 2.0
Catalog #18028 Price: \$69.95

COMBO CARTRIDGE Version 3.0

Combo version 3.0 combines all three original PCE cartridges—Keyboard Buffer, jrVideo, and QuickSilver plus our new Compatibility Cartridge, making Combo version 3.0 the most useful PCjr cartridge you can buy!

Combo Cartridge Version 3.0
Catalog #18034 Price: \$89.95

Combo Version 2.0 Upgrade

If you previously purchased a Combo Version 2.0 cartridge and would now prefer to have the Combo Version 3.0 cartridge, you can upgrade to Combo Version 3.0 by paying only for the routine which you do not already have—plus a ten dollar labor charge. Send your Combo Version 2.0 cartridge to PC Enterprises and we'll add the Compatibility routines for you! In addition, we'll upgrade existing Keyboard Buffer, jrVideo, and QuickSilver routines to the current version(s).

To have your existing Combo Version 2.0 cartridge upgraded mail your cartridge(s) in a small padded envelope or box to PC Enterprises, 2400 Belmar Blvd, Building B16, Wall, NJ 07718. On the outside of the package write the words, "Cartridge Upgrade" making sure the words can be read without opening the package. Include \$49.95 plus \$5 for return shipping and handling.

Sorry, only Combo Version 2.0 can be upgraded to Combo Version 3.0. Keyboard Buffer, jrVideo, QuickSilver, and Combo Version 1.0 cartridges can not be upgraded to Combo Version 2.0 or Combo Version 3.0 because they use a different circuit board and EPROM.

Configuration Plus Cartridge

When the PCjr is first turned on the computer defaults to operation in the 40 column mode with a single diskette drive. In addition, the PCjr also permits programs which check the computer's system identification byte to determine that they're running on a PCjr.

The Configuration Plus Cartridge allows you to change this default configuration. The Configuration Plus Cartridge also includes key-lock indicator lights. It has three lights on it which indicate the status of your Caps Lock, Num Lock and Scroll Lock keys.



- PC/PCjr Identifier Switch
- Recognize Additional Disk Drives without Software
- Start in either the 40 or 80 Column Mode without Software
- Start in Color or B&W Mode without Software
- Caps Lock, Num Lock, and Scroll Lock or Insert Mode Indicator Lights
- Our Compatibility Guarantee
- Our Satisfaction Guarantee
- Full Year Warranty with PC Enterprises
- PC Enterprises Quality, Service, Compatibility, and Commitment to continue Supporting the PCjr

Equipment Determination Switches

Most other computers have switches to set up the type of display (color or monochrome, 40 or 80 column) and the number of drives—the PCjr does not. The Configuration Cartridge adds the switches IBM left out. Just set the switches and plug in the cartridge.

These switches allow you to use the PCjr's built-in diagnostics (CTRL-ALT-INS) to test all your floppy drives and are especially desirable when using other PCjr add-on devices which permit you to operate without memory management software (such as our JrExcellerator and Display Master VGA Sidecar).

PC/PCjr Identifier Switch

This switch permits you to change the System Identification Byte of your computer from that of a PCjr to that of an IBM PC. When the switch is set in the PC Mode, programs which check the System Identification Byte of the computer will be fooled into running as they would on an IBM PC.

While fooling a program into running as it would on an IBM PC will not turn your PCjr into a PC, there are times when it permits you to run certain programs. This is often desirable if you have added additional hardware such as memory, a speed up board, VGA sidecar or DMA device, and you are unable to use your new hardware with a certain program because the program detects that it's running on a PCjr. For example, certain software titles published by Sierra-on-Line require an 8MHz or faster computer to run well.

That's why these programs display a "will not run on PCjr's" message. When you use the Configuration Plus Cartridge to tell the program that your PCjr is really a PC—the program runs fine. While you'll still appreciate the benefits of a speed up board, at least you'll be the judge of whether or not its needed.

Here's another situation where you'll need a Configuration Plus Cartridge. Let's say you've added our Display Master VGA sidecar and then try to run a program which supports the PCjr's 16-color mode (such as most Sierra products). If the program checks the computers ID byte and determines that you're using a PCjr, you may have trouble getting the program to run in VGA mode. The Configuration Cartridge solves this problem too!

Key-Lock Indicators

Have you ever started typing on your keyboard only to look up and find you were in the Caps Lock Mode—and you didn't want to be? The Configuration Plus Cartridge has an indicator light which goes on whenever your computer is put in the Caps Lock mode. It also has an indicator light for Num Lock and one for Scroll Lock. And because most people rarely use their Scroll Lock key you can change the Scroll Lock Indicator to an Insert Mode indicator—because you probably use your Ins key every day.

Run Basic Without the Basic Cartridge!

The diskette version of BASIC can be found on your DOS diskette. While diskette BASIC runs fine on an IBM PC, a "Cartridge required" message is displayed when you try to run diskette BASIC on a PCjr.

The Configuration Plus Cartridge solves this problem too! Just flip the PC/PCjr switch to the PC position and now, when you try to run diskette BASIC, it runs exactly the way it does on an IBM PC.

The diskette version of BASIC is often preferred to Cartridge Basic because it is the same Basic that the IBM PC uses. In addition, diskette BASIC permits you to run slightly larger programs than cartridge BASIC and does not cause your PCjr to crash when you use Memory Management Software.

Often people who already have the IBM BASIC Cartridge replace it with the Configuration Plus Cartridge. When this is done the slot which is now dedicated exclusively to the BASIC Cartridge lets you take advantage of the other features built into the Configuration Plus Cartridge without taking up another cartridge slot.

Configuration Plus Cartridge
Catalog #18026 Price: \$29.95

Spinnaker's Line of Early Learning Games for Your Child's Growing Mind

Computers are everywhere. They're at work. At home. And in the schools. That's why it makes sense to introduce your children to computers at a very young age.

These PCjr game cartridges are designed to teach children computer fundamentals. They help your child become familiar with the return key, the space bar, the cursor, menus, arrow keys, and the mechanics of starting and restarting a program.

Children who are already familiar with computer fundamentals have an important advantage when computers are first introduced in the school. These game cartridges therefore give your children, or your grandchildren a head start.

Special Offer

Cartridge Software Bonanza

Buy any two at the same time and get the third FREE! The Spinnaker Cartridge Software Bonanza Package includes Fraction Fever, Kindercomp, and Facemaker. Hurry. Supplies are limited, so this offer will not last forever.

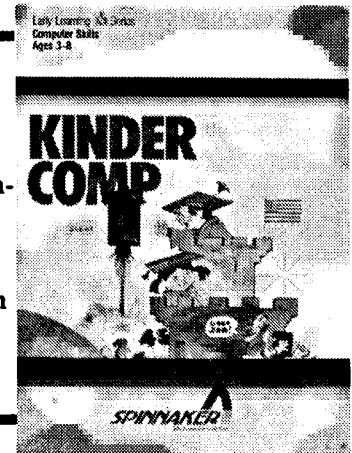
Spinnaker Cartridge Software Bonanza
Catalog #10024 Price: \$19.95

KINDERCOMP

Introduce your child to numbers, shapes, letters, words and drawings.
Ages 3 to 8.

KINDERCOMP is a game that allows very young children to start learning on the computer. It's a collection of learning exercises that ask your children to match shapes and letters, write their names, draw pictures, or fill in missing numbers. And KINDERCOMP will delight kids with colorful rewards, as the screen comes to life when correct answers are given. As a parent, you can enjoy the fact that your children are having fun while improving their reading readiness and counting skills.

Kindercomp Game Cartridge for the PCjr, Catalog #18004 Price: \$9.95



FRACTION FEVER

FRACTION FEVER brings fractions into play. Ages 7 to adult.

FRACTION FEVER is a fast-paced arcade game that challenges a child's understanding of fractions. As kids race across the screen in search of the assigned fraction, they're actually developing a basic understanding of what a fraction is and of relationships between fractions. They're even discovering that the same fraction may be written in a number of different ways. All in all, Fraction Fever encourages kids to learn as much as they can about fractions—just for the fun of it!

Fraction Fever Game Cartridge for the PCjr, Catalog #18005 Price: \$9.95

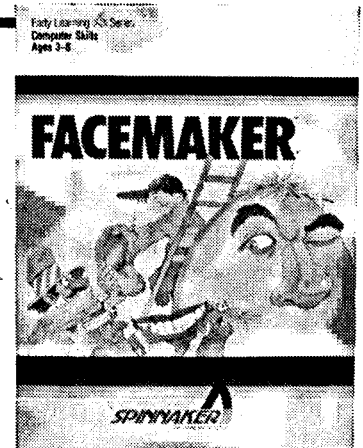


FACEMAKER

FACEMAKER makes faces fun. Ages 3 to 8.

FACEMAKER lets children create their own funny faces on the screen. Once a face is completed, your children will giggle with delight as they make it do all kinds of neat things: wink, smile, wiggle its ears, or whatever their imagination desires. Plus, FACEMAKER helps children become comfortable with computer fundamentals such as menus, cursors, the return key, the space bar, simple programs and graphics. And, FACEMAKER won't make parents frown because their children will be safe at home making friends with the computer.

Facemaker Game Cartridge for the PCjr, Catalog #18003 Price: \$9.95



PCjr Game Cartridges



Limited quantities are available and supplies are getting very low. Cartridges may be repackaged by PCE and provided with reproductions of the manual. All are brand new and are supported and warranted by PC Enterprises for a full year.

Game Cartridge Clearance Half Price Sale!

Scuba Venture by IBM

Explore treacherous underwater caverns and avoid perilous sea creatures as you search for buried treasure. The object of Scuba Venture is to score as many points as you can by collecting rare fish and by opening locked treasure chests with the keys that you can find lying on the ocean floor. But be careful. Some of the fish are poisonous to the touch, and electric eels can be fatal. And seaweed, seahorses, and cavern walls can block your diver's way and cause your diver to be swept into the hungry jaws of the untiring, deadly fish that chase you on your journey. Joysticks optional.

Catalog #18020 Price: \$29.95 **Sale \$14.95**

Mine Shaft by IBM

Danger! Flood waters have short-circuited your robot miners...and now they're running berserk. How can you retrieve your fortune in gems without being destroyed? The object is to guide your mining car through a maze to pick up four jewels. Meanwhile, you shoot berserk robots with your laser gun. Mine Shaft is a good, though easy, arcade game. The characters are rendered fairly well with good detail and the animation is smooth. The game is fun to play, especially if you're not an arcade game wizard with hand-eye coordination that defies belief.

Catalog #18022 Price: \$29.95 **Sale \$14.95**

Crossfire by IBM

Defend your city against dangerous spiders and other menacing insects running madly through the streets...determined to destroy everything in their path. Play Crossfire! Joystick recommended.

Catalog #18023 Price: \$29.95 **Sale \$14.95**

Demon Attack by IMAGIC

Save the Planet! Use your laser cannon to blast the demons from your outpost on the moon. Wave after wave of eerie demons attack. Each has its own attack style and weapon. Then, blast off and take the offensive by attacking the demon's lair. Demon Attack is not recommended for those with weak hearts or for those who prefer slow paced strategic games. Demon attack is a fast action shoot-em-up arcade style game which will keep you glued to your joystick. It is certainly one of, if not the most exciting PCjr game cartridge we have ever carried. If you only intend to purchase one PCjr game cartridge, Demon Attack is the one to buy! Joysticks required.

Catalog #18011 Price: \$29.95 **Sale \$14.95**

Mouser by IBM

Mice are on the loose in Farmer Wheatbreads farmhouse. You must trap them by surrounding them with the moveable walls that are in each room. Some rooms are dark and if you haven't picked up a flashlight you will be unable to find your way. You may pivot the walls clockwise or counterclockwise; if two walls end up on top of one another, a push from the farmer will cause them to separate. The graphics are as sharp, detailed, colorful and attractive as many coin-operated games—and the play concept is original and interesting. Mouser is a strategy game. Quick action is not necessary for success. Instead you must figure out how to get the walls across the room to where the mouse is. This game is notable in that it is nonviolent—you try to cage the mice, not blow them to bits. So, if you want a non-violent game that challenges your cleverness more than your reflexes, Mouser may be the game for you. Joysticks optional.

Catalog #18024 Price: \$29.95 **Sale \$14.95**

The Enhanced Model PCjr came standard with one serial port. This port provides an industry standard (RS232) serial interface. While the PCjr did not come with any parallel ports, up to four industry standard (Centronics) parallel interfaces can be added.

Printers

Before you purchase a printer, always determine which type of interface the printer requires. The two types of popular printer interfaces are serial and parallel. If you purchase a printer from PCE which has a serial interface, you'll connect the printer by plugging it into the PCjr's "S" connector. You will not need to purchase anything else because all PCjrs have one "S" connector and all cables are included. If you purchase a printer which has a parallel interface, you'll also need a Parallel Printer Attachment and a Parallel Printer Cable.

Laser Printer (Serial and Parallel Interface)Page 82

Want the best printer we offer? The C. Itoh CI-4 offers speed, graphics, and letter quality!

Daisywheel Printer (Serial Interface)Page 84

Want true letter quality printing? Purchase the NEC Elf 370 and everything your PCjr prints will look like it was printed with an expensive typewriter!

Dot Matrix Printer (Serial Interface)Page 82

Want to connect a printer that doesn't also require a parallel printer attachment? The Seikosha/SP-2000S plugs into the PCjr's "S" connector.

Dot Matrix Printers (Parallel Interface)Page 85

Is speed more important than print quality, and would you also like to print graphics? The Star NX-1001 and NX-2430 Multi-Font printers are our finest one color dot matrix printers.

Color Printers (Parallel Interface)Page 85

Want speed, graphics and color? The Star NX-1020 and NX-2420 Rainbow printers do it all!

Thermal Printer (Serial Interface)Page 86

On a limited budget and you're more concerned with price than print quality? The IBM Compact printer is our lowest cost printer.

Parallel Printer AttachmentsPage 86

Purchasing a printer which has a parallel interface? Here's what you need to connect it to a PCjr.

Parallel Printer CablesPage 86

Need a cable to connect your printer? These cables connect any printer that has a parallel interface to a PCjr Parallel Printer Attachment.

PCjr Serial CablesPage 98

Need a cable to connect a serial printer? This cable makes the PCjr Serial Port look just like the Serial Port found on a true PC Compatible.

Recommendation: Personal preference and budget will normally determine which printer to select, however here's a summary of the important things to remember:

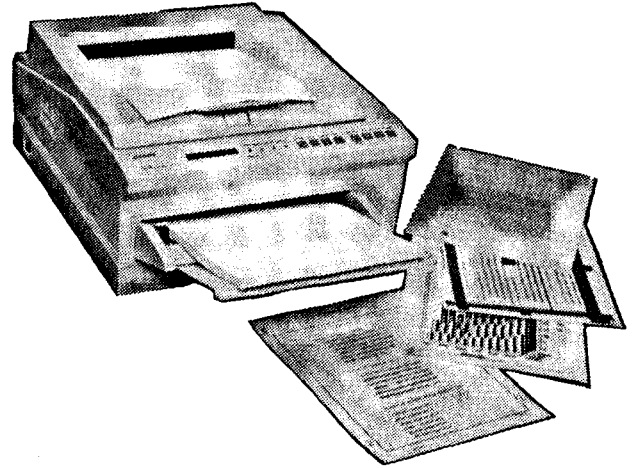
Daisywheel printers have excellent print quality. Documents produced will look like they were generated with a typewriter instead of a computer, however, these printers are very slow. If you would like to use a form letter as a template to prepare written correspondence to your customers or clients, a daisywheel printer might be an excellent choice.

Dot Matrix printers are fast, and print quality is good, however it's always going to be apparent that documents produced were computer generated. Dot matrix printers also print graphics.

A laser printer is almost always the first choice of those whose budget allows it! While laser printers offer excellent print quality, speed and graphics, they are expensive.

Thermal printers are the least expensive printers you can buy. They require special heat sensitive paper which is usually purchased on a roll. Print speed is medium and quality is low, however, our thermal printers can also print graphics.

C. Itoh CI-4 Laser Printer

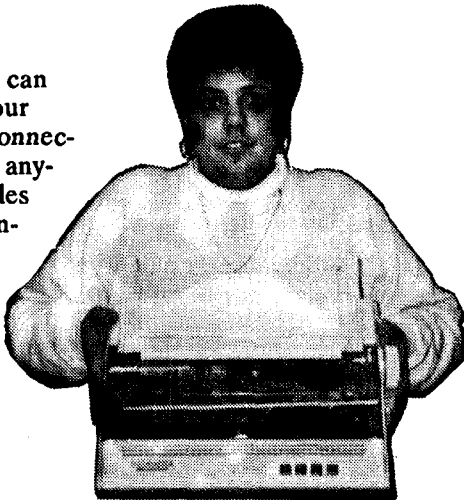


FREE CI-4 Full Color Brochure
Order #90024

The CI-4 Laser Printer from C. Itoh is an ergonomically designed printer with one of the smallest footprints in the industry, providing a truly desktop laser printer. The footprint measures only 14.3" x 15.9" to fit conveniently into any work station. It has a paper capacity of 100 sheets, twice that of competing 4 page-per-minute laser printers. The direct paper path reduces paper curl making the printing of high-quality envelopes, labels and transparencies easy. The new CI-4 Personal Laser Printer combines high quality, high performance and low noise in a compact, personal package.

Seikosha SP-2000S Dot Matrix Printer

Here's a great dot matrix printer that can be connected to your PCjr's Serial "S" Connector without buying anything else (All cables and adapters are included).



FREE
Seikosha SP-2000S
Full Color Brochure
Order #90025

Works without using a PCjr Parallel Printer Attachment!

- Printer type: Dot Matrix (Impact)
- Print head: 9 Pins
- Print colors: One
- Interface: Serial
- Print Speed (Draft Mode): 192 cps
- Print Speed (Near Letter Quality Mode): 48 cps
- Graphics Compatibility: Yes
- IBM Compatible: Yes
- Epson Compatible: Yes
- Push Button Control Panel: Yes
- Tractor Feed: Yes
- Manufacturers Warranty: Two years

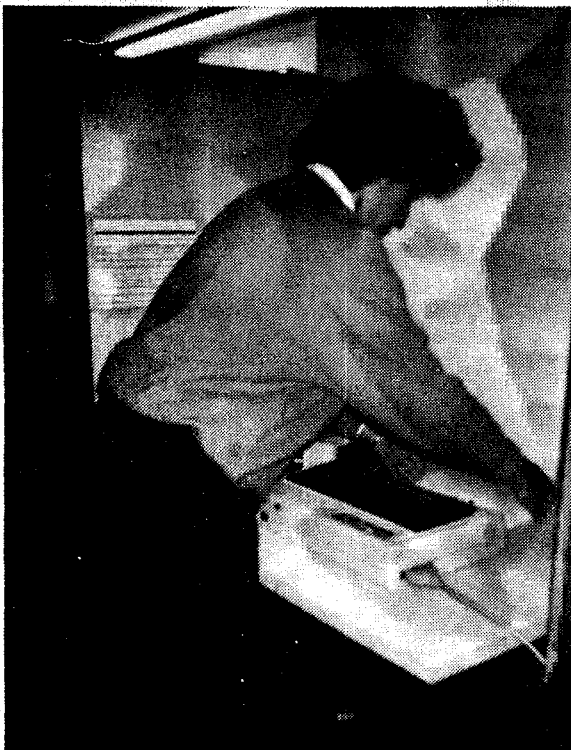
- Printer Type: Laser
- Print Speed: 4 Pages-Per-Minute
- Print Colors: One
- Interface: Parallel and Serial
- Graphics Compatibility: Yes
- Print Buffer: 512K
- 300 DPI Resolution
- HP LaserJet IIP Emulation as well as IBM, Epson, and Diablo
- 14 Standard Fonts
- 100 Sheet Paper Cassette Tray
- Compact Footprint 14.3" x 15.9"
- Prints on Letter, Legal, A4, B5, and Executive Size Paper
- Handles Envelopes, Transparencies and Labels
- Manufacturers Warranty: One Year

Catalog #78615 Price: \$279

Catalog #78616
Manufacturer's List Price: \$1245 Our Price: \$929

How to Connect a Printer to Your PCjr

This section is provided for the computer novice who decides to connect a printer to the PCjr



Computers use "ports" to transfer information to and from printers and other peripheral devices. The PCjr has two types of ports (serial and parallel) which can be used to attach a printer.

All industry standard serial ports conform to a specification known as the RS232 interface—and the PCjr's built-in serial port is no different. The PCjr's serial port can therefore be used to attach just about any peripheral which has a serial interface. This includes Hayes compatible external modems, mice and serial printers.

All industry standard parallel ports conform to the Centronics standard which is almost exclusively used to connect printers. For this reason, parallel ports are often referred to as Centronics ports, or simply, printer ports.

Before you connect a printer to your PCjr you must determine whether the printer you have selected requires an RS232 (Serial) interface or a Centronics (Parallel) interface. This information can be found in the printer's manual.

How to Connect Parallel Printers

Parallel interfaces are extremely easy to connect and operate. If your printer has a parallel interface all you need to purchase is a Parallel Printer Attachment (Catalog #79006) and a cable (#22510-1 or -2). Simply connect the Parallel Printer Attachment to the side of the PCjr then attach the printer with the cable.

How to Connect Serial Printers

Serial ports, on the other hand, are more versatile than parallel ports—and therefore present more of a challenge for PCjr users to get working with a printer, unless, of course the printer was designed specifically for the PCjr as is the case with our NEC Elf 370 printer.

The first thing you'll need when you connect a serial printer to your PCjr is a cable. Be aware: PCjr serial cables sold by IBM and PC Enterprises will make the PCjr's "S" port "look" exactly like the serial port used by an IBM PC. This means the cable has the correct pin assignments for modems and mice, which is not the same as what's needed for most printers.

The easiest way to properly connect the printer is to ask the printer's manufacturer what you need to connect the printer to an IBM PC. If the printer can be connected to an IBM PC serial port with a standard 25 position cable, then you can connect our PCjr serial cable directly to your printer. However, if the printer requires a special cable, you'll either need to purchase that cable, or make your own pinout adapter. In many cases our Null Modem/Printer Adapter (catalog #75510) will do the trick all by itself, or it can easily be modified to do exactly what you need. However, there is no one industry standard, so what you need will depend upon your printer.

Once the printer is properly connected you must set up the communication parameters. To do this you need to know which COM port your printer will be using. The PCjr's "S" connector is known to BIOS, DOS, and BASIC as COM1 if you do not have an internal modem, Comswap board, or RIM Sasitalk hard disk interface card plugged into your internal modem slot. If you do have any of these devices, the PCjr's "S" port becomes COM2.

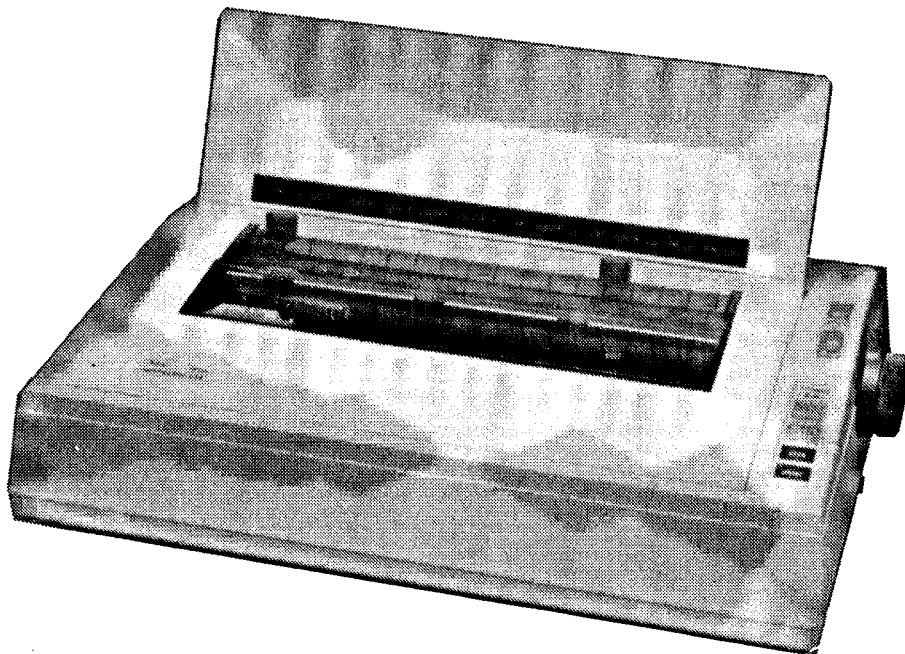
Next, you must use option 3 of the Mode command to initialize the COM port. Initialize means set the baud rate, parity, number of databits and stop bits, and tell the computer to continuously retry when timeout errors occur. Your PCjr can do almost anything your printer will need, so refer to your printer manual to determine what is required, then refer to your DOS manual to determine how to use option 3 of the Mode command.

You should also know that DOS has the ability to redirect output intended for a parallel printer to a serial port. This is a nice feature because it lets you use your serial printer with programs designed to work with parallel printers—without modifying your program. Option 4 of the Mode command is used for this purpose. Refer to your DOS manual for details.

Here's A Letter Quality Printer that Plugs Directly into the PCjr without any other Adapters, Attachments, or Cables!

If you thought you couldn't afford professional-looking letter quality printing, take another look now. This great NEC printer is suitable for business and home applications and originally sold for \$395 in our catalog. PC Enterprises has now slashed the price of this printer and made true letter quality printing affordable as a first—or as a second printer!

The NEC Elf 370 is easy to connect because it's designed specifically to operate with a PCjr. Just plug it into jr's serial port and you're ready to go! The Elf 370 is an ideal first printer but it's also purchased by PCjr owners who already have a dot matrix printer and would like to produce documents which look like they were typed on a real typewriter.



Quiet, compact, affordable, and easy to operate...

Great Spinwriter Performance

The Spinwriter Elf 370 prints up to 190 words per minute, is unusually quiet, and features a user friendly operator control panel. It comes with a standard sheet guide, a single lever paper control, and an auto load feature that lets you feed and position paper automatically when using the sheet guide. In addition, the Elf gives you 10, 12, 15 and proportional spacing pitches, plus underscoring, bold and shadow print for variety and flexibility of format. And the Elf's bi-directional print capability ensures fast, smooth printing.

Software Compatible, Too

The Elf 370 will work with just about any software package you run because it uses the popular NEC 3550 command set. And just in case you find an application which doesn't support the NEC commands, you can flip a switch and the Elf 370 becomes IBM compatible instead!

PC Enterprises only charges five dollars per order for shipping and handling. This means even when you purchase a printer you don't need to worry about additional charges for shipping. If you select the Priority Service option on our order form, we will still expedite your order in our facility, but the printer will ship regular UPS ground service.

- Printer Type: Daisywheel
- Colors: One
- Interface: Serial
- Plugs into the PCjr "S" port without any additional cables or adapters
- Print Speed: 19 cps
- IBM Compatible: Yes
- NEC Compatible: Yes
- Print Buffer: 1K
- Extra Wide Carriage (11 inches)
 - 10 pitch - 110 columns
 - 12 pitch - 132 columns
 - 15 pitch - 165 columns
- Dimensions: 5.8" x 19.3" x 13"
- True letter quality printing
- Ideal as a first or second printer
- Manufacturers Warranty: One Year

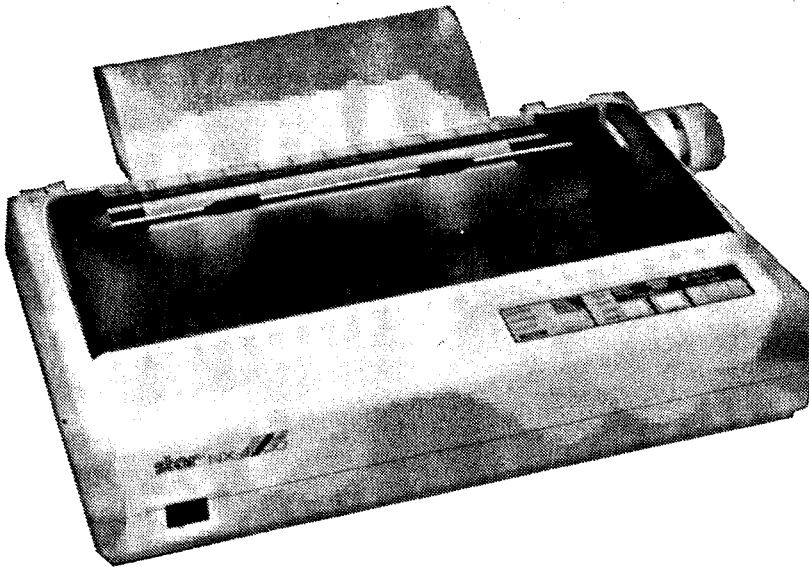
NEC Elf 370 Spinwriter for the PCjr

Catalog #78601 Reduced! New Price: \$245

Accessories

- Adapter to use the ELF 370 on an IBM PC Compatible
Catalog #15504 Price: \$19.95
- Adapter to use the ELF 370 with a switching box
Catalog #15503 Price: \$19.95
- Replacement Ribbon
Catalog #78607 Price: \$9.95

Near Letter Quality Printing with Superior Quality, Speed and Ease-of-Operation



	NX1001 Multi-Font	NX1020 Rainbow	NX2430 Multi-Font	NX2420 Rainbow
Printer Type	Dot Matrix (Impact)	Dot Matrix (Impact)	Dot Matrix (Impact)	Dot Matrix (Impact)
Colors	One	Seven	One	Seven
Print Heads	9-Pin	9-Pin	24-Pin	24-Pin
Interface	Parallel	Parallel	Parallel	Parallel
Draft Mode	150 cps	150 cps	222 cps	222 cps
Near Letter Quality	38 cps	38 cps	67 cps	67 cps
Graphics Capabilities	Yes	Yes	Yes (380x360 dpi)	Yes (380x360 dpi)
IBM Compatible	Yes	Yes	Yes	Yes
Epson Compatible	Yes	Yes	Yes	Yes
Print Buffer	4K	8K	7K	30K
Tractor Feed	Yes	Yes	Yes	Yes
Proportional Printing in All Fonts	Yes	Yes	Yes	Yes
Push Button Control Panel	Yes	Yes	Yes	Yes
Warranty	2 Years	2 Years	2 Years	2 Years

These Star printers are compact and easy-to-use. Models which have 9-Pin print heads provide standard performance while 24-Pin models provide superior print quality. All come with a full compliment of features and are excellent choices for PCjr users who do not desire "typewriter quality" printing.

If you are satisfied with standard dot matrix quality, select the Multi-Font NX-1001NL printer if you want a one color printer or the NX-1020NL Rainbow to print in seven beautiful colors.

Or, if you prefer 24-pin quality, select either the Multi-Font NX-2430 as your one color printer, or the NX-2420 Rainbow if you want a seven color printer.

The most important feature of these printers is compatibility. While most other printers are either IBM or Epson compatible, the Star printers are both. This means you'll be able to print almost anything your computer can generate, both text and graphics.

Just as important is ease of operation. Just connect the printer to your PCjr Parallel Printer Attachment (available separately), and you're ready to start printing without a lot of fuss. The printers have clearly understandable switches and lamp displays which operate in combination to perform a surprising variety of functions, including margin setting and micro-alignment.

Single sheets, fanfold forms, and multi-copy forms are all accepted and you can use either tractor or friction feed. A special feature enables you to keep fanfold forms parked in readiness while printing on other paper. The printers have one draft style and four Near-Letter Quality styles (Courier, Sanserif, and Orator with small capitals or lower case, plus italics for all styles, condensed print, bold print, double-sized print, and quadruple-sized print. Also Emphasized, Double-strike, Underlining, Overlining, Superscript, Subscript, and download characters.)

To connect either of these printers you'll also need a PCjr Parallel Printer Attachment, Catalog #79006, and a Parallel Printer Cable Catalog #22510-1 (6 Foot) or Catalog #22510-3 (10 Foot).

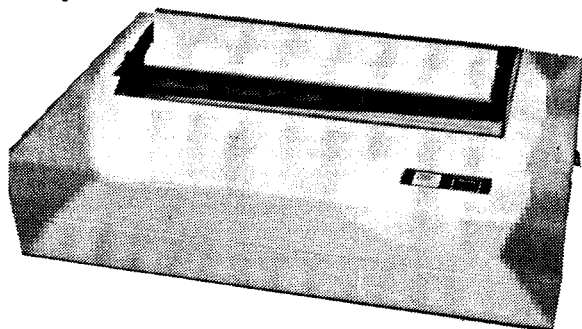
Lowest Cost Printers	Superior Print Quality
Star Multi-Font NX-1001NL Printer Catalog #78610 Price: \$195 Star NX-1020 Rainbow Printer Catalog #78618 Price: \$245	Star Multi-Font NX-2430 Printer Catalog #78617 Price: \$325 Star NX-2420 Rainbow Printer Catalog #78612 Price: \$425
Accessories	
Ribbons for Star NX-1001NL Printer Catalog #78606 Price: \$5.95 Ribbons for Star NX-1020 Rainbow Printer Catalog #78619 Price: \$19.95	Ribbons for Star NX-2430 Multifont Printer Catalog #78613 Price: \$5.95 Ribbons for Star NX-2420 Rainbow Printer Catalog #78614 Price: \$9.95

Printer manufacturers occasionally discontinue printers and replace them with newer and better models. If this should happen with either of these printers, PCE will automatically ship you the newest model whenever possible.

PC Enterprises only charges five dollars per order for shipping and handling. This means even when you purchase a printer you don't need to worry about additional charges for shipping. If you select the Priority Service option on our order form, we will still expedite your order in our facility, but the printer will ship regular UPS ground service.

PCjr Compact Printer

If you've been looking for an inexpensive printer which can be attached to your PCjr without any adapters or cables consider the PCjr Compact Printer. The PCjr Compact Printer was designed specifically for the PCjr. Therefore it comes complete with its own cable which plugs into the S (Serial) connector in the rear of the PCjr.



It prints at 50 cps with four print modes available: standard (80 column), compressed (132 column), double width, and compressed double width. The PCjr Compact Printer can even underline and do graphics. It uses 8 inch wide thermal paper which is the reason it is exceptionally quiet.

Use as your first —or second printer. An extremely small quantity are available. Reconditioned.

Catalog #78738
Price: \$59.00

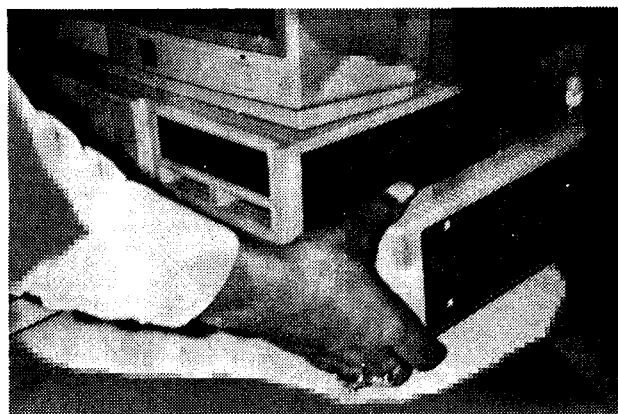
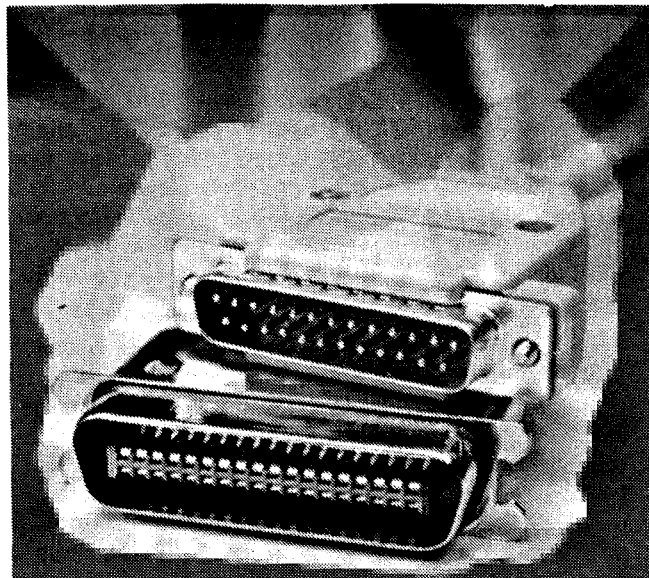
**Thermal Paper
for above printer
(80' roll)**

Catalog #80030
Price: \$4.99

- **Printer Type: Dot Matrix (Thermal)**
- **Print Heads: 9 Pins**
- **Print Colors: One**
- **Interface: Serial**
- **Print Speed: 50 cps**
- **IBM Compatibility: Yes**
- **Warranty: 90 days**

Printer Cables

Works with all PCjr Parallel Printer Ports!



IBM Parallel Printer Attachments (New)

This is the genuine IBM brand Parallel Printer Attachment. It plugs into the side of the PCjr like any other PCjr sidecar, and allows you to attach an industry standard parallel printer as LPT1.

Catalog #79006 Price: \$89.95

Reconditioned Printer Attachments

Reconditioned IBM Printer Attachments are now available. These printer attachments may not be new and in the original box, but they are enhanced by PC Enterprises to work as LPT1 or LPT2. They are also thoroughly tested and, because they contain no moving parts, are very likely to continue working correctly for hundreds of years!

Catalog #78737 Price: \$89.95

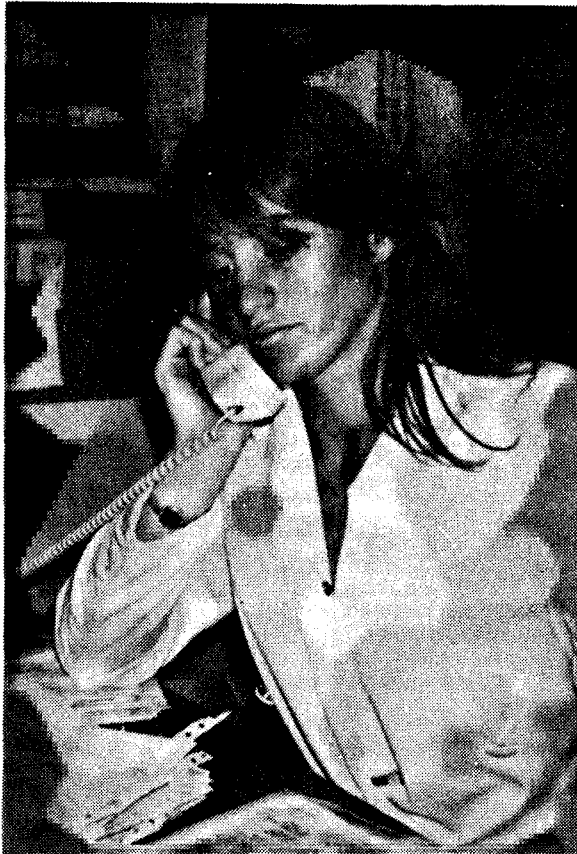
Allows you to connect any printer which has a standard parallel interface to the PCjr or a PC compatible. Has a male 25 pin D connector on one side and a Centronics 36 pin connector on the other. Shielded.

Parallel Printer Cable, 6 Foot
Catalog #22510-1 Price: \$14.95

Parallel Printer Cable, 10 Foot
Catalog #22510-3 Price: \$19.95

The IBM PCjr is certainly one of the most reliable home computers ever sold—nevertheless, even the most reliable computer may, at times, require service. That's why service should be a real concern. What would you do if someday your PCjr should break?

Parts & Service



Relax. It's not likely you'll ever need to send your PCjr to the repair shop. Thanks to a considerable number of diagnostic tests which are built into the PCjr, the PCjr may be the easiest computer ever designed to troubleshoot and repair. If your PCjr ever breaks you have a choice. You can purchase and install just the parts that you need, or send your entire system to us and let our trained PCjr technicians diagnose the problem and professionally install any required replacement parts for you.

That's part of the beauty of owning a PCjr. You'll never have any trouble finding replacement parts or someone knowledgeable to service your computer. Large inventories of PCjr spare parts already exist, and if we ever did run out of a part, we'd simply produce a new one that's better (we've already done this with IBM's 64K internal memory card). Unlike other companies that abandoned the PCjr, PC Enterprises has remained a PCjr specialist and will be here to service the PCjr for as long as the need exists.

What to do if your PCjr ever BreaksPage 88

Is something wrong with your PCjr? Want to fix it yourself? Here are some helpful tips.

EDT ServicePage 89

Prefer to leave repair to our experts? Extensive Diagnostic Testing (EDT) determines exactly what's wrong with your PCjr.

Reconditioning ServicePage 90

Want your PCjr to be better than new? We'll fix whatever's wrong with your PCjr, replace all your floppy drives, give you a brand new replacement style cordless keyboard, and then install our five system board modifications!

Replacement Parts

Complete Systems and MonitorsPage 91

PCjr Replacement PartsPages 92 and 93

Rapport, Quadram, and Racore Replacement PartsPage 94

What to do if your PCjr Ever Breaks

Diagnosing Problems by Yourself

The PCjr's built-in self tests allow most people to determine which replacement part they need without sending the system in for service. Once you determine which part you need, the PCjr is simple to repair—even if you're not technically inclined. Here are a few basic things every PCjr owner should know which concerns the PCjr's built-in tests, and what to do if a problem is ever experienced. We suggest you skim through this section now, and refer back to it if you ever encounter a problem.

While it's always difficult to diagnose a problem without seeing the system, years of troubleshooting experience with the PCjr has taught us to suspect certain parts. For this reason we've used a "probably, but not always" approach in this section—which allows you to benefit from our experience.

Each time you turn your PCjr on, the PCjr runs its Power On Self Test (POST). During this test the IBM logo should appear while the computer counts its memory. If POST detects a problem it will display an error message (when possible). Sometimes POST starts to run, but the problem prevents it from displaying an error message on the screen. If this happens, you'll see a white or black screen and hear two or three beeps. If you hear your system produce any beeps it is a good indication that your power transformer and power supply are both okay (A bad transformer or power supply will usually cause a white screen and you'll never hear any beeps).

If the computer does not complete POST, the basic troubleshooting procedure is to identify the problem by removing everything which is not essential to complete POST. Start by unplugging everything from the rear of the PCjr except the power transformer and monitor. Next, remove all cartridges and sidecars, retesting the PCjr after each step. Also remove the Internal Memory Card, Wireless Receiver, and Disk Drive Adapter card. The PCjr should successfully complete POST with just the power transformer, power supply, and system board installed. If it does not, the problem is with one of these parts. If the transformer is warm, it's probably, but not always, good. If you hear the PCjr's fan running, both the transformer and power supply are probably, but not always, good. If you have removed everything from the PCjr except the power transformer and power supply, and you still hear two or three beeps, the system board is probably, but not always, bad.

Always check for bent pins and that your cables are plugged into the correct connectors on the rear of the PCjr. The keyboard, joystick, light pen, and cassette cables are often plugged in the wrong connector. Bent pins, which prevent proper connector alignment, are absolutely the most common problem that we see and have accounted for white and black screens, two or three beeps, or plug in items not working. Bent pins found on the rear of the PCjr can cause POST errors B, C, or D. Bent pins on the 60 pin sidecar expansion bus cause errors A, F, H, I or J. Always check the outside unoccupied bus connector too. Also, when checking for bent pins, remove each and every sidecar. Sometimes multiple pins are bent or sometimes a bent pin goes without notice until a new add on device is purchased.

If the computer completes POST without displaying an error message, you can run additional built in diagnostic tests. These tests are extremely helpful, especially if you have a memory or disk drive problem. However, if you have more than one floppy drive you may need a Configuration Cartridge to test additional drives.

The first step should always be to try to isolate the problem by following the previously described troubleshooting procedure, however, the adjacent information may also be helpful. And remember, if you have a problem we're just a phone call away.

White Screen or System Dead
Probably, but not always, a power problem. Suspect the Power Transformer or Internal Power Supply. If you have a spare (black brick) power transformer try it. Otherwise check the output of the transformer and power supply with a meter. Never plug a good transformer into a Racore if you have a power problem. It could blow your good transformer instantly.

Black Screen and One Beep
Probably, but not always, a monitor problem. Try another monitor or use a TV connector to test your PCjr with your television.

Black Screen and Two Beeps
Probably, but not always, a system board problem.

Distorted Characters
Multiple colors on the screen with diagonal lines. Screen often rolls. Especially common after rebooting. The problem may go away when the system is turned off for a while. This is a monitor problem.

Sector not found
Might also receive Boot disk failure, Bad or missing command interpreter, Error reading (or writing), and Bad DEV/COM messages. Your disk drive is probably going bad, but it can also be a bad diskette or Disk Drive Adapter card. Your computer may also have trouble reading diskettes which were formatted on other computers. This is a very common problem. Run the disk drive self-test and replace the drive if it fails.

Error A Message
Memory error. Write down the number displayed as it tells you the address of the last memory location that passed POST. Check the switches on all memory boards that you have installed. If you have a JrExcellerator installed check the switch settings.

Error B Message
Keyboard problem. You may have pressed a key during POST. If not, check for stuck keys. Also check for bent pins on the IR Receiver module and keyboard K port. If you have removed the IR receiver from your computer, make sure a keyboard cable is plugged into the PCjr K port.

Error C Message
Cassette port problem. Unplug all devices plugged into the computer's C connector and

retry. If you still get the error it is a problem with the System Board. However, you can press ENTER to bypass the message—but, doing so will make it unlikely that you'll be able to use your cassette port.

Error D
Serial port problem. Disconnect anything plugged into the PCjr's S connector and retry. If you still get the error, it is a problem with the system board. To bypass the error message press Enter—however, doing so will make it unlikely that you'll be able to use the PCjr's serial port.

Error E
Internal modem problem. Check the internal modem slot. You may have the wrong board plugged into it.

Error F
Optional ROM CHECKSUM error. Make note of the letter and number displayed. This is the segment and offset where the error occurred. Often a ROM address conflict. Have you just added a new product? Remove sidecars and other plug in boards one at a time until the error goes away. If your system works when you remove a sidecar the sidecar may be using the same ROM address space as something else in your system. Change the ROM address used by one product or the other.

Error G
Cartridge error. Make note of the letter and number displayed (This tells the segment and offset where the error occurred).

Error H
Disk drive error. Check all cable connections to your floppy disk drives, especially power cables. Make sure any external drives you have are plugged in and the fuses are good. Make sure terminating resistors are removed and check the drive select jumpers. If the power supply and all else mentioned are okay, the drive has probably gone bad. If you have a second drive and you have started to disassemble your system and now receive this error it is because your second drive system is no longer properly installed. Remove the disk drive controller card to get past the error.

Error I
Cluster Attachment Error

Error J
Speech Attachment Error

The Testing section of your "Guide to Operations" manual explains most error messages and provides instructions for running the built-in diagnostic self tests. The "Hardware Maintenance and Service" manual (Catalog #79018) provides instructions and adapters required to run IBM's Advanced Diagnostic Tests which are intended to help more precisely determine which board or other replacement part you'll need. The Sams "ComputerFacts" (Catalog #79002) is usually purchased by those with a technical background who intend to perform component level repair.

Extensive Diagnostic Testing

For just \$35 we'll give your PCjr a thorough check-up. Our trained PCjr technicians will perform our Extensive Diagnostic Testing (EDT) service on your PCjr system, then provide you with a report. We believe EDT Service for PCjr computers is the most thorough and comprehensive test program put together for a PCjr computer since IBM closed the PCjr production facility. Our staff only works on PCjrs and are all experts in the field. If they can't solve your problem it would be hard to find anyone who can!

EDT Service for the PCjr computer includes a long list of diagnostic tests which have been proven to be very effective when identifying PCjr problems. We'll provide you with a report that tells you absolutely everything your PCjr needs to pass EDT. And EDT is the very same test program our reconditioned PCjrs are required to pass before they're permitted to leave our facility.

Once EDT Service has been completed you'll receive a call from our Customer Service Department. They'll tell you everything your system needs to pass EDT. If you authorize us to make repairs, our trained PCjr technicians will professionally install the parts and products you purchase—then retest your system.

And don't think that because we're charging only \$35 we'll do a second rate job. Here's what EDT Service includes:

System Board

Visual inspection of all pins and connectors, plus an electrical test of the System Board RAM, ROM, Diskette Drive Interface, Serial Interface, Display Interface, Composite Display Interface, Internal Modem Interface, Keyboard Interface, Joystick Interfaces (2), Audio Interface, Infrared Keyboard Adapter, Cassette Interface, Cartridge Interface, Light Pen Interface, and Beeper.

Internal Diskette Drive

We'll test Clamping, Spindle Speed, Head Alignment, Sensitivity, Head Rotation, and Directional Seek. In addition, we'll check the Track Zero Sensor adjustment, Index Timing, and head alignment.

Internal Options

Tests are also performed on all IBM and PCE internal options including Internal Memory Cards, Diskette Adapter Cards, Power Supplies, Internal Modems, jr-ROM Clocks, Thin-Font Modules, and jrExcellerators, plus lots of other internal options that you might have.

Sidencars

In addition, we'll test all your IBM and PCE sidencars including Memory Expansions, Printer Interfaces, Power Attachments, clock/calendar products, Speech Attachments, plus lots more!

Other Options

We'll also test your keyboard, color display, power transformer, and just about every other product made by any company—as long as it is sent in at the same time as your system, and as long as we're familiar with the product and have the information we need to test it (except disk drives).

Additional Charges

An additional \$15 fee is charge for each floppy or hard drive that you have. This is due to the cost of additional labor required to test and disassemble these systems. Diagnostic tests performed on hard drives include DIAG testing (Seagate Technologies), read and write tests, and Directory Structure and FAT table evaluation—plus a disk surface scan for defects.

Turn-Around Time

Naturally, every PCjr owner who experiences a problem would like us to work on their system the day it's received. We understand this and promise to always do the very best that we can. Unfortunately, our turn-around time varies with the workload. Feel free to call in advance and ask us to estimate current turn around time based on any existing backlog. On average, EDT Service is completed within one to three weeks.

We will attempt to duplicate any problem you have had in our test lab. Once duplicated, problems normally take minutes for

us to pinpoint. However, if you provide inadequate information and an intermittent problem is experienced, substantial testing and multiple overnight burn-ins may be required. When this happens we never ask you to pay for additional labor charges, although we do request that you remain patient while we continue our testing.

You Can Speed Things Up

The more you tell us about any problems you have had the faster we can track down the trouble. Please include a note which thoroughly describes the problem and also be sure to tell us about any error messages you have seen. And finally, be sure to include the actual disk that you use to start your system.

Pre-Authorizations Cut Turn-Around Time in Half

When you choose not to pre-authorize, the technician who pinpoints the trouble with your system puts your system back on the shelf, then prepares a written report which interprets EDT results. The report then waits to be reviewed and approved by a supervisor before being sent to our Customer Service Department. Customer Service then tries their best to contact you by phone. If you're a hard person to reach, perhaps you live in another time zone or don't always get your messages, this could take quite a while. When we give the technician the go ahead to perform the work your system once again waits on the shelf for its turn to get back into the Tech Lab.

When you authorize us in advance to repair your system the technician who isolates the problem immediately performs all repairs. In most cases the work is finished the day the problem is identified.

In order to pre-authorize, simply provide us with a credit card number or instruct us to return your system COD for the amount due. You can also request reconditioning if the cost to repair exceeds a specific amount. For example, you might ask us to repair your system if it could be fixed for \$173 or less, otherwise recondition it.

We used \$173 because repairs rarely go that high. The most expensive internal part that could fail costs \$148 to replace and \$25 to install (you'll get a \$50 trade-in certificate with the new part). Please don't be hesitant to pre-authorize, it simply makes a lot of sense and pre-authorization never changes EDT results.

Extensive Diagnostic Service (EDT)	Service No	Price	Return Shipping		
			Regular Service	Second Day	Next Day
EDT for PCjr systems with one drive	98514	\$35	\$15	\$25	\$35
EDT for PCjr systems with two drives	98515	\$50	\$20	\$35	\$45
EDT for PCjr systems with three drives	98516	\$65	\$25	\$45	\$55
EDT for PCjr systems with four drives	98517	\$80	\$25	\$55	\$65

Installations Service Offered

Our trained PCjr technicians will install any or all of your PCjr add-on products—and all we charge is \$25 for this service! We're familiar with just about every PCjr product ever made, so don't be afraid to leave everything up to us. And when you include a copy of the diskette that you use to start your system we'll even check your CONFIG.SYS file and install the software drivers we think you'll need. If our technicians see something wrong in your CONFIG.SYS file, we'll rename it CONFIG.OLD and rewrite it the recommended way (Look for a PCEREAD.ME file for notes from the technicians).

Component Level Repair

We also repair PCjr Monitors and just about every other PCjr add-on product that we can think of. If the product is one that we repair or recondition regularly, we may be able to offer an \$80 flat rate repair charge. Other products can be repaired for \$50/hr. Repairs are always subject to the availability of parts.

Getting Your System to PCE

If you are hesitant to pack up and ship your PCjr to PCE yourself, why not bring it to a company which specializes in packaging and shipping? These companies are often listed in the Yellow Pages under Packaging or Shipping Services. If you bring your PCjr to them they'll professionally pack and ship it for you. Or, for an additional \$25 charge, we'll arrange for UPS to pick-up your system or monitor and bring it to our shop for repair or upgrade. The \$25 charge includes the cost of shipping, insurance and call tags. All you have to do is pack up everything and address the box—then give us a call!

PCjr Reconditioning

It's never expensive to repair the PCjr! For as little as \$249 we'll fix everything that's wrong with your PCjr plus we'll install our five system board modifications. Your PCjr will be better than new!

Here's what we'll do:

- Clean your PCjr
- Perform the now famous EDT Service for PCjr systems to determine exactly what your system needs.
- Repair or replace all original equipment parts which fail EDT.
- Replace all your Floppy Disk Drives
- Repair all supported add-on products*
- Install the PCE Five System Board Modifications
- Overnight Burn-In (if necessary)
- Install revision enhancements to existing products

As you can see, we'll do everything necessary for your PCjr to pass EDT with flying colors. In addition, we'll replace all your floppy disk drives, provide you with a brand new PCjr keyboard, and install PCE's Five System Board Modifications.

We can recondition your PCjr regardless of which PCE, Racore, Rapport, or Quadram accessories you have installed. In addition, we'll test and repair just about any other PCjr product that you have. A partial list of third party add-on products which we routinely test and repair appears below. If you have any products which do not appear on our list, we may be able to test and repair these products too—but can't make any promises. Our ability to service other products is subject to the availability of schematics, replacement parts, manuals, and a little luck.

Supported Add-on Products

We always test, and can usually repair, all PCjr products made by AST, IBM, Impulse, Micro Products, Microsoft, Quadram, Rapport, Racore, and Teomar.

* Exceptions: There could be times that we're unable to test/repair a PCjr add-on product that you own—even though it may appear on the list above. If this happens we'll contact you to discuss alternatives. Also, our reconditioning charge does not include service required for monitors or Hard Drives. If one of these products requires service, the cost will be quoted separately.

PCjr Reconditioning—One Floppy Drive Systems

- Replace drive with a 5¼ inch drive
Catalog #98509 Price: \$249
- Replace drive with a 3½ inch drive
Catalog #98522 Price: \$249

PCjr Reconditioning—Two Floppy Drive Systems

- Replace both drives with 5¼ inch drives
Catalog #98510 Price: \$349
- Replace both drives with 3½ inch drives
Catalog #98520 Price: \$349
- Replace drives with one 5¼ and one 3½ inch drive
Catalog #98521 Price: \$349

Refer to the EDT Service page for return shipping costs. Also let us know if you'd like us to upgrade your memory by installing our Internal Memory Card (512K systems are expanded to 640K, 640K systems are expanded to 736K). The additional charge is only \$50! Call for information on reconditioning of three drive systems (not listed above).

Good News For Racore, Rapport, and Quadram Users

On October 5, 1990 Racore Computer Products Inc. announced that the support and service for their Drive II line of products for the IBM PCjr had been transferred to PC Enterprises. This is good news for those who use Racore products, because it means PC Enterprises can support and service your Racore products and also bring about increased compatibility between the two product lines.

Racore was one of the first and perhaps the most prominent company to ever develop, manufacture, and market PCjr products. The Racore Drive II Enhancement Package proved itself as a top of the line product right from the beginning. It has been sold to tens of thousands of PCjr owners.

In addition, Racore manufactured hard disk drive expansion systems, a PC Keyboard Adapter, an external speaker, and a PC Identifier cartridge. All are proven products which have passed the test of time.

PC Enterprises will now provide support and service, warranty as well as non-warranty, for all PCjr add-on products manufactured by Racore, except Local Area Networking (LAN) products. This includes Racore products manufactured under the "Rapport" and "Quadram" names.

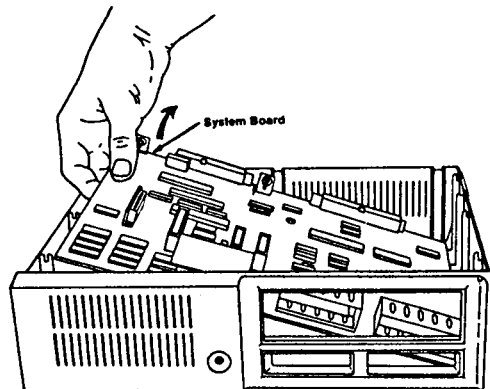
Racore users who experience any difficulty concerning installation, use, or compatibility of Racore products should contact PC Enterprises' Customer Service Department. Our staff will be happy to assist you and to provide all levels of service and support that you might need—exactly the way we would if you had purchased the products directly from PC Enterprises.

Previously Racore products were not 100% compatible with PC Enterprises products. For example, those who used Racore products could not easily add a PC Enterprises Junior Drive III System or PC Enterprises Hard Disk Expansion System.

Now things will change. Racore has shared previously proprietary technical information about their products with PC Enterprises. This means PC Enterprises can now support those who use Racore products much better than ever before.

And what's even better, PC Enterprises can now develop new PCjr products and modifications that eliminate existing compatibility problems. In fact, as you read through this catalog you'll see several of these new products already!

PC Enterprises is proud to have been selected by Racore as the company chosen to support Racore products. We're also very excited about upcoming expansion opportunities and we look forward to hearing from Racore users and solving any problems which might occur.



Complete PCjr System Units

Why take the chance that you'll experience any down time at all? When the cost and inconvenience of having your PCjr serviced is considered, a second PCjr System Unit is a real bargain.

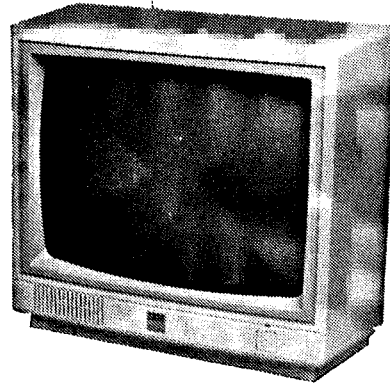
What better insurance can you possibly buy to protect your PCjr investments than a second monitor or PCjr system unit? These previously owned PCjrs and monitors can now be purchased for a fraction of what they would cost if new.

The PCjr Color Display is the monitor that plugs into the D connector on the rear of your PCjr. The monitor includes a built in amplifier and speaker.

The Enhanced Model PCjr is a complete PCjr System Unit which includes everything needed to run software—except the monitor. Two models are available. The IBM version includes 128K of memory, a floppy disk drive and the improved PCjr Replacement Style Keyboard. The PCE version is identical to the IBM model except it uses our 192K Internal Memory Card instead of IBM's 64K card. The PCE version therefore comes with 256K of internal memory, and because it uses the PCE Internal Memory Card it's fully compatible with the PCE jrExcellerator speed up board.

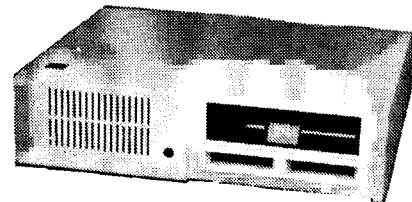
Both models are sold with the Five System Board Modifications already installed. This means you can upgrade either model to VGA simply by plugging in our Display-Master VGA Sidecar. This also means the System Boards come with their microprocessor, character generator IC, and ROM BIOS socketted for easy installation of future add-on products.

PCjr System Units are often purchased by people who experience problems with their existing PCjr and would like a second system unit to help determine which part has gone bad.



PCjr Color Display

Catalog #78705 Price: \$199 Trade-In Credit: \$50



**128K Enhanced Model PCjr System
— IBM Version**

Catalog #78733 Price: \$299 Trade-In Credit: \$100

**256K Enhanced Model PCjr System
— PCE Version**

The 256K PCE Version can be expanded to 736K by adding any PCE 512K Memory jrSidecar.

Catalog #78728 Price: \$349 Trade-In Credit: \$100

Save the Most when you Trade-in Defective PCjr Parts

Many replacement parts in our catalog qualify to receive a Trade-In Credit when the defective part is returned to PC Enterprises in accordance with our Trade-in policy.

The Trade-In Credit is "store credit" and is accepted at face value for anything sold by PC Enterprises.

When you purchase a product which offers a Trade-In Credit, a certificate which entitles you to receive the credit is sent automatically—regardless of whether you intend to trade-in the defective part. This means you do not need to tell anyone at the time you place your order that you'll be trading in a defective part.

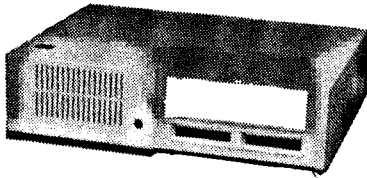
Trade-in Policy and Instructions

- 1 Buy the replacement part from PC Enterprises and pay the regular price. When you receive your order you'll also receive a certificate for the appropriate trade-in credit.
- 2 Return the defective part that you intend to trade-in, along with the certificate, postage prepaid, to PC Enterprises within 60 days of the time you receive the replacement part.
- 3 Write the words "Trade-in Enclosed" on the outside of the package that contains the defective part.
- 4 Upon acceptance of the item(s) returned for credit PC Enterprises will validate your certificate and return it to you via US Mail.

This trade-in program was established to insure a low cost supply of replacement parts will remain available for the PCjr as long as the need exists. PC Enterprises therefore reserves the right to refuse any item returned for trade-in which has been modified, is not complete, or can not be reconditioned by us due to physical or abnormal damage. Please allow 2-4 weeks.

Reconditioned Replacement Parts

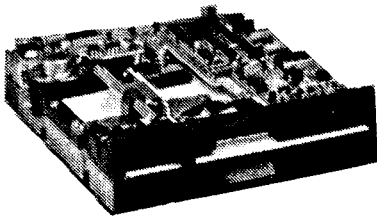
PCjr System Cabinet



The actual plastic cabinet used to contain a PCjr computer. This is the plastic shell only and does not include any electronics. Often purchased by do-it-yourselfers as a cabinet to install a second disk drive.

Catalog #78716
Price: \$29

360K Diskette Drive



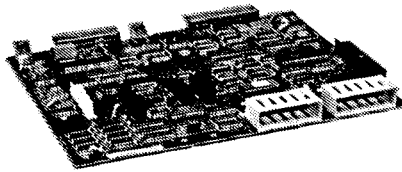
The original PCjr disk drive. Disk drives are mechanical devices with lots of moving parts, and therefore tend to go bad much more often than any other part of the PCjr.

When floppy diskette drives start to go bad, the PCjr will often report bad sectors when good diskettes are formatted. You may also have trouble reading diskettes which were formatted by other computers, or receive a bad or missing DEV/CON error.

If you encounter any of the drive error messages listed in this section or the Disk Drive Adapter Card section, it's probably time to purchase another disk drive (if changing the drive doesn't correct the problem, try the Disk Drive Adapter Card next).

Catalog #78719 Price: \$98

System Board



The main system board of the PCjr computer. Often purchased by PCjr users who wish to obtain the benefits of the five PCE System Board Modifications without sending in their computer for service.

When the PCjr system board goes bad, the system will often display a white or a black screen. If you suspect a problem with your PCjr system board, remove all sidecars and other plug in options except the PCjr power supply, and see if the problem goes away.

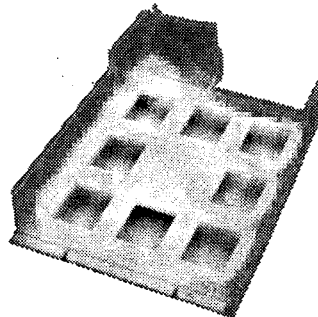
PCjr system boards sold by PCE are sold with socketed microprocessors, BIOS, and character generator IC's. In addition, the five PCE System Board Modifications are already installed.

System Board with
Standard Modification #97514
Catalog #78739 Price: \$148

System Board with
Special Modification #97515 (for
Racore users with 512K total memory)
Catalog #78740 Price: \$148

Trade-In Credit: \$50

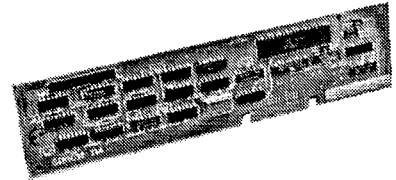
Disk Drive Mounting Shelf



The plastic shelf that snaps into the PCjr and holds the disk drive and fan in place. The shelf has two plastic prongs which snap into the PCjr Cabinet. This item is often purchased by people who damage their original while removing the PCjr's disk drive.

Catalog #78725 Price: \$2.95

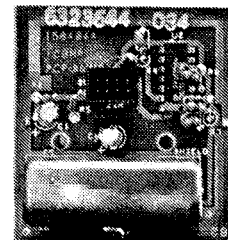
Disk Drive Adapter Card



Controls the operation of the floppy disk drive. When this board goes bad you will often receive one of the disk drive error messages (sector not found, error reading..., error writing..., disk boot failure, etc.), an Error H message, or the computer will go straight into BASIC without ever trying to read the drive. Note: the same problems can also be caused by a defective disk drive. We suggest that you replace your disk drive first, and if the problems continue, then replace the disk drive adapter card.

Catalog #78708 Price: \$50

Wireless IR Receiver



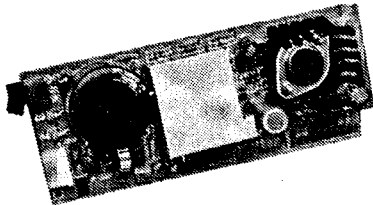
This circuit board plugs into the PCjr system board and receives the information transmitted by the PCjr's cordless keyboard. When this part goes bad, you'll normally receive an Error B message or the PCjr cordless keyboard may not work correctly. Replace this part if your PCjr's cordless keyboard will not operate and you have already tried replacing the batteries found in your keyboard.

Catalog #78710 Price: \$38

*All reconditioned parts subject to a 90 day warranty and all sales are final.
Refer to the Terms and Conditions section of our order form for details.*

For Your PCjr

Power Supply Card



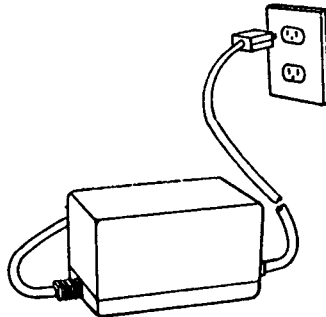
This is the original power supply card that plugs inside the PCjr computer. If you do not see or hear anything when the PCjr's power switch is turned on, replacing this card should solve the problem. Note that a bad power transformer will cause similar problems.

46.5 Watt Power Supply (10 inch)
Catalog #78729 Price: \$150
Trade-in Credit: \$25

33 Watt Power Supply (7 inch)
(shown in photo)
Catalog #78707 Price: \$75
Trade-in Credit: \$25

Power Transformer

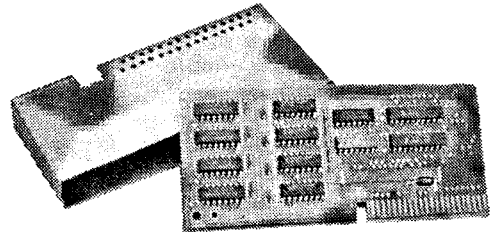
The power transformer resembles a black brick which has a cord attached to both ends. When this goes bad you will not see or hear anything happen when the PCjr is first turned on. You can test the transformer by measuring the output voltage, or by swapping it with a known good transformer such as the transformer included with a Racore System or with the PCjr Power Attachment Sidecar.



Warning: If you have a Racore Drive II Enhancement System and your power supply goes bad, it will often cause the transformer plugged into the Racore system to also fail. Do not plug a good power transformer into a Racore system if your Racore power transformer has failed until you have had your Racore power supply checked out first.

Catalog #78712 Price: \$44
Trade-in Credit: \$12

64K Memory and Display Card



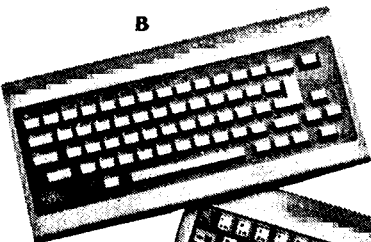
The IBM internal memory card increases the PCjr's memory from 64K to 128K. If this card goes bad your display will often appear "messed up" or your system may display the Error A message before it counts to 128K. Note: The metal shield shown in the photo was not provided with all PCjr's.

If your 64K card goes bad, we recommend replacing it with the PCE 192K card, as it is the same price, however to use our 192K memory card, the PCE System Board Modifications are also required.

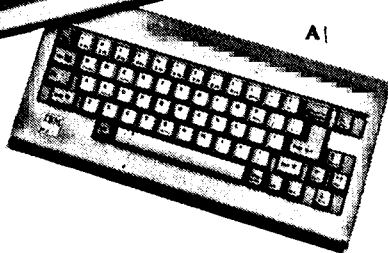
Catalog #78709 Price: \$50

Replacement Keyboard

B



A



This is the actual improved version of the PCjr wireless keyboard provided by IBM with the PCjr. Often purchased for use as an additional keyboard, or saved as a spare.

Replacement Keyboard
Catalog #78717 Price: \$25

Chicklet Style Keyboard
Catalog #78726 Price: \$15

Diskette Drive Fan

The actual fan that mounts on the rear of the disk drive mounting shelf. When the PCjr is first turned on you should hear the sound of this fan. If this fan ever stops working the computer can overheat—causing permanent damage

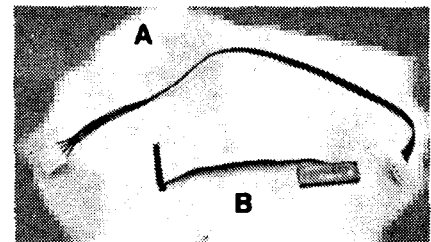


to other components (usually the system board). Often purchased as a spare.

Catalog #78720 Price: \$9.95

Cables

(For Systems with One Disk Drive)



A Power Cable

The black, 4-conductor cable which attaches to the PCjr's internal disk drive and the power supply card.

Catalog #91814 Price: \$9.95

B Disk Drive Signal Cable

The grey, 34-position flat ribbon cable which attaches to the PCjr's internal disk drive and the Diskette Drive Adapter Card.

Catalog #91813 Price: \$9.95

Racore Replacement Parts

PC Enterprises is very pleased to announce that we now offer reconditioned replacement parts for all Rapport, Quadram, and Racore Drive II Enhancement Systems. In addition we have established a Trade-In program to insure our supply of replacement parts remains available for as long as the need exists. Refer to page 91 for program details.

Here's a list of reconditioned replacement parts that are available from PCE. In most cases we can ship the same day. Call our toll free order line to confirm availability from stock.

If you need help determining which replacement part you need, feel free to call us on our toll free order line. Before calling, please determine the Make (Rapport, Quadram, or Racore) and Model number of the system you use. You can usually obtain this information by inspecting the paperwork that came with your system. Look for numbers like 1200, 2200, or 1500. If you can't determine the model number here's what to do. Open the system's lid and examine the cable that goes from the Racore power supply to your double height sideboard. This cable plugs into a connector on the sideboard which has either 3, 6, or 8 pins. Count the pins, then refer to your system as a 3-wire, 6-wire, or 8-wire system.

Next, we need to know whether your system has DMA. The easiest way to determine whether you have DMA is to examine the grey 10-conductor cable that is plugged into the double height sideboard. Determine whether this cable is part of the cable that attaches to the floppy disk drive, or whether it goes directly to a circuit board plugged into the computer. If the cable is part of the floppy drive cable then you DO NOT have DMA. If it goes to a circuit board plugged into the PCjr's disk drive controller slot, then you DO have DMA.

All 3-Wire Systems	Model 1200
6-Wire Systems without DMA	Model 1200
6-Wire Systems with DMA	Model 2200
8-Wire Systems without DMA	Model 1500
8-Wire Systems with DMA	Model 1501

Manuals

Model 1500/1501 Drive II Plus	#80059 Price: \$4.95
Model 2200 Drive II Plus	#80067 Price: \$4.95
Model 1200 Drive II Enhancement Package	#80068 Price: \$4.95
Model 1511/1521 10/20 Fixed Disk	#80062 Price: \$4.95
Model 1504/1507 3 High 10/20 Fixed Disk	#80074 Price: \$4.95
Model 2101 256/512K Memory Expansion	#80060 Price: \$4.95
Model 2100 128/384K Memory Expansion	#80069 Price: \$4.95
Model 2200 Racore DMA Option	#80071 Price: \$4.95

Racore Services

Racore Battery Replacement Service	#97510 Price: \$25
DMA Disable Service (requires #91822)	#97511 Price: \$25
Racore 384K Memory Board Modification	#97512 Price: \$30
Racore FDC Modification	#97511 Price: \$30

Power Supplies*

3 Wire Systems	#32508 Price: \$180
6 Wire Systems	#32509 Price: \$180
8 Wire Systems	#32510 Price: \$180

Solutions to Common Problems Unique to Rapport, Quadram, and Racore Users

White Screen Problem After Replacing your System Board

If you have Racore DMA and you have just replaced your system board and now get a white screen there may be a short on your new PCjr system board. This short only causes problems when DMA is added. Examine the soldering of the disk drive connector. You can usually correct the problem with a soldering iron or exacto knife. If you prefer that PCE make the repair, send us your system board and order Modification 97506 (\$30), or, ask us to perform our Five System Board Modifications and we will correct this problem automatically (see Page 13).

Disk Drive Problem After Replacing your Floppy Disk Drive

If you have DMA and you have just replaced your Floppy Disk Drive and found the new drive does not work correctly, the problem may be with your Floppy Drive Controller (FDC) card. The Racore FDC requires Modification #97511 (\$30) to work reliably with replacement disk drives.

Intermittent Error A Problems or Disk Drive Problems

If you have a 384K memory board and are receiving disk drive errors, or Error A, your memory board may need a modification installed. Send us your 384K memory board and order Modification #97512 (\$30).

Intermittent Error A, H, or F Problem

The four PCjr stacking screws which came with your Racore sideboard are only needed to prevent your sideboard from falling off and should only be tightened so that they are snug. DO NOT OVER TIGHTEN!!! If these screws are over tightened, it could cause the plastic case, which is coated with conductive paint, to come in contact with the sideboard traces. If this happens, your sideboard may require service.

You just replaced your drive and now both drive lights go on AFTER the computer counts its memory.

The new drive's "Drive Select Jumper" is not properly set. Rapport, Racore, and Quadram systems must have the drive select jumper for the A drive set for the SECOND physical drive (usually DS1) and the drive select jumper for your B drive set for the FIRST physical drive (DS0).

If you did not purchase your drive from PCE it may not have drive select jumpers. If this is the case, the drive may not be usable on your system unless it is modified. PCE does not offer a modification service to solve this problem, as all drives are different, and therefore would require different modifications.

Both drive lights come on as soon as power is applied.

The ten conductor connector that attaches to the sideboard may be upside down.

You Took Your System Apart, and when you put it back together you started getting an Error A message

Bent pin on PCjr 60-pin sidecar expansion connector.

Sideboards*

3 Wire	#32503	Price: \$180
6 Wire without DMA	#32504	Price: \$180
6 Wire with DMA	#32505	Price: \$180
8 Wire without DMA	#32506	Price: \$180
8 Wire with DMA	#32507	Price: \$180

Software

Model #1200 software for use with all 3-wire and 6-wire systems without DMA	#85701 Price: \$9.95
Model #2200 software for use with all 6-wire systems with DMA	#85702 Price: \$9.95
Model #1500/1501 for use with all 8-wire systems	#85703 Price: \$9.95

Floppy Drive Controllers (DMA)*

6 Wire Systems	#32526	Price: \$180
8 Wire Systems	#32501	Price: \$180

*Purchase qualifies for \$30 Trade-in credit. Refer to Page 91 for program details

Hard Drive Systems

Hard Drive Power Supply (external black box)	#32511 Price: \$169
Hard Drive Power Distribution Board (6-Wire)	#32512 Price: \$59
Hard Drive Power Distribution Board (8-Wire)	#32527 Price: \$59
Hard Drive Controller Cards	#32502 Price: \$280
Replacement Hard Drive (20MB)	#44006 Price: \$275

Cables

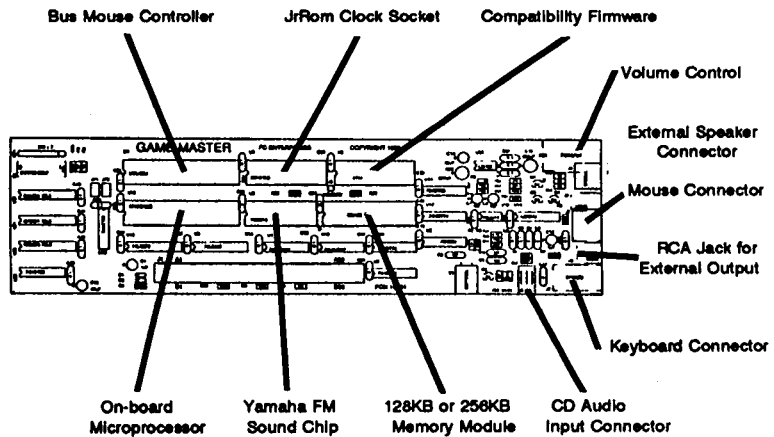
34 pos Signal Cable for systems w/o DMA	#91822 Price: \$39.95
34 pos Signal Cable for systems with DMA	#91823 Price: \$39.95
10 pos Signal Cable for systems w/o DMA	#91831 Price: \$19.95
10 pos Signal Cable for systems with DMA	#91828 Price: \$19.95

Miscellaneous

Racore Drive Chassis	#95011 Price: \$69
Racore Bus Extender	#32513 Price: \$29
Wafer Style Battery	#50007 Price: \$9.95

Game-Master and Game-Master Plus

*Colorful and Dazzling Graphics
Mind Blowing Sound Effects
Improved Performance and
Speed
Greater PC and Tandy
Compatibility*



The PCjr has always run serious business software without a hitch, however, getting games to run on the PCjr has at times been a challenge.

Introducing Game-Master... The first PCjr add-on product designed specifically for PCjr users who use entertainment software. Game-Master's on board microprocessor makes your PCjr operate just like a true compatible. Even programs that directly access the computer's hardware work with Game-Master installed because Game-Master corrects hardware differences.

Game-Master provides improved graphics, sound, speed, and compatibility. It is 100% AdLib and Sound Blaster FM sound compatible, lets you upgrade memory to 736KB, and permits a jrROM-Clock to be installed without taking your PCjr apart. Game-Master Plus also provides a Microsoft compatible bus mouse that connects without using the PCjr's COM: port!

Either product will make your PCjr true CGA and TGA (Tandy) compatible. In addition, both eliminate keyboard and NMI problems known to cause some games to crash when you use your keyboard. Examine these features!

Colorful and Dazzling Graphics

Without Buying a New Monitor!

With Game-Master installed your PCjr becomes a true CGA compatible - without sacrificing PCjr compatibility. Better yet, Game-Master makes your PCjr TGA compatible too! This means all your games that currently run in dreary 4-color CGA modes can now run in TGA modes and produce dazzling 16-color graphics (no modifications required).

Mind Blowing Sound

AdLib and Sound Blaster FM sound compatible!

If the beep, beep, bop, beep that you hear from your PCjr speaker has started to drive you insane by boring your mind to no end; Game-Master will delight you with the sound experience you'll remember your entire lifetime!

Your AdLib compatible software now comes alive with unbelievably realistic music and sound effects - even speech. You'll hear bass drums, clarinets, trombones, trumpets, plus much much more. Your PCjr will sound like an electronic video arcade game. Game-Master will blow your mind away!

- Greater Speed
- Noticeable Performance Improvement!

The PCjr's internal memory is dreadfully slow. That's why games should always be loaded in expansion memory. Unfortunately, this means 91KB of the memory inside your PCjr can be wasted. And that means games that require 640KB never have enough memory to run. Game-Master solves this problem because it lets you expand to 736KB. Once expanded, you always have enough fast memory to run your games and you'll never need to use slow memory again!

Greater PC and Tandy Compatibility

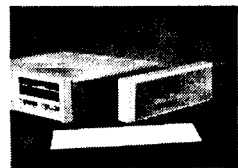
Problems running games often concern hardware differences with the PCjr's keyboard, display, and disk drive interface. While these differences are always transparent to well-behaved software, games sometimes address hardware to provide improved performance. Unfortunately, when these ill-behaved games run on the PCjr the game doesn't perform at all. At least, until now!

Game-Master jrSidecar

Catalog #14050 Price: \$159

Game-Master Plus jrSidecar

Catalog #14051 Price: \$199



Yes! It's a sidecar.

128KB Memory Upgrade Kit (Expand from 640 to 736KB)

Catalog #11205 Price: \$49.95

256KB Memory Upgrade Kit (Expand from 512 to 736KB)

Catalog #11206 Price: \$69.95

PCE jrROM-Clock Catalog #14801 Price: \$39.95

(See page 16 for more information)

Technical Information

Video Compatibility: All true CGA and Tandy (TGA) computers have hardware at 3D8h and 3D9h. The PCjr does not. That's why some CGA and TGA programs won't run correctly on PCjrs. Game-Master's on board microprocessor adds the video hardware IBM left out!

Keyboard Compatibility: The PCjr's existing keyboard interface causes the non-maskable interrupt to occur each time a key is pressed - a process that has caused more than one game to crash when the keyboard is used. Game-Master's microprocessor now translates keyboard information without using the NMI routine. Your PCjr Keyboard now works as well as keyboards provided with other computers!

Disk Drive Compatibility: The PCjr's disk drive controller uses hardware address F0h. Other computers use this address for their math co-processor. While this alone has never caused any problems, programs that write to F0h to determine whether a co-processor is installed cause disk drive errors on a PCjr. Game-Master solves this problem too!

Optical Scanner and LPT Scan Adapter



(actual scanned image)

An optical scanner is a device which allows you to transfer photographs, diagrams, sketches, and any other images into a format that you can read with your computer. An example of a scanned image appears above.

Simply roll the scanner over the image and the scanner software allows you to create a .PCX or .TIF file on your hard disk. You can then use virtually any drawing program (PC-Draw, PC-Paintbrush, Correl Draw, etc.) to display, edit, and even print the image.

Under normal circumstances, optical scanners that you purchase in the store can not be used on a PCjr. That's because scanners normally come with a special interface card that must be plugged into an ISA bus—and the PCjr doesn't have an ISA bus! In other words, there's no place to plug the scanner card on a PCjr.

Logitech ScanMan Model 32 Optical Scanner

Here's the scanner PCE has tested.
Catalog #79037 Price: \$219

Logitech ScanMan Model 256 Optical Scanner

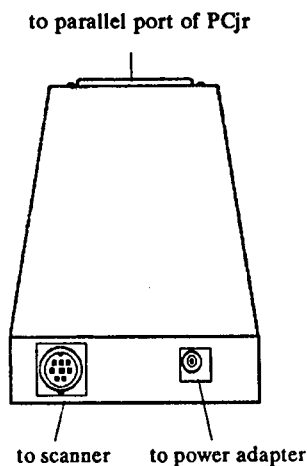
Scans images with higher resolution. Requires Windows v3.0 or later.
Catalog #79039 Price: \$359

256 Color Software (Professional Quality)

Allows either scanner to produce 256 color images by scanning multiple times with different filters.
Catalog #86029 Price: \$159.95



The LPT Scan Adapter is a product that allows you to connect optical scanners without using the interface card that comes with the scanner. Instead, the scanner plugs into the LPT Scan adapter and the adapter plugs into your PCjr's parallel printer attachment (printer port). The LPT Scan Adapter software (included) is used instead of the software normally provided with the scanner. This software allows the scanner to generate high quality (256 level) gray scale outputs to meet all your needs. System Requirements: IBM PCjr with 640K, Hard Disk, Megaboard, or Turbo-Drive, DOS 3.10 or later, Parallel Printer Attachment, and a Compatible Scanner.



LPT Scan Adapter for the PCjr
Catalog #79036 Price: \$149

Speech Attachment with MakeTalk! Software

The PCjr Speech Attachment can enable your PCjr to seemingly come to life by talking, laughing, and even singing songs. It is perhaps the most fascinating PCjr product ever designed—but until now there was one problem. Without software to support the Speech Attachment it doesn't do anything at all. In fact, without software it may have been one of the most useless PCjr products ever sold.

Introducing MakeTalk!—the missing link between your voice and your Speech Attachment. MakeTalk! is a software package that lets you create files that talk when they are executed. Create your own talking files and save them on your disk. Then play them back whenever you want. In your own voice. Or in someone else's voice. You can even disguise your voice by changing its frequency.

Best of all, MakeTalk! doesn't require any programming knowledge whatsoever. It's simple to use and it's fun to create files that talk when executed from the DOS command line, a batch file, Basic program, and our AlarmTalk program.

AlarmTalk is a program which turns your computer into a talking alarm clock. It runs in background while you use other programs. Imagine...you're up late at night working on a spreadsheet and your computer interrupts: "Three O'Clock. Better hit the sack or you'll never get up in time for work!"

And now, for a limited time, PC Enterprises will give you the MakeTalk! Software Package free when you purchase our Voice Communications Package. That's right. FREE!

Speech Attachment and FREE MakeTalk! Program
Catalog #79013 Price: \$149

MakeTalk! Program Only Catalog #85516
Regular Price: \$98 Special Low Price: \$49

IBM's Writing to Read

Shows children how to develop their language skills at an early age. Writing to Read helps children learn how to write, read, and pronounce words correctly using the English language. Based on the "alphabetic principle", this program can be a priceless learning tool for children in kindergarten and first grade.

The Writing to Read system has combined learning theory with the unique "talking" technology of the PCjr's Speech Attachment to provide an interactive, multi-sensory learning experience which has been determined effective by Educational Testing Services located in Princeton, New Jersey. The clear, distinct, human voice being reproduced from your computer is simply remarkable.

The process begins by emphasizing the correct pronunciation by way of phonetically accurate verbal response and instruction produced directly from your PCjr system. Then, by showing children how to progress from only being able to say the words they know to writing and eventually reading those words, they quickly learn how to communicate in an easy, more consistent fashion at an earlier age.

In closing, Writing to Read's logical, progressive, and importantly uniform format enhances students' inherent language maturation skills. This lesson makes Writing to Read perhaps the most valuable software package ever written for the PCjr! Includes 12 diskettes, manual, 10 workbooks, and 15 instructional cycle cassettes. Extremely small quantities are available. Requires 128KB RAM, DOS 2.1, 360K Disk Drive, Speech Attachment, Cassette Player

Catalog #86210
Regular Price: \$399 SALE: \$199

NEW! Writing to Read with Speech Attachment
Catalog #10053 Price: \$299

**Now
you can
Network
all your
PCjrs for
as little
as \$200
per node!***



"That's right! For just \$2000 you can network ten computers!"

PCjr Network Kits

Now you can network from 2 to 25 PC's and PCjr's for much less than ever before! Once networked, each of your PCjr's can use the hard drive, printer, and other resources installed on any computer. Networks can mix PCjrs with other 8 or 16-bit computers.

Each Network Kit comes with its own copy of Netware Lite—a Novell Software product. In addition, PCE provides additional software and drivers which permit the Novell software to work with IBM's PC and PCjr Cluster Attachments.

The network features simple management of network directories and printers, NetWare IPX/SPX and NetBIOS support, network management from any node, security system with passwords, automatic logging of network activity, easy to understand manual and informative on-screen help system, plus much more!

Also included with each Network Kit is a PC or PCjr Cluster Attachment. The PCjr Cluster Attachment comes in a sidecar and the PC Cluster Attachment is an 8-bit card that works with 8 and 16-bit computers which have an ISA bus. This includes the IBM PC, XT, AT, and many other 286 and 386 computers.

The only other thing you'll need to connect the computers is coaxial cable which can be purchased at Radio Shack or almost any other electronic supply store. Requires DOS 3.1 or later— one network kit is required per computer.

PCjr Network Kit
Catalog #10048 Price: \$200

PC Network Kit
Catalog #10049 Price: \$300

*Coaxial cable not included. Limited supplies are available.
Note: PCE has tested networks using both PCjrs and PC-XTs as servers with multiple PCjrs. The network also works with the PCE PCjr Hard Drive System, however, version 1.4 of the PCE SCSI Host Adapter BIOS is not compatible. If your PCjr displays the "ST01jr BIOS version 1.4" message each time you start your computer, you will need our latest SCSI Host Adapter BIOS.
Catalog #59315-5 Price: \$19.95

PCjr Cables and Switching Boxes

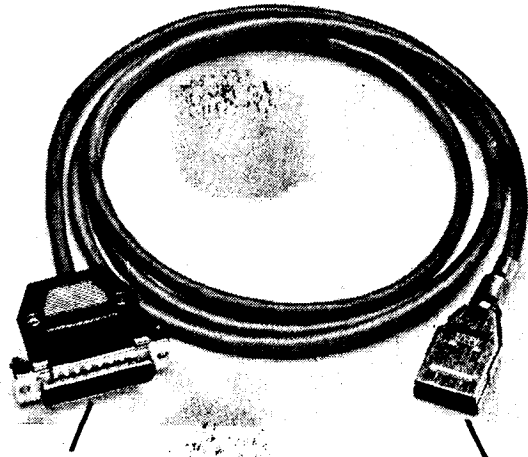
Connect the PCjr to RS232 Devices

PCjr Serial Cable

This cable makes your PCjr Serial port "look" just like the 25-position serial port used by other computers. With a PCjr Serial Cable you can connect peripheral devices designed to work with any IBM PC directly into your PCjr. Attach external modems and serial mice without purchasing anything else. To connect your PCjr's serial port to a serial printer or the serial port of another computer you will also need our Null Modem/Printer Adapter (catalog #75510).

6 Foot PCjr Serial Cable

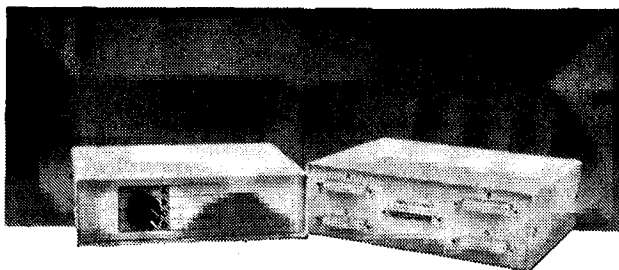
Catalog #22505-5 Price: \$34.95



DB25 Male Pins
Plugs into serial device or switching box

16 POS (2 x 8) Female
Plugs into PCjr "S" connector

Switching Boxes



Lets you Select a Different Device Without Unplugging any Cables!

Switching boxes permit you to attach more than one device to the same port on your computer. Once installed you will be able to change the device selected with the flip of a switch. Twenty-five position switching boxes are often used to connect an external modem to your computer at the same time as a mouse or printer. These same boxes can also be used to connect more than one printer to one computer or more than one computer to a single printer. Nine pin switching boxes are commonly used to connect two computers to the same monitor. Select an AB box if you want to switch between two devices and the ABCD box to switch between four devices. Cables not included. Nine pin AB box not shown in photo.

AB Switching Box (9 pin D-Type Female Connectors)

Catalog #75512 Price: \$19.95

AB Switching Box (25 pin D-Type Female Connectors)

Catalog #75501 Price: \$19.95

ABCD Switching Box (25 pin D Type Female Connectors)

Catalog #75515 Price: \$29.95

25 Position Cables

This cable can be used to connect any two devices which use 25 position D-type connectors because they connect all 25 positions (Warning: Many 25 position cables sold by other companies only connect nine or fewer positions).

Computer Cable (DB25 Female-Male)

Commonly used to connect a switching box, modem, or other serial device when the PCjr Serial Cable you already have is too short. Male at one end, female at the other end, D-type connectors, 25 conductors, 6 foot, shielded.

Catalog #22513-1 Price: \$14.95

Computer Cable (DB25 Male-Male)

This cable has two common uses. If you want to connect your mouse or modem to a switching box this cable will do so nicely. It can also be used to connect two printers to one computer—or two computers to one printer. This cable will connect between your computer's parallel printer port and your switching box. Male D-type connectors on both ends, 25 conductors, 6 foot, shielded.

Catalog #22506-1 Price: \$14.95

Dust Covers

Dust often plugs ventilation holes causing excessive heat build up and premature component failure. With these custom designed covers your system will not only stay looking like new longer but it may last much longer as well. All vinyl. Color beige.

Dust Cover for PCjr Monitor
Fits the IBM PCjr Color Display. Designed for those who keep their monitor alongside the system unit.

Catalog #72002 Price: \$10.95

Dust Cover for PCjr Keyboard
Fits both the chicklet or improved version of the original equipment PCjr wireless keyboard.

Catalog #72003 Price: \$4.95

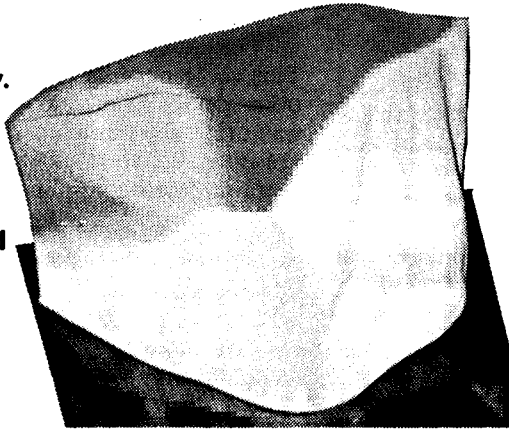
PCjr Monitor and System Unit
Designed for those who keep their monitor on top of the PCjr system unit. One piece construction fits systems with one internal disk drive.

Catalog #72001 Price: \$14.95

PCjr Monitor and Two Drive System Unit

Same as Catalog #72001 (above) except for systems with two or three internal disk drives. Fits PC Enterprises, Racore and Legacy floppy or hard disk expansion systems.

Catalog #72005 Price: \$14.95



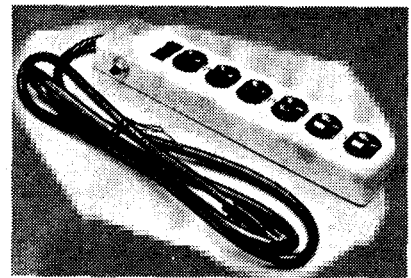
PCjr Carrying Cases

Looks and feels like an expensive piece of hard cover luggage. You'll find it hard to believe that such a nice product could sell for only \$19.95. The PCjr carrying case will permit you to safely and conveniently transport your PCjr. Often used to take the computer to and from work or school. It is also used as a shipping container by many PCjr owners who need to send their PCjr in for service.

Catalog #79004 Price \$19.95

SALE PRICE: \$9.95

Surge Protector and AC Power Strip



Power surges often cause system crashes. When this happens, your computer will normally hang up. Often strange patterns appear on the screen and all unsaved data is lost. One surge protector is all you need to protect your computer, monitor, printer, modem and other peripherals because each surge protector comes with six outlets. An illuminated master switch and 15 amp breaker is also included.

Surge protectors often will not prevent your data from being lost, but they will in most cases prevent permanent damage from occurring when power surges do occur. Our surge protectors use metal oxide varistors which act as shock absorbers, limiting potentially damaging electrical transients. The surge protector can also be used to power on your computer and all its accessories with one switch. UL listed.

Catalog #79001 Price \$9.95

D-Type Gender Changers

Gender Changers are indispensable when you want to attach two cables or devices which will not mate because they both have the same gender connector.

Female Gender Changers

Female gender changers have female contacts on both ends and permit joining two devices or cables which both have male connectors.

25-Position Female Gender Changer for D-Type Connectors

Catalog #75509 Price: \$3.95

Male Gender Changers

Male Gender Changers have male pins on both ends therefore permitting you to join two devices or cables which both have female connectors.

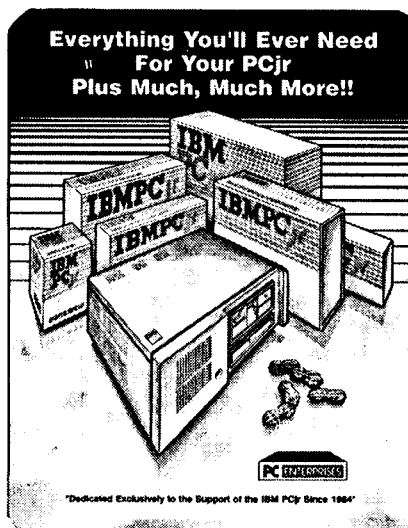
25-Position Male Gender Changer for D-Type Connectors

Catalog #75508 Price: \$3.95

PCE Mouse Pad

Here's a mouse pad for all PCjr fanatics. It's one quarter of an inch thick and looks just like the cover of our catalog. For all mechanical mice. 8½ x 11".

Catalog #15511 Price: \$14.95



Other Products

(Actual Adapter May or May Not Resemble the Adapter Shown in the Photo)

Adapter for Peripherals which Plug into the PCjr's "S" Connector



Changes PCjr 2x8 position serial connectors to industry standard 25 position D-type connectors. Male adapters are used to plug PCjr peripherals

into AB and other switching boxes. Female adapters permit plugging PCjr peripherals into the serial port of an IBM PC or other compatible.

RS232 Male Adapter for PCjr Peripherals
Catalog #15503 Price: \$19.95

RS232 Female Adapter for PCjr Peripherals
Catalog #15504 Price: \$19.95

Joystick Adapter



Permits you to use most IBM PC joysticks with your PCjr. Single button joysticks will work with games designed to run on the PC. Other programs may require a two button joystick.

One end of this adapter plugs into the 2x4 pin "J" connector on the rear of the PCjr. The other end has a 15 position female D-type connector which plugs into the PC joystick. One adapter is needed for each joystick.

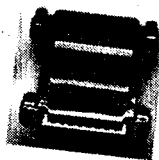
Catalog #22503-1 Price: \$14.95

Null Modem Adapter

These adapters have male pins on one side and female pins on the other.

Use a Null Modem Adapter when you connect your PCjr's serial port to the serial port of another computer.

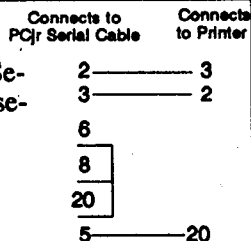
Catalog #75510 Price: \$8.95



Serial Printer Adapter

Changes the pinout of the PCjr Serial Cable so it works with most serial printers. Looks identical to our Null Modem Adapter.

Catalog #22525 Price: \$29.95



Adapter Cable for Cassette Recorders

This cable permits you to attach a cassette recorder or other device to the cassette port of the PCjr. This port was originally intended so you could save information on cassettes, but today, PCjr users have come up with much more interesting applications.

Those who know how to write their own programs can use this cable to turn the cassette motor relay on or off by program control, therefore controlling just about any other device that they might want. When used with a cassette recorder you can also record or playback sounds throughout the day—by program control.

If your collection of PCjr add-on accessories does not include one of these cables, why not order one today? Our supplies are limited and at this price they won't last forever.

Catalog #79005 Price: \$9.95

Floppy Diskettes

Floppy diskettes sold by PCE are provided in sturdy acrylic flip-top diskette boxes. These attractive diskette boxes are also available separately.

5.25 inch Diskettes
DSDD. Ten diskettes per box. For all 5.25 inch 360K drives. Color: Black

Catalog #55004 Price: \$8.95

5.25 inch High Density Diskettes
Ten diskettes per box. For all 5.25 inch 1.2MB drives. Color: White

Catalog #55008 Price: \$11.95

Acrylic Diskette Boxes
For 5¼ inch diskettes
Catalog #55012 Price: \$4.95
For 3½ inch diskettes
Catalog #55011 Price: \$4.95

3.5 inch Diskettes
DSDD. Ten diskettes per box. For all 3.5 inch 720K drives.

Catalog #55009 Price: \$11.95

3.5 inch High Density Diskettes
Ten diskettes per box. For all 3.5 inch 1.44MB drives.

Catalog #55024 Price: \$17.95

3.5 inch Floppy Diskettes
Perpendicular Recording Media. Double sided/135TPI. For all 3.5 inch 2.88MB drives.
Catalog #55020 Price: \$3.45

Floptical Diskettes

3.5 inch Floptical Diskettes



For all PCE Floptical Drive Systems. 21MB.

Catalog #55021 Price: \$24.95

The Enhanced Model PCjr runs the majority of PC programs as long as the PCjr meets the hardware requirements of the program.

Software and Books

Most people who sell software know very little about the PCjr. As a result, they're unable to offer good advice concerning compatibility. Unfortunately, many are too embarrassed to admit this and instead suggest you purchase another computer! That's why we put together this PCjr Software Compatibility fact sheet. Feel free to take it with you to your software store. It provides all the compatibility information available to select software that runs correctly on a PCjr.

Memory

All Enhanced Model PCjrs came with 128KB of conventional memory (RAM) and are expandable to 736KB. Here are two things to remember: First, even though the PCjr counts up its memory when first turned on, it still needs Memory Management Software before that memory can be used by programs. See the PCE Utility Disk on (page 104) for more information. Second, if you do not have a jrExcellerator speed up board (page 14) or a Display-Master VGA Sidecar (page 49), the PCjr has 16KB less memory available to programs than other IBM computers. In other words, a program which requires 250KB to run on a PC compatible will not run on a PCjr with 256KB because a 256KB PCjr only has 240KB available. This means the PCjr must be expanded to have 384KB because memory can only be added in 128KB increments.

Graphics Adapter

All PCjr's have a built-in Enhanced CGA graphics adapter. Enhanced CGA is compatible with true CGA as long as programs are "well-behaved". "Il-behaved" programs are programs which bypass the usual BIOS and DOS interfaces and directly access the computer's hardware. The PCjr will work correctly with many ill-behaved programs too, but not all. Most compatibility problems concern older programs or programs written by amateurs. Few commercial programs are too ill-behaved to run correctly on the PCjr.

In addition, the PCjr's graphics adapter is almost Tandy compatible. With a minor hardware modification the PCjr can run most Tandy programs (see page 13 for details).

The Display-Master (page 49) graphics adapter can be added to the PCjr. It makes the PCjr 100% MDA, HGA, MGA, CGA, EGA, and VGA compatible. The PCjr does not need a new monitor to run most EGA software.

Processor

The PCjr was sold with an 8088 microprocessor running at 4.77MHz. The next generation of microprocessors was called 286. 386 microprocessors came next. The V20 microprocessor (page 16) is an inexpensive product that is very popular with PCjr owners. That's because it's 8088 compatible and also

provides lots of 286 compatibility (It doesn't give you the speed of a 286 but it does understand many 286 instructions which cause 8088s to choke). The product that adds a V20 and also increases clock speed to 9.54MHz is the jrExcellerator (page 14). A PCjr 386 board is under development and expected to become available sometime this year.

Floppy Drives

All Enhanced Model PCjrs came with one 5¼ inch 360K floppy diskette drive. The PCjr can be expanded to include as many drives and any type of drive that you want. Available drives include 1.2MB, 1.44MB, and 2.88MB as well as 22MB floptical drives!

Hard Drives

The PCjr did not come with a hard drive, however it can be expanded to include up to seven hard disk drives. The largest drive that we've tested is 424MB but we don't think there's any limit to the maximum size.

Sound

The PCjr is 100% PC beeper compatible. In addition, when used with the TSOUND utility (page 13) most programs that produce Tandy sound will work correctly. The PCjr can be made 100% Tandy 4-voice compatible but a hardware modification (page 13) is required. Sound cards which are 11-voice Ad-Lib compatible are also available.

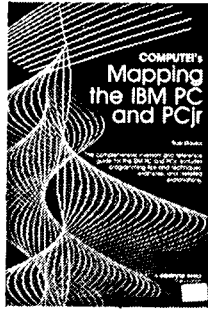
General

The PCjr, like other computers, has certain "bugs" in its operating system. These bugs must be corrected to achieve maximum compatibility. Disk based PCjr utilities (page 104) are available which eliminate most incompatibilities, however the Compatibility Cartridge (page 74) is required to correct all bugs. The INT9FIX utility (included on the PCjr Utility Disk), fixes keyboard problems and is the single most important fix you might need, especially with software published by Microsoft. Also, if you are using DOS 2.10, and have not installed the DOS 2.10 patches, certain programs that you run may crash without warning. This can be avoided by using our Compatibility Cartridge, a later DOS, or by installing the patches found on the PCE Utility Disk.

Preferred Books for Your PCjr

COMPUTE!'s Mapping the IBM PC and PCjr

Russ Davies—330 Pages



The PCjr is a powerful machine, however many of its built-in hardware and software features are not well documented. Even relatively simple things may seem impossible to do when the only documentation you have is what's provided by IBM.

This book provides in depth discussions of the keyboard, video, and sound capabilities. It also includes comprehensive memory and port maps, as well as an interrupt and function guide.

The book clearly shows how a PCjr is the same, and how it is different from the IBM PC. We think it is without question the most useful book ever published for the PCjr. In fact, at PC Enterprises you'll always find a Mapping book within reach of any of our technicians, both at work and at home. We use it more than all the others combined. Whether you're an engineer, technician, programmer, or whether you simply like to dabble with batch files and debug—we think you'll consider this book a valuable asset to your PCjr collection too!

Catalog #85035 Price: \$18.95 **SALE \$9.95**

Super Saver Package #3

Perhaps our two best PCjr Books! Includes the indispensable Mapping the PC and PCjr book and our most popular BASIC programming book that we have ever sold, Basic Exercises for the IBM PCjr.

Catalog #10044 Price: \$24.95 **SALE \$14.95**

Mastering DOS

Judd Robbins—678 Pages

"The most useful DOS book". This four-part, in depth tutorial addresses the need of users at all levels. Topics range from running applications, to managing files and directories, configuring the system, batch file programming, and techniques for system developers.

Catalog #85018 Price: \$15.95

COMPUTE!'s IBM & Compatibles BASIC Program Collection

263 Pages

A collection of 25 favorite game, useful applications, education programs, and helpful utilities for PCjr users which have appeared in various issues of COMPUTE! Magazine. All programs have been fully tested on a PCjr.

The programs in this collection cover a wide range of interests and levels of use. You'll find serious programming applications like a fast batch file editor; valuable utilities, including a keyboard customizer, fast moving arcade style games; and clever educational games that will hold children's attention while they learn. Extremely limited quantities—Call before ordering.

Catalog #85034 Price: \$18.95 **SALE \$9.95**

BASIC Exercises for the IBM PCjr

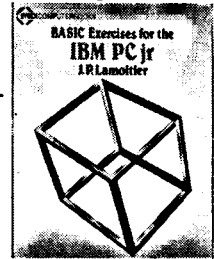
J.P. Lamoitier—251 pages

This book uses the learn by doing approach, a truly effective teaching method. It offers a practical and entertaining way to learn BASIC.

Through progressive, step-by-step examples, you'll learn the fine points of the language and learn how to write your own programs.

With a little practice, you will be using your PCjr to compute taxes, forecast sales, calculate the rate of growth, and find the average of a sequence of measurements. You'll also learn how to perform many routine accounting, statistical, and financial tasks. Includes numerous short type in programs and subroutines.

Catalog #85014 Price: \$16.95 **SALE \$9.95**



IBM PC and PCjr Logo Programming Primer

Don Martin, Marijane Paulsen, Stephen Prata - 456 pages

Designed for newcomers to the world of Logo and the IBM PCjr, this book teaches the revolutionary Logo programming language quickly and easily with exciting visual feedback. By using Logo's "turtle graphics" to introduce key programming ideas, you learn the new "top down" method of program design. This book teaches the elements of Logo in easy to read style. Each chapter has command summaries and practice exercises to help reinforce the concepts presented in the chapter. Extremely limited quantities—Call before ordering.

Catalog #85007 Price: \$24.95

COMPUTE!'s IBM PC & PCjr Games for Kids

Clark and Kathy H. Kidd—362 Pages

Your PCjr can educate and entertain children of all ages, from preschool to high school. This book includes 29 games and two utility programs which are ready to be typed in and run.

Whether you already know how to program, or are just starting out, you've probably realized that creating educational, entertaining games takes time and practice. Perhaps the best way to improve your programming skills is to type in a program yourself—and when you do so with this book you'll end up with an instant library of educational software for your children. Extremely limited quantities—Call before ordering.

Catalog #85033 Price: \$14.95 **SALE \$9.95**

IBM PC and PCjr Computer Workout

Software Lab East—62 pages

You'll have quite a workout solving over 40 crossword puzzles, word searches, mix and match games, and other fun games. Included are programming tips that will help you put your programs into great shape. Have fun while you test your computer's problem solving skills and develop your programming muscles. Do the IBM PC and PCjr Computer Workout. For ages 7 and up. Extremely limited quantities—Call before ordering.

Catalog #85008 Price: \$2.95

These books are now out of print. Once our existing supplies are sold out, we cannot get any more. Cartridge Basic or a PC Enterprises Configuration Cartridge is required for books which contain Basic programs. Super Saver Packages 1 and 2 are sold out.

PCjr Technical Reference Manual

Here's the technical information IBM provides for the PCjr. The Technical Reference Manual includes a complete description of the PCjr and all IBM brand internal options. Information is also provided for IBM's Parallel Printer Attachment and Graphics Printer.

The Technical Reference Manual also includes wiring diagrams, connector pin-outs, specifications, schematics, and BIOS listings. It is without a question the most important book you can add to your PCjr library!

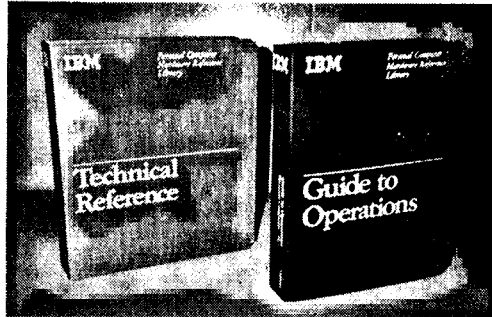
Catalog #79015 Price: \$49.95

Guide to Operations Manual

The Guide to Operations manual tells all about the PCjr. It explains how to use the keyboard, what plugs into its connectors, how to connect a monitor, plus much much more. It even includes an entire chapter on using the PCjr's built-in diagnostic tests, so you'll be able to determine just how well your PCjr is working right in your own home!

This is the manual normally provided with the PCjr when the PCjr was purchased new. Step-by-step instructions on basic PCjr operation. Includes "Exploring the IBM PCjr" animated diskette. A must for first time PCjr users. Opened.

Catalog #79033 Price: \$29.95



More Books for Reference and Learning

Sybx Books at an Amazing 30% off Cover Price!

The ABC's of WordPerfect

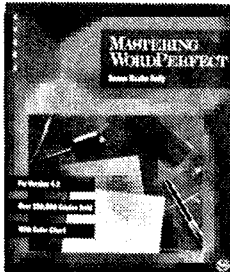
Alan R. Neibauer

Cover Price: \$18.95 Sale Price: \$12.95

This basic introduction to WordPerfect consists of short, step-by-step lessons for new users who want to get going fast. Topics range from simple editing and formatting, to merging, sorting, macros, and more.

ABC's of WordPerfect v4.2 239 pages
Catalog #85023

ABC's of WordPerfect v5.0 283 pages
Catalog #85028



Mastering WordPerfect

Susan Baake Kelly

Step-by-step training from startup to mastery, featuring practical uses (form letters, newsletters, and more), plus advanced topics such as macro creation, sorting and columnar math.

For version 4.2 (425 pages)

Catalog #85011

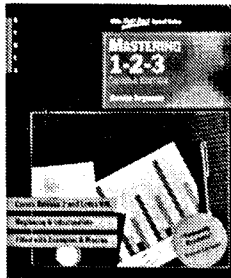
Cover Price: \$22.95 Sale Price: \$15.95

For version 5.0 (709 pages)

Catalog #85029

Cover Price: \$24.95 Sale Price: \$16.95

Mastering 1-2-3



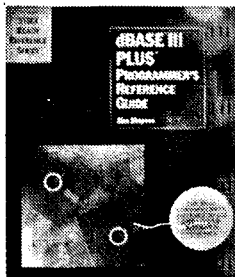
Carolyn Jorgensen 466 Pages

Catalog #85024

Cover Price: \$24.95 Sale Price: \$16.95

Get the most from 1-2-3 with this step-by-step guide, emphasizing advance features and practical uses. Topics include data sharing, macros, spreadsheet security, expanded memory, and graphics enhancements.

dBASE III Plus Programmer's Reference Guide



Alan Simpson 1035 Pages

Programmers will save untold hours and effort using this comprehensive, well organized dBASE encyclopedia. Complete technical details on command and functions, plus scores of often needed algorithms.

Catalog #85020

Cover Price: \$26.95 Sale Price: \$18.95

Sams ComputerFacts for the PCjr

Take the trouble out of troubleshooting. Provides a step by step troubleshooting procedure to help you identify and isolate problems. Identifies test points and the correct waveforms which should be present, provides point to point resistance measurements, and logic level tables. In addition, many type-in BASIC programs are included which enable the testing, alignment, and repair of the disk drive and other system components. Includes schematics for the PCjr system board, power supply, 64K memory expansion, disk drive and disk drive controller card. A must for anyone with a technical background.

Catalog #79002 Price: \$34.95

Understanding dBASE III PLUS

Alan Simpson 415 pages

A solid sourcebook of training and ongoing support. Everything from creating a first database to command file programming is presented in working examples, with tips and techniques you won't find anywhere else.

Catalog #85021

Cover Price: \$22.95 Sale Price: \$15.95

The ABC's of 1-2-3 (Second Edition)

Chris Gilbert/Laurie Williams 245 pages

Catalog #85026

Cover Price: \$18.95 Sale Price: \$12.95

Online Today recommends it as "an easy and comfortable way to get started with the program". An essential tutorial for novices, it will remain on your desk as a valuable source of ongoing reference and support.

JRCONFIG Program Stops Computer Virus!

Most PCjr users already know about Larry Newcomb's contribution to the PCjr community—but did you also know that Larry's JRCONFIG program can also warn you when a computer virus has infected your computer?

That's right! Recently PCE started to receive countless reports from PCjr users throughout the country all having the same problem. Most had 640K of memory and had suddenly started to receive a Top of DOS = 638K message.

The problem was a computer virus. Computer viruses can destroy data on your hard drive, erase or damage programs that you run, or in some other way interfere with the normal use of your computer.

Viruses are created by sick people who get enjoyment out of damaging data on other people's computer. They hide their viruses inside games or other programs which appear to be harmless—then share these programs with other computer users.

If someone gives you a program which is infected with this specific virus the virus would discretely copy itself onto the boot sector of your hard drive. Once this has happened the virus is automatically loaded into your computer's memory each time your computer is started.

If your computer contracts this virus, it would immediately copy itself onto each and every floppy diskette that you insert into your drive (except those that are write protected). As you might imagine, the virus spreads quickly and can be extremely difficult to get rid of!

Fortunately the sick individual who released this virus never suspected it would be run on a PCjr with Larry's JRCONFIG program. While the virus may go undetected as it spreads from IBM PC to PC, PCjr users who use JRCONFIG are instantly warned. The Top of DOS = 638K message tells you

that another program (the virus) has taken over 2K of your computer's memory. This allows PCjr users to re-boot from floppy and back up their data before damage can be done.

If you ever suspect that a virus has infected your computer immediately turn the computer off—then re-start with a floppy diskette which could not possibly have been infected by the virus. Back up important data to floppy diskettes, then re-format your hard drive—or find a skilled computer wizard who can locate and surgically remove the virus.

The JRCONFIG program was designed to permit PCjr's to recognize memory above 128K. It also permits PCjr users to set up and use a Ramdisk as well as a seemingly endless list of other features and options with one easy to use device driver. We think every PCjr owner should have and use Larry's program.

Editors Note: JRCONFIG is User Supported Software. This means the program's author doesn't receive a penny unless users make voluntary contributions. If you find the program useful Larry has asked that you send a \$5 or \$10 contribution. We at PCE strongly encourage those who use JRCONFIG to make this contribution. JRCONFIG has already made a significant contribution to the PCjr community and Larry Newcomb has never asked for very much. So let's be sure we keep Larry motivated to continue updating and improving JRCONFIG!

Send contributions to:

Larry Newcomb, 9210 Adelaide Dr, Bethesda, MD 20817

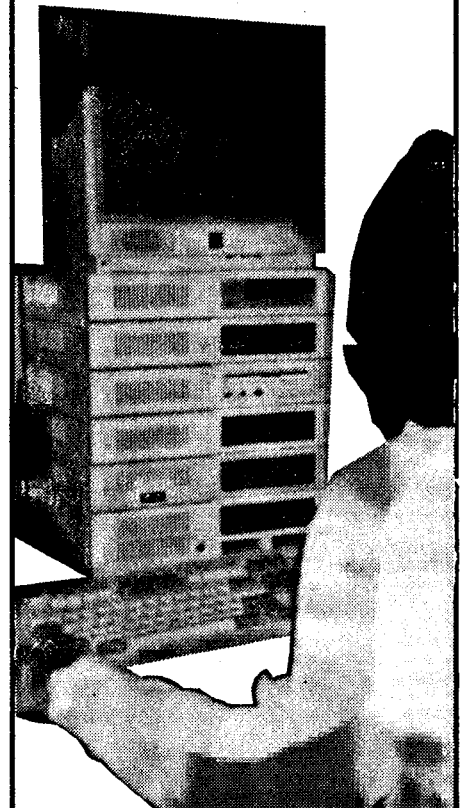
The JRCONFIG program is one of many user supported programs you'll receive when you purchase the PCjr Utility Diskette from PC Enterprises.

PCjr Utility Diskette

A collection of public domain, user supported, and copyrighted PCE software that no PCjr user should be without. Includes patches to use DOS 5.0 and also correct NMI bugs in DOS 2.1, as well numerous other PCjr utilities including JRCONFIG, T SOUND, FIXBEEP, RUNCART, INT9FIX, INT0FIX, INT10FIX, INT13FIX, plus more.

Catalog #85505 Price: \$9.95

Not all PCjr users need state of the art performance, however, for those who want it, here's what a PCjr might look like!



- Level 1: 1.2MB Floppy Drive (5¼")
- Level 2: 21MB Floppy Drive (3½")
- Level 3: 377MB Hard Drive
- Level 4: CD-ROM Drive
- Level 5: 88MB Removable Hard Drive
- Level 6: Tape Backup System

Question: Is the PCjr flirting with state of the art?

Answer: You bet it is!

Three Great Reasons to Buy Entertainment Software from PC Enterprises

SAVE 30% OR MORE!

1

Compatibility—All software sold by PC Enterprises is guaranteed to run correctly on a PCjr—or your money back. While most PC programs run without modification, programs which do not normally run are sold with special PCjr utilities which permit operation on PCjrs. We'll also supply special instructions when necessary to overcome PCjr specific problems that you may encounter.

2

Superior Graphics—Although the PCjr will run almost any program designed to run on an IBM PC with a CGA card, the PCjr is not TANDY compatible. As a result, the PCjr will not run the 16-color TANDY version of most programs that you buy. Whenever practical, PC Enterprises will modify the TANDY version of a program so the 16-color mode works correctly on the PCjr (Note: PAPERBOY is one such example).

3

Price—Our prices are very competitive with most titles priced at 30% below list. We invite you to shop and compare. Bring our catalog with you to your local computer store and see for yourself. And best of all, we never charge extra when we modify or enhance a program for operation on the PCjr.



CALIFORNIA GAMES

16-Color PCjr Graphics
Requires 640K
Catalog #86608

List \$39.95 Our Price \$25⁹⁵

Put on your knee pads — you're about to have the most fun you've had since Mom hid your skateboard. Enter six wild events and compete against up to eight players. Win enough trophies to become a California champion!

TEST DRIVE

16-Color Graphics with PCE System
Board Modifications and Software
Upgrade Requires 384K
Catalog #86604

List \$39.95 Our Price \$12⁹⁵

Experience the power and performance of the world's most exclusive cars. Test drive a Ferrari Testarossa, a Lotus Esprit, a Porsche 911Turbo, a Lamborghini Countach and a Corvette.

SPACE QUEST: THE SARIAN ENCOUNTER

16-Color PCjr Graphics
Requires 256K
Catalog #86607

List \$49.95 Our Price \$31⁹⁵

The player will board enemy space ships, explore alien landscapes and encounter weird creatures in this tale of action and adventure in deep space. Features 3-D graphics and animation, Arcade sequences and an inventive plot.

PAPERBOY

16-Color PCjr Graphics Requires 256K
Catalog #86602

List \$39.95 Our Price \$26⁹⁵

You're the Paperboy and it's time to begin your route. Hop on your bike and ride through not-so-typical suburbia. Foil the robbers and win fame and fortune as you brave mean streets. Avoid traffic, tires, motorcycles, tricycles, gratings and other obstacles.

THEXDER

16-Color PCjr Graphics
Requires 256K
Catalog #86613

List \$34.95 Our Price \$22⁹⁵

Transform the robot Thexder into a jet plane and pilot 16 battle scenarios. Features graphics and animation.

POLICE QUEST

Police Quest 16-Color PCjr Graphics
Requires 256K
Catalog #86606

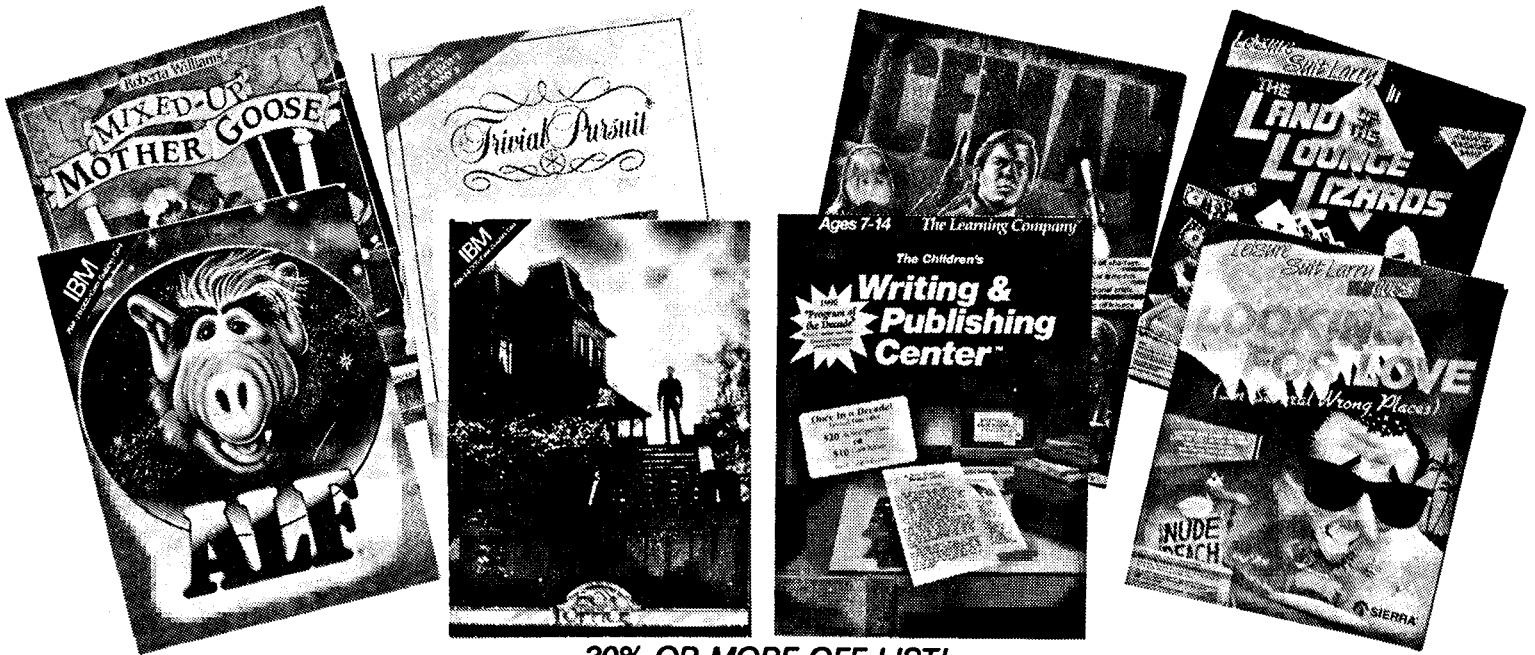
List \$49.95 Our Price \$31⁹⁵

Police Quest 2 16-Color PCjr Graphics
Requires 640K
Catalog #86615

List \$49.95 Our Price \$31⁹⁵

A 3-D animated adventure game that puts you in the role of a police officer in a mid-American town. Work your way from a street cop to undercover narcotics agent in a quest to bust a big-time drug dealer nicknamed "The Death Angel". Includes a policeman's indoctrination guide and activity map.

Software That's Fun-to-Run!



30% OR MORE OFF LIST!

MIXED-UP MOTHER GOOSE

Requires 512K
Catalog #86218
List: \$39.95 Our Price \$27.96

A fantastic entertainment program for young children which requires absolutely no reading skills. Once the program is started, a child can take over with very little instruction, because only a few computer keys are necessary to play.

ALF

Requires 384K
Catalog #86603
List \$14.95 Our Price \$9.95

Alf's best buddies from Melmac have crash landed their spaceship on Earth! Guide Alf through the maze-like neighborhood, as he collects all that was lost from the spaceship. Join him in the race against time and the Dog Catcher as you help him collect objects, rebuild the spaceship, and return his friends safely to space!

TRIVIAL PURSUIT

Requires 384K
Catalog #86622
List \$40 Our Price \$27.95

Challenge your memory using your IBM PCjr. Play against your friends or any of the six computer opponents. Each time you play, create your own edition of Trivial Pursuit selecting six of the 30 categories available. The computer players are experts but don't know it all—Do you?

THE CHILDREN'S WRITING AND PUBLISHING CENTER

Requires 384K and 1 Disk Drive
Catalog #86216
List \$69.95 Our Price \$44.95

Recommended for ages 8 to 14. A productivity program that will enable students to produce illustrated reports, stories, newsletters, and more. Features word processing, picture selections and page design capabilities. For home or school use.

Runs best with 2 disk drives.
16-Color graphics with PCE System Board Modifications!

PSYCHO

Requires 256K
Catalog #86610
List \$24.99 Our Price \$9.95

Travel to the Bates Motel to unravel this mystery. Enter both the Motel and the forbidden house on the hill. Search for clues. Keep your eyes alert and your back to the wall as you encounter the psychotic Norman Bates and his curiously silent mother.

CODENAME: ICEMAN

Requires 640K
Catalog #86621
List \$59.95 Our Price: \$36.95

You as Johnny Westland must crack the deadly security of a terrorist base and rescue a hostage ambassador. With the use of Naval Intelligence charts pilot a submarine into the enemy territory. This exciting adventure game combines action and realistic simulation for a new kind of computer entertainment.

LEISURE SUIT LARRY IN THE LAND OF THE LOUNGE LIZARDS

Requires 256K
Catalog #86601
List \$39.95 Our Price \$25.99

A humorous and harmless 3-D animated adventure game for adults. Larry is the original blind date nightmare — the kind of guy you wouldn't want your daughter to date, let alone meet. The goal is to help Larry become a hit with the ladies. Go with Larry to the disco — see if Larry finds someone to dance with. Or sit at the bar and offer an attractive young woman a drink. Maybe even take her to the casino! Test your luck — and your wit with this exciting singles scene game of the 90's. Must be 21 or older to play.

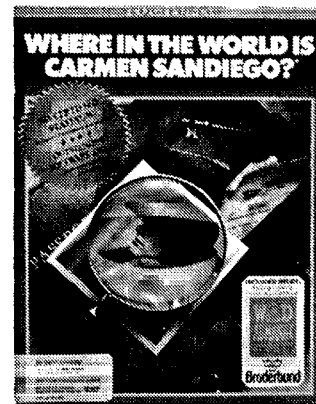
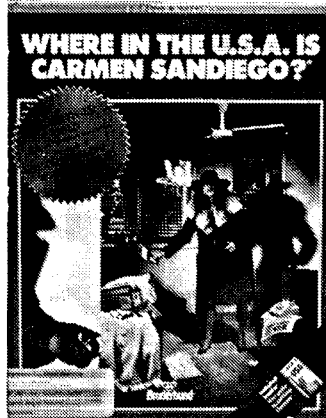
LEISURE SUIT LARRY GOES LOOKING FOR LOVE

Requires 512K and Speed Up Board
Catalog #86609
List \$49.95 Our Price \$31.95

Why is it that some of the loveliest ladies in the western hemisphere are suddenly hot to get there hands on Larry and why is Larry resisting their advances? You and Larry are off on another exciting adventure. Larry wins the lottery (or does he?). Now Larry is looking only for Miss Right as opposed to Miss Right Now. Will Larry get lucky and find someone who loves him for the person that he is? Must be 21 or older to play.

SO WHERE IS CARMEN SANDIEGO?

Expand your horizons while you have fun with the Carmen Sandiego series by Broderbund Software. In these educational and entertaining games you travel through Time, Europe, the World, and the USA looking for Carmen Sandiego. In your travels, history is brought to life highlighting people, events, inventions, cities, geography, economy, and cultures.



WHERE IN TIME IS CARMEN SANDIEGO?

16-color graphics with PCE System Board Modifications!

Carmen is on another exciting detective chase far into the past. She is somewhere between 400 A.D. and the 1950s. History is brought vividly to life highlighting leading people, events and invention. Use the New American Desk Encyclopedia (included) to solve the case.

*Requires 512K and 2 Disk Drives
Runs best with Speed-Up Board and Mouse*

Catalog #86619
List \$49.95 Our Price \$32.95

WHERE IN EUROPE IS CARMEN SANDIEGO?

16-color graphics with PCE System Board Modifications!

Carmen strikes again! Track Carmen and her gang across 34 European nations using the "Concise Atlas of Europe" (included). While traveling through the European nations you will learn about geography, history, economy, and culture.

*Requires 384K and 1 Disk Drive
Runs best with Speed-Up Board*

Catalog #86620
List \$49.95 Our Price \$32.95

WHERE IN THE WORLD IS CARMEN SANDIEGO?

16-Color EGA Graphics with Display-Master and PCjr Monitor

The metropolis awakens to find the Statue of Liberty's torch gone... Stolen! There are 10 possible suspects, 30 cities and nearly 1000 clues. Decipher clues by looking up facts in the World Almanac (included). A different game every time you play.

*Requires 512K and 1 Disk Drive
Runs best with 640K, 2 Disk Drives, Speed-Up Board, Mouse, or Joystick*

Catalog #86611
List \$49.95 Our Price \$33.95

WHERE IN THE USA IS CARMEN SANDIEGO?

16-Color EGA Graphics with Display-Master and PCjr Monitor

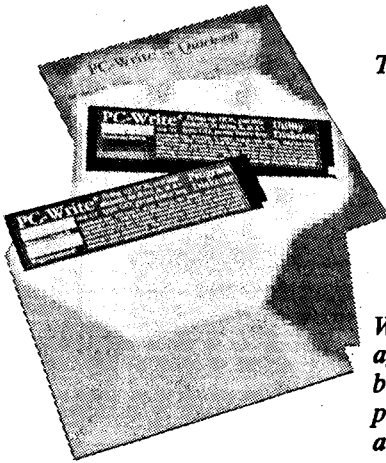
The sequel to "Where in the World is Carmen Sandiego?". Research clue information in Fodor's USA travel guide which provides maps of each state as well as specific state by state descriptions. A total of 16 suspects, 50 states and more than 1,500 clues. Thousands of random games.

*Requires 512K and 1 Disk Drive
Runs best with 640K, 2 Disk Drives, Mouse or Joystick*

Catalog #86612
List \$49.95 Our Price \$31.95

Word Processing Software

PC-Write



The shareware concept has produced some really remarkable products, and PC-Write is one of the best. PC-Write is crammed with lots of powerful features. In fact, PC-Write's features compare against even some of the best professional word processors. The manual is a model of clarity and completeness. PC-Write,

with its continuing revisions, may be the only word processor you'll ever need.

...PC Magazine

PC-Write is a full featured word processing program which includes a spelling checker. Its grown in power and complexity and is now widely considered a competitor to such expensive programs as WordPerfect, Microsoft Word, and Xywrite III.

PC-Write (Version 2.71)
256K Required—Two Disk Set
Catalog #87001 Price: \$9.95

PC-Write (Version 3.02)
384K Required—Three Disk Set
Catalog #87002 Price: \$14.95

Telecommunications Software

PC-Talk

Here's another shareware product that's proven itself as a top shelf product. If you use a modem, PC-Talk is worth trying. It works exceptionally well on a PCjr and is very easy to use.

128K and Hayes compatible modem required.

Catalog #87003 Price: \$9.95

Spreadsheet Software

PC-Calc

One last shareware product that we suggest you try is this spreadsheet. Three disk set.

Catalog #87004 Price: \$14.95

Bank Street Writer Plus

Word Processors don't get any easier than Bank Street Writer Plus. Whether you're dashing off a letter to your cousin, writing a memo to a business associate, or putting the finishing touches on a term paper, Bank Street Writer Plus makes your writing task incredibly easy.

You'll be writing in no time at all. You don't need to learn dozens of complicated commands or opre over a tedious manual. Simply turn on your computer, boot up the program and the on-screen prompts will guide you quickly to a perfect manuscript. It's so easy, everyone in the family will want to use it.

Don't let its simplicity fool you. Bank Street Writer Plus is a sophisticated word processor offering a host of features once found only in much more expensive programs. Easy for Everyone! 256K required.

- Fully prompted every step of the way
- Includes on-disk Tutorial, and comprehensive reference manual
- Pull-down menus make selecting functions fast and easy



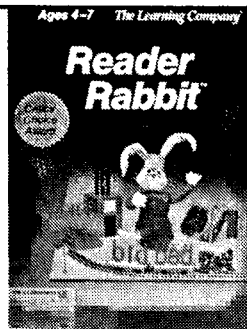
- Offers standard editing features (copy, erase, move, etc.); also supports boldface, underlining, and other printer features
- Works with a hard disk
- Offers "Writer's options such as line numbering for easy proofreading
- Includes Spelling Corrector and Thesaurus
- Create single-key commands to "skip over" often used menus and prompts
- Set up function keys to make your own multi-step commands

Catalog #86318 Price: \$59.96

Educational Software

Remember! When you buy software from PC Enterprises you never need to worry whether the program runs correctly on a PCjr. We guarantee the program will run—or your money back! So don't worry about PCjr compatibility—even if someone tells you they know that a program listed in our catalog doesn't run on a PCjr. That's our specialty. We search for programs which do

not normally run on a PCjr—then modify the programs for PCjr compatibility. We also include utility programs and special instructions when necessary to overcome known problems. Unfortunately, we can't indicate in our catalog which programs are modified because the list is constantly changing. However, modified products are always clearly marked on the package and are supported and warranted by PC Enterprises.

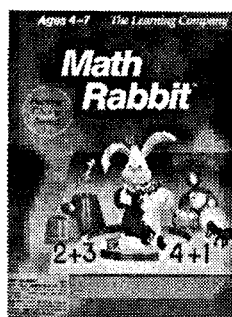


READER RABBIT

4-Color PCjr Graphics
Requires 256K
Catalog #86203
List \$39.95 Our Price **\$25.95**

Helps preschool and kindergarten children learn the fundamentals of reading and spelling. Your child will learn to improve memory skills, vocabulary and even their concentration.

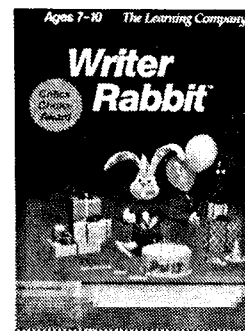
16-Color Graphics with PCE System Board Modifications (384K Required)



MATH RABBIT

4-Color PCjr Graphics
Requires 256K
Catalog #86202
List \$39.95 Our Price: **\$24.95**

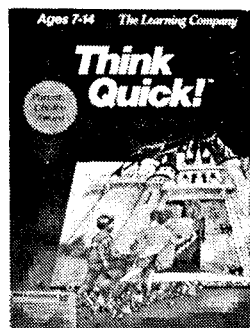
Teaches children important early math skills. Entertains and motivates using animated graphics, playful music, and the colorful dancing Math Rabbit. Includes four game levels. Ages 4 to 7.



WRITER RABBIT

4-Color PCjr Graphics
Requires 256K
Catalog #86208
List \$39.95 Our Price: **\$28.95**

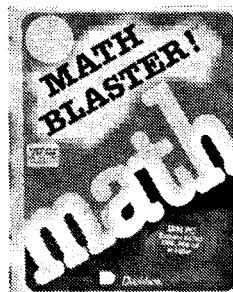
Teaches children the basic building blocks for writing. In six carefully sequenced games, children learn to put together words and phrases to build complete sentences. Grades 2 to 4.



THINK QUICK

4-Color PCjr Graphics
Requires 256K
Catalog #86204
List \$49.95 Our Price **\$25.95**

An educational, fun game which will help build your child's thinking skills. With six different game levels, your child will go from room to room solving different puzzles. Ages 7 to 14.



MATH BLASTER

4-Color PCjr Graphics
Requires 256K and BASIC
Catalog #86201
List \$49.95 Our Price **\$31.95**

With over 600 problems covering addition, subtraction, multiplication and division, this program will help teach your child the basics of math. It even includes fractions, percents and decimals. Designed for children grades 1 to 6.



DESIGNASAURUS

Requires 512K
Catalog #86206
List \$39.95 Our Price **\$9.95**

An exciting program for everyone who loves dinosaurs! The program has three parts: Walk-A-Dinosaur, Build-A-Dinosaur and Print-A-Dinosaur, which increase the child's interest in science and stimulates creative and independent thought.

Educational Software

SUPER SOLVERS: OUTNUMBERED!

4-Color PCjr Graphics*
Requires 512K and 1 Disk Drive
Catalog #86211

List \$49.95 Our Price \$30.95
Recommended for Ages 7-12.
Collect clues that will lead you to the hideout of the Master of Mischief. This fun-filled game combines arcade action with word problems that use charts, lists and graphics to help children analyze and solve basic math problems in multiplication, division, addition and subtraction. The "Drill for Skill" game lets players practice math facts.



* Runs best with 640K, 2 disk drives and speed up Board. 16-color graphics with PCE System Board Modifications (640K required)!

SUPER SOLVERS: MIDNIGHT RESCUE!

4-Color PCjr Graphics*
Requires 512K and 1 Disk Drive
Catalog #86212

List \$49.95 Our Price \$30.95
Recommended for Ages 8-11.
You have until midnight to discover the culprit who is splashing disappearing paint on the school. Midnight Rescue helps develop your child's reading and thinking skills; reading for the main idea, remembering key facts, gathering meaning and drawing conclusions. Your child will have an appreciation of reading that will last forever.



* Runs best with 640K, 2 disk drives and speed up Board. 16-color graphics with PCE System Board Modifications (640K required)!

SUPER SOLVERS: TREASURE MOUNTAIN!

4-Color PCjr Graphics*
PCjr Sound
Requires 512K and 1 Disk Drive
Catalog #86213

List \$49.95 Our Price \$30.95
Recommended for Ages 5 to 9.
Something peculiar is happening on Treasure Mountain! The Master of Mischief is back and has stolen the enchanted crown and is taking all the gold on the mountain for himself. Stop the Master of Mischief by answering questions from the local elves, who will assist you in finding the hidden treasures. Will help enrich your children's reading, thinking, math and science skills.

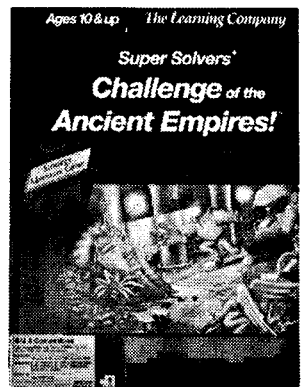


* Runs best with 640K, 2 disk drives and speed up Board. 16-color graphics with PCE System Board Modifications (640K required)!

SUPER SOLVERS: CHALLENGE OF THE ANCIENT EMPIRES

4-Color PCjr Graphics*
PCjr Sound
Requires 512K and 1 Disk Drive
Catalog #86214

List \$49.95 Our Price \$30.95
Recommended for ages 10 & up.
The world's most priceless artifacts were stolen by thieves centuries ago. These artifacts reveal the secrets of the ancient world and are buried far beneath the desert sands. You must recover the priceless artifacts by discovering the secrets of the caverns and chambers, fearlessly confronting menacing cave creatures and facing the final challenge.

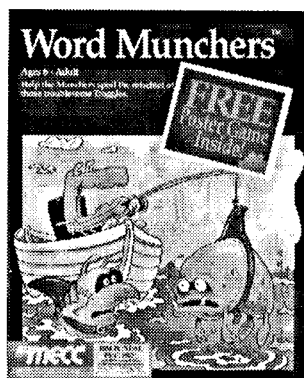


* 16-color graphics with PCE System Board Modifications! 256-color graphics with Display-Master VGA Sidecar (640K required)!

WORD MUNCHERS

4-Color PCjr Graphics*
Requires 512K
and 1 Disk Drive
Catalog #86215
List \$49.95 Our Price \$30.95

Recommended for ages 6 to adult. Word Munchers is an exciting game to help children learn basic vowel sounds. Choose from hundreds of game boards. As your child's skills increase, the game boards become more complex and challenging.

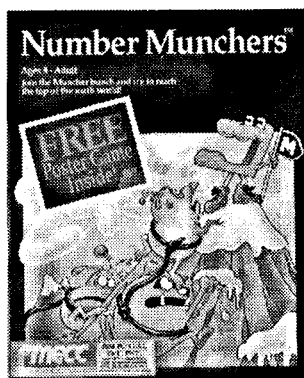


* Runs best with a joystick. 256-color mode with Display-Master VGA Sidecar (640K required)!

NUMBER MUNCHERS

4-Color PCjr Graphics*
Requires 512K and 1 Disk Drive
Catalog #86217
List \$49.95 Our Price \$31.95

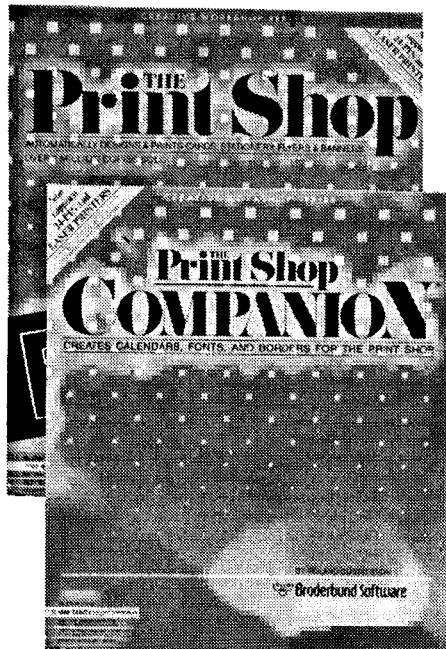
Recommended for ages 8 to adult. Number Munchers is an educational game designed to help children practice their skill at recognizing basic numbers and relationships. Choose from a number of different difficulty levels for more challenging and complex gameboards.



* Runs best with a joystick. 256-color mode with Display-Master VGA Sidecar (640K required)!

Productivity Software

The New Print Shop and Print Shop Companion



THE NEW PRINT SHOP

This program allows you to design your very own signs, banners, invitations, letterheads and more. With a large range of designs and eight different typefaces, it's like having your very own print shop right at home.

Requires 512K (640K and Hard Disk Drive Required for Color Printing)
Catalog #86301
List \$59.95 Our Price **\$39.95**

THE NEW PRINT SHOP COMPANION

Expand your print shop! This program includes more typefaces, borders and graphics. Now you can design your own alphabets with the font editor. The print shop companion will let you take your creativity one step further.

Requires 512K
Catalog #86302
List \$49.95 Our Price **\$37.46**

QUICKEN v5.0

A perfect software program designed for handling home finances. Will help with check writing, tax record keeping, financial reporting, budgeting and cash management.

Requires 512K, 640K Recommended
Hard Drive Required
Catalog #86317
List \$69.95 Our Price **\$49.95**

MANAGING YOUR MONEY 5.0

An integrated personal financial package. Let Andrew Tobias help you through budgeting, tax planning and investment analysis.

Requires 128K, 256K Recommended
Catalog #86304
List \$219.98 Our Price **\$139.95**

FIRST CHOICE 3.0

A good program for the first time computer owner with business needs. Includes word processing, file management, business graphics, spreadsheet analysis and more!

Requires 512K, 640K Recommended
Requires 2 drives
Catalog #86312
List \$179 Our Price **\$99.95**

SAT (BARONS)

Designed to help you prepare for your scholastic aptitude test. Good practice for all types of questions. Will help to point out your weaknesses.

Requires 512K
Catalog #86309
List \$49.95 Our Price **\$31.95**

COPY II PC

Protect your valuable software investments. Copy II PC is one of the best back up programs for copy protected disks. It allows you to back up most copy protected disks including business, entertainment and educational software.

Requires 256K
Catalog #86314
List \$39.95 Our Price **\$29.96**

MICRO COOKBOOK

Need cooking ideas? This program allows you to choose from over 150 different recipes from all over the world. Designed to make cooking fun and easy!

Requires 256K, 384K Recommended
Catalog #86310
List \$49.95 Our Price **\$31.95**

CERTIFICATE MAKER

Create your own certificates. Choose from over 200 certificates in many different categories. Includes various typefaces and borders. Also includes over 3 dozen colorful seals. Works best with a dot matrix printer.

Requires 256K
Catalog #86311
List \$39.95 Our Price **\$25.95**



PC Enterprises'

Spring/Summer 1992 Catalog Index

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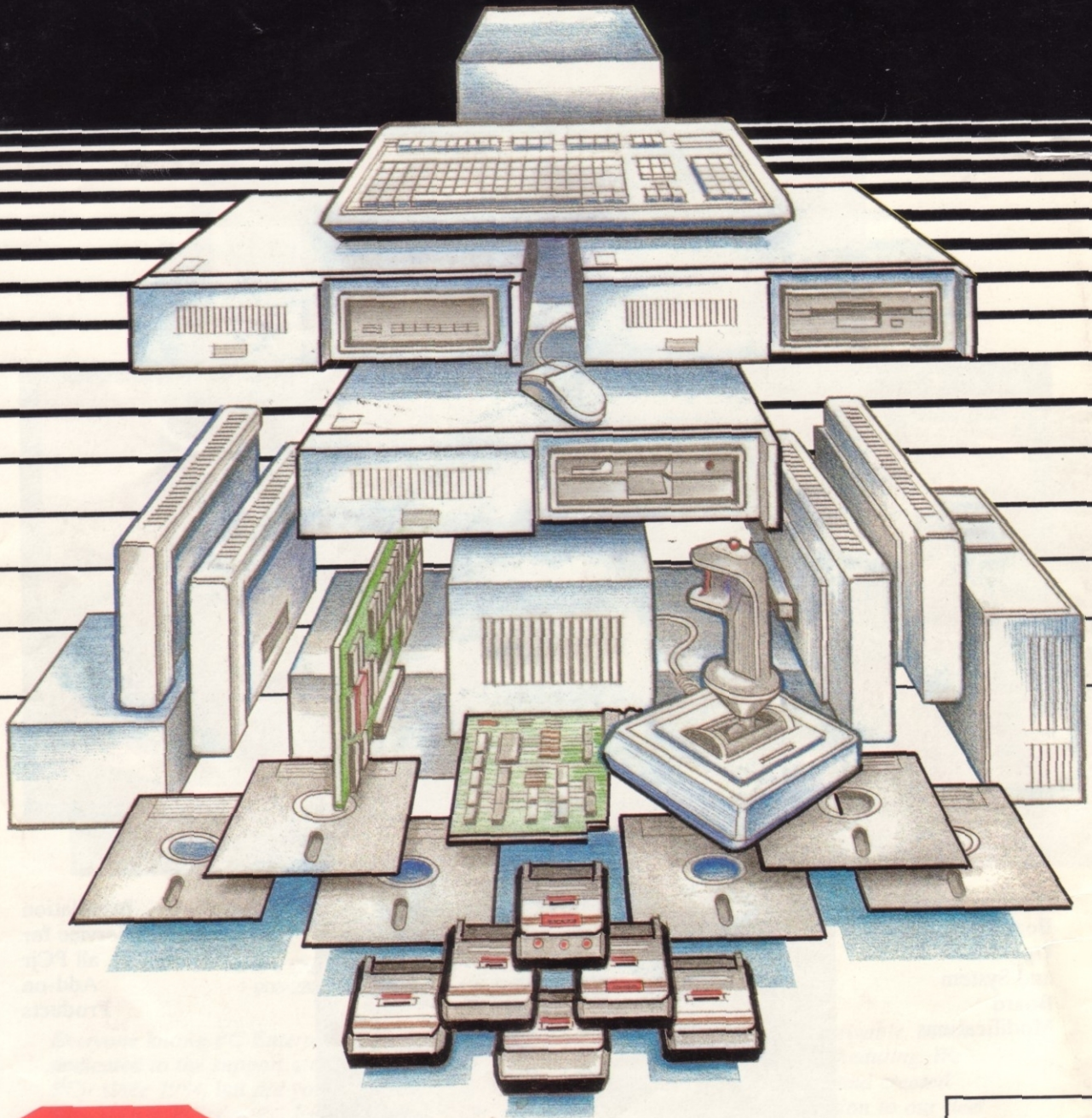
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