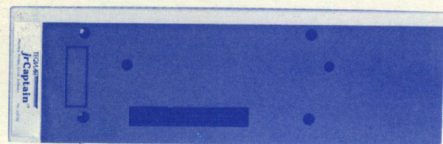
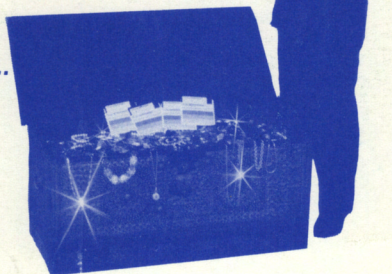


jrMATE™ Products

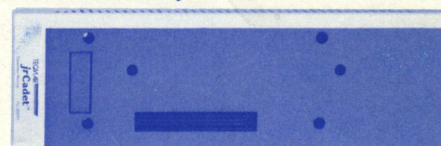


jr Captain™

Treasure Chest™ of Software
included **FREE** with jr Captain...
Powerful personal productivity
software at no extra charge!



jr Wave™



jr Cadet™



Jr 2nd Mate™

Add power to your PCjr

Expand your PCjr's usable memory to 640 KBytes and add more features! Tecmar gives your PCjr the power of its big brother, the IBM PC, with our new line of add on products for the PCjr.

Features

jrCaptain board adds 0 to 128 KBytes of memory, is fully socketed for easy upgrade, and adds printing power plus a clock calendar - all on one board

Run 1-2-3 form LOTUS™* with the jrCaptain

jrWave adds 0 to 256 KBytes of additional memory to your jr

Add a jrCadet to your jrCaptain or jrWave and you can add another 384 KBytes of memory

jr2nd Mate gives your PCjr printing power and a real time clock/calendar

Treasure Chest of Software included FREE with jrCaptain...Powerful personal productivity software at no extra charge!

JrWave and jrCaptain include an electronic disk simulator so you don't need an additional disk drive

Tecmar's jrCaptain allows you to add an additional 128 KBytes of memory to your PCjr, giving you a maximum of 256 KBytes. With the addition of a jrCadet, a total of 640 KBytes is possible, allowing you to run IBM PC software that the PCjr previously could not run.

Now you have access to the complete library of IBM PC software, including programs like 1-2-3 from LOTUS.

In addition to this program Tecmar has also included a program which lets you set up a second disk drive in RAM memory. This electronic disk is particularly useful when running any IBM PC program which requires the use of two disk drives. It is also useful for copying disks and any applications requiring fast and frequent disk access.

The printer port on the jrCaptain and jr2nd Mate has a parallel interface which allows it to be easily used with any parallel printer, such as an IBM or EPSON. It can be accessed with any IBM PC software, or be used for general parallel input and output. The parallel printer port address is jumper selectable as LPT 1 or LPT 2. A software printer buffer is included which lets you use your computer while you are printing.

The clock on the jrCaptain and jr2nd Mate keeps track of the current time and date. Because it's powered by it's own battery, it will still remember the time while the PCjr is turned off. The clock can also cause an interrupt when the current time and date match a preset time and date. Software for the clock enables it to reset the PCjr's system clock with the correct time and date automatically on boot up.

Included free with the jrCaptain is the Treasure Chest of Software, a large collection of programs that are easy and fun to use. Some of these programs are:

Electronic Rolodex • Checkbook Balancer • Mailing List • Memo Writer • Forms Generator • Inventory Management • Automatic Appointment Alert • Banner Generator • 3-D Tic Tac Toe • Calendar Generator • Confidential File Coding • Time and Date Setter • Memory Diagnostic • Printer Diagnostic • Time of Day Diagnostic • Printer Buffer • Electronic Disk • and many more...

The jrCaptain and JrWave come with their own power supply. The jrCadet draws power from one of these two boards.

(Continued on back)

*LOTUS and 1-2-3 are trademarks of the Lotus Development Corp.

jrMATE™ Products

Configurations

- jrCaptain**
- 0 to 128 KBytes memory (0 to 512 KBytes with 256 KByte RAM chips)
 - Parallel printer port
 - Clock/Calendar with battery back-up
 - Treasure Chest of Software
- jrCaptain & jrCadet**
- 0 to 512 KBytes memory
 - Parallel printer port
 - Clock/Calendar with battery back-up
 - Treasure Chest of Software
- jrWave**
- 0 to 256 KBytes memory (0 to 640 KBytes with 256 KByte RAM chips)
 - Electronic disk
 - Memory diagnostic
- jrWave & jrCadet**
- 0 to 640 KBytes memory
 - Electronic disk
 - Memory diagnostic
- jr2nd Mate**
- Parallel printer port
 - Clock/calendar with battery back-up
 - Printer buffer
 - Autotime software

Specifications

jrCaptain

- Memory Capacity: 0 to 512 KBytes (with jrCadet)
- Parallel Printer Port I/O Address: 378, 379, and 37A or 278, 279, and 27A. Jumper selectable
- Clock Calendar I/O Address: 37D and 37F or 27D and 27F. Jumper selectable
- Load: 1 TTL load/bus line max.
- Ram Chips: INTEL 4164-20 (or equiv.) or 256K RAM's INTEL part no. 8125
- Battery Life: Approx. one year
- Power: 800 mA @ +5V max. (128 KBytes)

jrWave

- Memory Capacity: 0 to 640 KBytes (with jrCadet)
- Load: 1 TTL load/bus line max
- Ram Chips: INTEL 4164-20 (or equiv.) or 256K RAM's
- Power: 470 mA @ +5V max. (256 KBytes)

jrCadet

- Memory Capacity: 64 to 384 KBytes
- Ram Chips: INTEL 4164-20 (or equiv.) or 256K RAM's INTEL part no. 81256

jr2nd Mate

- Parallel Printer Port I/O Address: 378, 379, and 37A or 278, 279, and 27A. Jumper selectable
- Clock Calendar I/O Address: 37D and 37F or 27D and 27F. Jumper selectable
- Load: 1 TTL load/bus line max.
- Battery Life: Approx. one year
- Power: 400 mA @ +5V max. 280 mA @ +5V typ.

Ordering Information June 1st, 1984

Part No.	Description	Sugg. Retail Price	Part No.	Description	Sugg. Retail Price
20502	jrCaptain with 0 KBytes	\$235 ⁰⁰	21503	jrCadet with 64 KBytes	\$195 ⁰⁰
21502	jrCaptain with 64 KBytes	315 ⁰⁰	22503	jrCadet with 128 KBytes	275 ⁰⁰
22502	jrCaptain with 128 KBytes	395 ⁰⁰	24503	jrCadet with 256 KBytes	445 ⁰⁰
			26503	jrCadet with 384 KBytes	595 ⁰⁰
21505	jrWave with 64 KBytes	\$295 ⁰⁰	20501	jr2ndMate	145 ⁰⁰
22505	jrWave with 128 KBytes	375 ⁰⁰			
23505	jrWave with 192 KBytes	445 ⁰⁰			
24505	jrWave with 256 KBytes	495 ⁰⁰			

Junior Addition:



Photo 1: The Tecmar jrCaptain peripheral comes with three manuals, a diskette of software programs, its own power source (the small transformer is not shown here), and the special screws to mount it to the PCjr.

A Review of the Tecmar jrCaptain Peripheral

by David G. Brader

HCM Staff

Did you buy an IBM PCjr with a disk drive and RAM? Have you been frustrated in your efforts to do serious work on the machine? Are you lusting for more computing power? Tecmar may just have the answer for you . . .

The Tecmar jrCaptain peripheral for the IBM PCjr sports two major attractions for the Junior owner—a battery-backed-up clock (to remember the date and time even when the PCjr power is off), and additional Random Access Memory (RAM). The amount of additional RAM depends on the type of memory ICs (integrated circuits) installed. The jrCaptain sample that we tested came equipped with the 64K-bit ICs (16 ICs for a total of 128K bytes of RAM) mounted in sockets. Tecmar's jrCaptain installation manual contains instructions for replacing these ICs with the new 256K-bit ICs, upgrading the peripheral to 512K bytes of RAM.

The jrCaptain looks much the same as the IBM PCjr parallel printer module that fits on the side of the computer. Indeed, the jrCaptain module has a compatible parallel printer port as one of its elements. The jrCaptain does, however, have its own power supply (yes, you must find another socket for the AC power pack to plug into . . . With 128K of RAM, it uses less than one amp from its internal 5 volt supply.

More Than Just a Printer Port

The parallel printer port on the Tecmar jrCaptain is software compatible to the IBM version. The connector for the port (DB25 type) matches the IBM parallel printer cable used to connect to an IBM (or compatible) printer. While writing this review, we have our jrCaptain connected to an Epson MX80F/T. This port can also be used for other general-purpose parallel input or output. (Analog/digital or digital/analog converters anyone?)

By changing a jumper inside the Tecmar jrCaptain, the parallel port may be switched from device name "LPT1:" to device name "LPT2:." Although only one jrCaptain can be attached to Junior, the Tecmar product can be used with the IBM parallel port adapter to drive two printers from the one PCjr. "LPT1:" is the only device name available with the IBM parallel port ("LPT2:" cannot be accessed with IBM PCjr equipment, even with two IBM parallel ports attached). What does this mean?

You could connect a high-speed dot-matrix printer to the IBM port as "LPT1:" and a slower letter-quality printer to the jrCaptain port as "LPT2:." Because the default device name for the system printer is "LPT1:," all listings, reports, and rough drafts will automatically be printed on the high-speed printer. When you have a business letter or final draft document ready to print, it is simple to redirect the output to device "LPT2:."

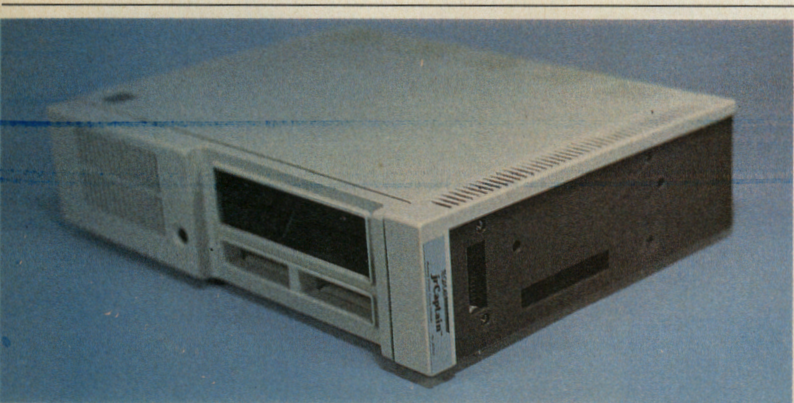


Photo 2: The jrCaptain mounts neatly to the side of the PCjr, just like the the IBM parallel printer port. In fact, it can perform the same functions.

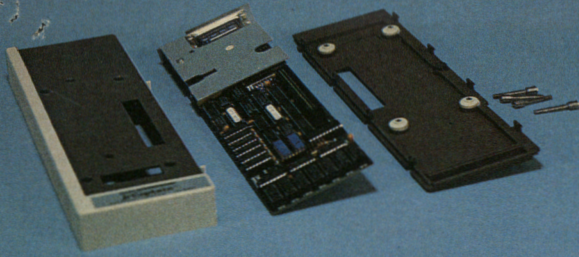


Photo 3: The jrCaptain case "pops" apart allowing access to the memory chips, selector switches, and clock battery.

Timing Is Everything

Do you usually skip entering the date and time when powering up your Junior? The jrCaptain will not only remove this hassle, but (with the aid of Tecmar software included in the package) will also automatically place the correct date and time on the screen every time you power up the system!

The jrCaptain's battery-powered digital calendar-clock can be used to trigger messages to the screen at preset times using a Tecmar software utility called CRON. When Junior is on, it can remind you that it is time to pick up the kids from school or to call Aunt Mary while the rates are lower—better than a simple alarm clock.

A major drawback to the clock feature is, however, its battery.

The battery must be changed by a local factory-trained technician, or the entire jrCaptain must be returned to Tecmar. Considering the fact that Tecmar printed extensive instructions in the installation manual for changing the memory ICs (a more complex task), requiring technical assistance to change the battery seems ludicrous!

128K More RAM, But . . .

Unfortunately, the additional memory doesn't mean that a PC application that was memory-bound on Junior will now work just fine. This is due to Junior's design, which uses the memory address space differently from the PC.

In the PC, the video memory is located on a video adapter board, separate from the system memory where our PC application program is located. This video memory, which is used to keep track of what is displayed on the screen, is addressed starting at location 704000 in the PC. The system memory, for application programs, can take up almost all of the address locations below the video memory—more than 640K bytes of contiguous memory if all PC memory expansion is installed. The PCjr hardware, however, places the video memory in the lower 128000 locations of system memory. So if your application program needs more

"The jrCaptain will not only remove the hassle . . . it will automatically place the correct date and time on the screen every time you power up the system!"

than about 100K bytes of memory, it will not work on the PCjr without major reprogramming—even with the jrCaptain attached.

So What Good Is The Additional Memory?

The answer: *RAMdisk*. With the aid of another special program supplied with the jrCaptain (called MEMDISK), the additional memory can be configured to function like a disk drive to DOS. Most of the DOS commands such as DIR, COPY, DEL, and TYPE work just the same with *RAMdisk* as they do with your built-in real disk drive (only noiselessly and with far greater speed). DANGER! Any data that you store on the *RAMdisk* will be lost when you turn off the power to the PCjr. If you are storing data that you want to keep—copy it back onto a real diskette before shutting down for the night.

It is wiser to use *RAMdisk* to hold a copy of the programs you are currently using, and to put all of your data on a diskette in the real drive. Imagine putting a full word processor including spelling checker on the *RAMdisk* during a writing session—with the documents stored on a data diskette in drive A . . . Sorry, there isn't enough *RAMdisk* memory space with the 128K version of the jrCaptain to do this. For example, the new *IBM Writing Assistant* package, including the spelling checker, fills one diskette. Our suggestion: Buy the 512K version of the jrCaptain if you are going to use heavy-

Name:	Tecmar jrCaptain
Description:	jrCaptain with 128K of RAM memory, clock, printer port peripheral with soft ware and manuals, 1 year limited warranty
Machine:	IBM PCjr
Distributor:	TECMAR INCORPORATED Personal Computer Products Division 6225 Cochran Road Solon (Cleveland), Ohio 44139 (216) 349-0600
Price:	With Memory, \$395. Without Memory, \$235.
System Requirements:	IBM PCjr with 128K RAM and the IBM disk drive
	Poor Fair Good Excellent
Performance:	██████████
Ease of Set-up:	██████████
Documentation:	██████████

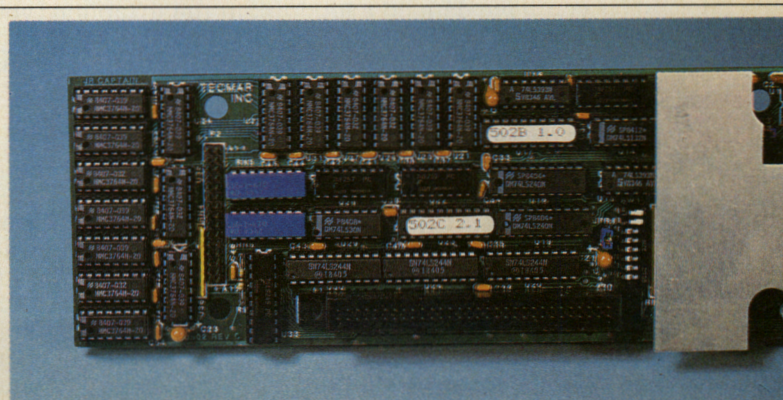


Photo 4: All 64K RAM chips are socketed for easy replacement when the price and availability improve on the 256K RAMchips (increasing on-board memory to 512K-bytes).

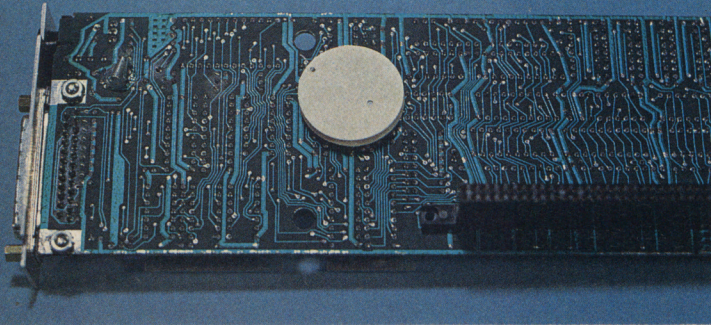


Photo 5: The round disk in the center of the back of the jrCaptain board is special battery for the on-board clock/calendar. It must be replaced by a factory-trained technician.

duty business packages. [At the present time, due to the cost of 256K RAM chips, Tecmar is offering an add-on product called the jrCadet to mount on the jrCaptain. The jrCadet uses 64K RAM chips to add 384K of addressable memory to the 128K jrCaptain. The suggested retail price of the jrCadet with 384K is \$595.—Ed.]

Printer Buffer

Another immediate use for the jrCaptain's memory is to temporarily hold documents or listings being sent to the parallel printer. This "spooling" of data to be printed means that you can continue working at the keyboard while the printer is doing its thing—nice feature, especially if you are doing production typing. (Don't laugh, many people are able to type fast on the PCjr keyboard. Plus, there are now several office-quality keyboards available.) The software to configure the memory for this purpose is also supplied by Tecmar with the jrCaptain.

Basic Usage Of The Expansion Memory

PCjr Cartridge BASIC programmers can use the additional memory with many of their applications. The DEF SEG command is used to locate BASIC's data segment pointer anywhere in the addressable memory range. Then BLOAD, BSAVE, and CALL may be used to load, save, and call assembly language programs from the addressed segment of memory.

If you have defined a RAMdisk in the jrCaptain, you can use BLOAD and BSAVE to do rapid video memory paging—quickly switching many screen images opens a new area of animation on the PCjr.

Installing The Sidekick

Installing the jrCaptain is a two-step process. Attaching the unit to the right side of the PCjr requires a medium-sized flat-blade screwdriver and a clear workspace. The Tecmar manual is very clear on the steps involved to accomplish this task—it takes less than 15 minutes. The second stage of installation deals with the Disk Operating System. A special program (yes, it too is provided) called CONPCJR must first be run when the system is initialized or reset. Complete the installation by copying the program to your DOS 2.1 "boot" diskette and creating an AUTOEXEC.BAT file that calls the CONPCJR program first. To find out how to create batch files, check your manual or read the *Home Computer Magazine* Tech Note for IBM in the August, 1984 issue.

The CONPCJR program has several options that can change the default hardware configuration as seen by DOS. Of primary interest is the option that lets you

"This 'spooling' of data to be printed means that you can continue working at the keyboard while the printer is doing its thing . . ."

designate additional disk drives on-line. By placing CONPCJR -D2 in the first line in your AUTOEXEC.BAT file, disk drives A and B are recognized by the system. By making the next line in the file MEMDISK B:, all disk drive B-addressed functions are directed to the RAMdisk.

For those of you who have already read the article in this issue describing the addition of a second *real* disk drive to Junior: yes, this software trick works with those hardware modifications, too. If you have made the modifications to your system as described in that article and you also wish to use the jrCaptain RAMdisk, the first two lines in AUTOEXEC.BAT should be entered as: CONPCJR -D3 and MEMDISK C: -APL128. Now the two real drives will be device addresses A and B while the RAMdisk becomes device address C.

Other Jewels From The Treasure Chest

The diskette that comes with the jrCaptain contains all the little program gems that we have covered, plus a bunch more. Some are rather frivolous—a banner letter-printing program or Tic-Tac-Toe—but others are very useful. My favorite has to be the MEMDISK program mentioned above because of the speed and flexibility that a RAMdisk adds to Junior.

Tecmar calls the diskette of programs their "Treasure Chest of Software." Although this is definitely advertising hype, the software certainly adds value to the jrCaptain package.

How About the Documentation?

Three manuals come with the unit: *Treasure Chest User's Guide*, *Treasure Chest Technical Reference*, and *jrCaptain Installation Manual*. The first two manuals cover all software programs supplied except the CONPCJR routine, which is covered in the third. This third manual is the one to read carefully prior to attempting to install or use the jrCaptain. It also contains much data of use to programmers, regarding hardware addressing and control of the unit. All three manuals are colorless and simple, but they have all the information a jrCaptain owner is likely to desire.

So, Should I Buy It Or Not?

If you have not purchased the IBM parallel printer port adapter and you feel the features described above fit your needs (and budget), yes—buy it. It is a well-built handsome unit and comes with a one-year limited warranty. Just remember, however, that in light of the recent across-the-board IBM price decrease, plus the imminent (as we go to press) introduction of a more powerful and flexible Junior, the cost of the Tecmar accessories should be weighed very carefully. **HCM**