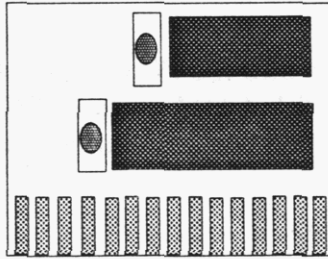


PC Enterprises'

ComSwap Board

Installation and Operation Manual



Ends COM Port Mystery

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If your PCjr has not already been set up at this time, please do so before installing this option.

This carton should contain the following:

- ComSwap Board
- Installation and Operation Manual

Please inspect this package to determine whether any item appears missing or damaged. If any item is missing or damaged report the missing or damaged item to the place of purchase as soon as possible.

INTRODUCTION

Congratulations on your purchase of a PC Enterprises product. We expect our product to serve you reliably for many years to come. We hope you will be pleased with this product and pledge to try very hard to keep you satisfied with our support, service and new PCjr products.

This product plugs into the PCjr's internal modem slot and makes the PCjr's COM ports 100% address compatible with the first two communication ports on an IBM PC.

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INSTALLATION REQUIREMENTS

SYSTEM REQUIREMENTS

64K PCjr

TOOLS REQUIRED

Medium sized flat-blade screwdriver or small coin.

COMPATIBILITY

The ComSwap Board plugs into the PCjr's internal modem slot. As a result this product is not compatible with internal modems or other PCjr products which also plug into the PCjr's internal modem slot.

WHAT YOU SHOULD KNOW

While virtually all well-behaved PC programs do run correctly on a PCjr without modification - hardware differences between the IBM PC and the PCjr do exist.

Under normal circumstances the PCjr's BIOS will make these differences transparent to the user. Unfortunately, certain programs bypass the usual BIOS interface and directly address the computer's hardware. When this happens hardware differences can prevent PC programs from running on a PCjr.

One hardware difference which often causes a problem concerns the PCjr's RS-232 Serial Communication Port. This port can normally be used to connect a variety of serial devices to the computer including a mouse, modem, printer, or plotter.

The connector used for this port is located on the rear of the PCjr system unit and is marked with the letter S. Just about any serial peripheral can be connected to the PCjr by attaching the peripheral device with a PCjr Serial Cable available from IBM, PC Enterprises, and other suppliers.

The problem concerns the addresses used for the communications ports known as COM1 and COM2.

An IBM PC can normally be configured with two RS-232 ports. The first RS-232 port on an IBM PC always uses hardware address 3f8 hex and is always considered COM1. The second port always uses hardware address 2f8 hex and is always considered COM2.

The PCjr only comes with one RS-232 port which uses hardware address 2f8 hex. From the above discussion you'll remember the PC always equates 2f8 hex with COM2 - but the PCjr may associate either COM1 or COM2 with 2f8 hex - depending upon whether or not an internal modem is installed.

If an internal modem is installed the PCjr equates hardware address 2f8 hex with COM2 and everything is fine because the PCjr's hardware is now address compatible with the PC's hardware.

The problem will only show up if you do not have an internal modem installed. In this case the PCjr's serial port is assigned the name COM1 even though it still uses hardware address 2f8 hex.

In this configuration the PCjr is not 100% address compatible with the PC. If a program that you run should ask which COM port you're using and you tell it COM1 everything will work fine as long as the program doesn't

write directly to the hardware. If you tell the program you're using COM2 everything works fine as long as the program doesn't interface through DOS, BIOS, or BASIC.

The problem is that you cannot tell, nor can you control which addressing scheme the program you are running will use. As a result all you could do is cross your fingers and guess whether to try COM1 or COM2.

If you're lucky, your program will use one address scheme or the other, but not both. If this happens the only disadvantage is you'll never be able to tell in advance whether to set up your program to use COM1 or COM2 without trying it first.

Unfortunately, things are not always this straight forward. Some programs use one address scheme for certain features and the other scheme for other features. When you try to run one of these programs everything will be fine until you try to use a feature which uses the wrong address scheme. For example, a program you use to operate your modem may work fine until you attempt to download a file and your system suddenly locks up.

Software fixes all have a variety of disadvantages. The major disadvantage is that software fixes are temporary. This means you must run the software fix each time the computer is turned on. You must also be careful not to run the program more than once because the effect may be negated.

An easier to live with solution because its permanent and works without any software at all is to install an internal modem. (Remember, with the internal modem installed the PCjr's RS-232 port becomes 100% address compatible COM2 on an IBM PC). The disadvantage

of this solution is that you'll need to purchase and install an internal modem even though you'll probably never use it. Installing an internal modem also has one other drawback: the internal modem uses virtually all of the PCjr's remaining +12 Volt power and a good share of its +5V power as well.

The ComSwap Board provides the best solution of all. Its a small inexpensive circuit board that does not use any of the PCjr's +12 Volt power reserve and a negligible amount of +5 Volt power.

Just plug the ComSwap Board into the PCjr's internal modem slot then forget that its there. Your PCjr's COM port will now be 100% address compatible with the IBM PC because the ComSwap Board fools the PCjr into assigning COM names exactly as it would if an internal modem was installed.

The ComSwap Board therefore ends the mystery as to whether software should be set up to use COM1 or COM2. Software will always correctly address the PCjr's RS-232 port when set up to use COM2.

The ComSwap Board is strongly recommended for all PCjr users who do not already have an internal modem installed.

INSTALLING THE HARDWARE

1. Turn your IBM PCjr power off.
2. Turn all external options power off (printer, monitor, etc.).
3. Unplug the power cord for the PCjr from the wall outlet.
4. Turn your IBM PCjr so the rear is toward you.

Caution: Serious shock hazards exist within the covers of the IBM PCjr. Do not open these covers unless you have unplugged you IBM PCjr power cord from the wall outlet.

Warning: After turning your IBM PCjr power off, allow 5 minutes for cooling to take place before removing the top cover.

5. Place a flat-blade screwdriver into the slots and twist. See Figure 1.

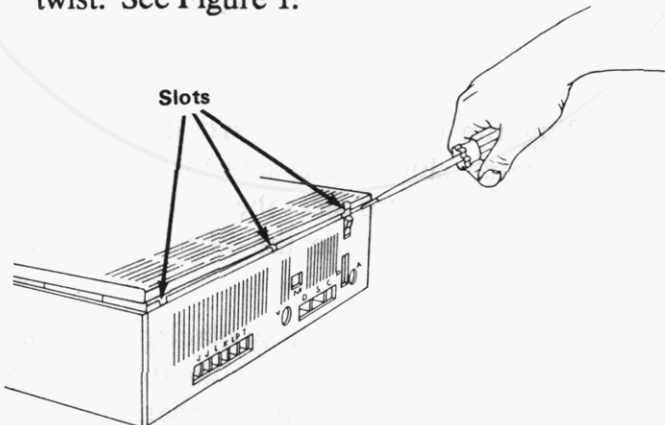


Figure 1

6. Remove the PCjr's cover. See Figure 2.

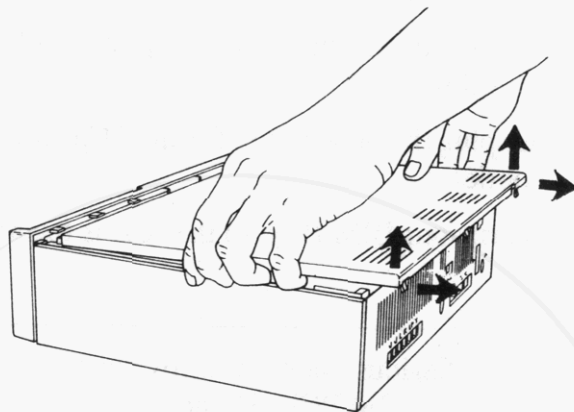


Figure 2

7. Locate the computer's internal modem slot. See Figure 3.

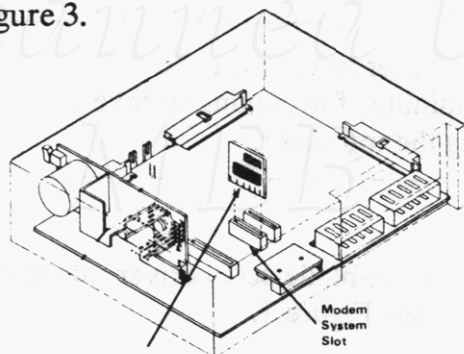


Figure 3

8. Plug the ComSwap Board into the internal modem slot making sure that the component side of the board faces the same direction as the other boards inside the PCjr. (Refer back to figure 3).
9. Replace the top cover by placing it on the IBM PCjr. Slide it forward until the top cover and the front of the IBM PCjr fit together. Press down on

the rear of the top cover until it snaps into place.
See Figure 4.

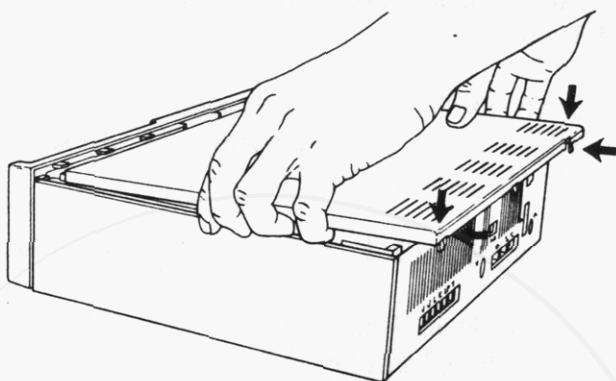


Figure 4

TESTING

The ComSwap Board does not need to be tested however, its easy to test using the **DEBUG** program supplied on the supplemental DOS diskette.

Start the **DEBUG** program without a ComSwap Board installed. To do this type **DEBUG** then press **ENTER**. (If you receive the message: Bad command or file name it means the **DEBUG** program is not on the diskette in your default disk drive).

The prompt for debug is a dash (-). When you see the dash prompt appear type:

D0000:0400 L 2 < then press enter. >

This command causes the hardware address assigned to COM1 to be displayed on the screen. You will see F802 displayed. (This is the way DOS stores address 2F8 hex).

Now turn your PCjr off, install the ComSwap Board, and repeat the procedure. You should see F8 03 displayed (3F8 hex).

To verify DOS has correctly associated 2F8 hex with COM2 we'll now read the hardware address assigned to COM2. Enter the command:

D0000:0402 L 2 < then press enter.>

If the ComSwap Board has done what its supposed to do you'll see F8 02 displayed.

OTHER PCjr PRODUCTS

PC Enterprises started developing PCjr products in 1984. Today, as always, we remain dedicated exclusively to the PCjr - and we intend to continue developing new products and services for the PCjr as long as the need exists.

PC Enterprises believes in many ways a computer is like an appliance in a kitchen. As long as it does what its supposed to do there's little reason to replace it.

Likewise, as long as your PCjr will run the software that you want to run you'll probably continue using your PCjr for a long long time. As a result, we pledge to continue developing products which maintain compatibility with other computers while making the PCjr much more powerful than most could have ever dreamed.

Our latest catalog of PCjr products now includes over 200 products. PCjr owners can obtain a FREE catalog of PCjr products by calling our toll free catalog and order hotline: 800 922 PCJR

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RETURN POLICIES

Damaged Equipment

We carefully pack and inspect all products before leaving our facility. Insurance is paid to the carrier who accepts FULL responsibility for safe delivery. If your package arrives in a damaged condition, obvious or concealed, you must immediately report the damage to the carrier. Failure to do this will result in the carrier and or PC Enterprises refusing to honor the claim. The carrier will provide any additional information necessary for you to be reimbursed for damages. The equipment must not be returned to us without prior approval by PC Enterprises and release from the carrier.

Defective Equipment

This policy pertains to equipment which does not work correctly and does not appear to have been damaged during transit.

If you experience a problem with any PC Enterprises product, you should call or write to PC Enterprises. If it is determined that the merchandise should be returned to us, you will be given a Return Authorization Number [RA Number].

Anything Returned Without an RA Number Will be Refused and Returned to you Without Exception!

LIMITED WARRANTY

PC Enterprises warrants the original purchaser of this product that it will be in good working order for the one year period from the date of purchase from PC Enterprises or authorized dealer. Should this product fail to be in good working order at any time during the warranty period, PC Enterprises will, at its option, repair or replace the product at no additional cost except that as stated below. Repair parts and replacement products will be furnished either reconditioned or new. All replaced parts and products become the property of PC Enterprises. This warranty does not include service to repair damage to the product as a result of misuse, disaster, accident, or modification of the product.

Warranty service may be obtained by shipping the product US Mail to PC Enterprises and providing proof of purchase date. You agree to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges and to use the original shipping container or equivalent. Contact PC Enterprises prior to returning any products for repair to receive a Return Authorization (RA) number. Any products returned without an RA number will be indiscriminately refused.

All express and implied warranties for this product including the warranties of merchantability and fitness for a particular purpose, are limited in duration to the one year period from the date of purchase, and no warranties, whether express or implied, will apply after this period. Some states do not allow limitations on how long an implied warranty lasts, so the above may not apply to you.

If this product is not in good working order as warranted above, your sole remedy shall be repair or replacement as provided above. In no event will PC Enterprises be liable to you for any damages, whether incidental or consequential, arising out of the use of, or inability to use such product. Some states do not allow the exclusion or limitation of incidental or consequential damages for consumer products, whereas the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. Modification or other disassembly of the PC Enterprises' product without written permission from PC Enterprises will void this warranty.