TECMAR

*jr*Cadet™

Installation Manual
User's Guide
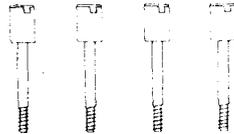
blank in original document

**Your IBM PCjr should be set up and tested
(working) and should have a** *jr*Captain or
*jr*Wave installed on it before installing *jr***Cadet.**

This carton contains the following:

- *jr*Cadet

- Four Mounting Screws

- *jr*Cadet Installation Manual

If any items are missing or damaged, notify
your place of purchase.

Lay the four mounting screws aside. You will
use them later to attach the *jr*Cadet to the
*jr*Wave or *jr*Captain.

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

Warning: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Only peripherals designed to operate on the PCjr Bus and certified to comply with the Class B limits may be attached to this peripheral. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

FCC Required Instructions to IBM *PCjr* User

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the operating instructions, reference manuals, and the service manual, may cause interference to radio or television reception. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a residential installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.

- Relocate the equipment with respect to the receiver.

- Move the equipment away from the receiver.

- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by a the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

2

READ THIS FIRST !

*jr*Cadet is a memory board that must be installed on *jr*Captain or *jr*Wave. It cannot be installed directly on the IBM PC*jr*.

This manual gives instructions for installing Tecmar's *jr*Cadet on your *jr*Wave or *jr*Captain. It also tells you how to add memory to the *jr*Cadet. In order that you can start at the right place for what you are trying to do, read the statements below. Select the one that most nearly matches the options you have purchased and take the appropriate action.

1. You have purchased a *jr*Cadet and want to install it on your *jr*Wave or *jr*Captain.

   Yes Go to Section 1.

   No Go to question 2.

2. You have a *jr*Cadet installed on your IBM PC*jr* and you have purchased memory to add to your *jr*Cadet board.

   Yes Go to Section 3.

   No Go to question 3.

3. You have purchased a *jr*Cadet and additional memory and wish to install the memory on the board and then install the board on the *jr*Wave or *jr*Captain.

   Yes Go to Section 3.

   No Reconsider what you have purchased. Go to question 1.

blank in original

4

Contents

blank in original

6

Section 1.
Tecmar *jr*Cadet
Memory Expansion Preparation

**blank in original**

Contents

Installation Requirements

The switches on your *jr*Wave or *jr*Captain must be changed so the IBM PC*jr* recognizes the memory on your *jr*Cadet board. Your computer must have:

- One disk drive.

- 128K bytes of RAM (installed on your PC*jr*).

- *jr*Wave or *jr*Captain (fully populated).

Tools Required

- Medium-size, flat-blade screwdriver.

- Ballpoint pen.

Installation Instructions
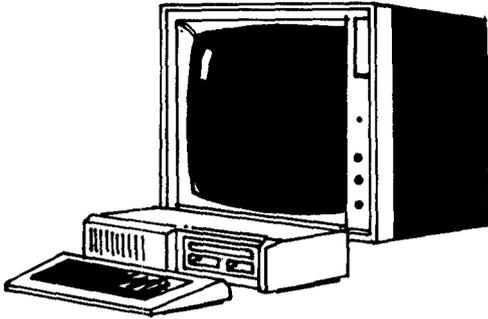
1. Turn your IBM PCjr power off.

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

2. Turn power off on everything attached to your IBM PCjr (printers, television, etc.).

3. Unplug your IBM PCjr and your display or television power cords from the wall outlet.

4. The switches that must be changed are on the *jr*Captain or *jr*Wave board inside its plastic housing.

5. In order to get to the board, the *jr*Wave or *jr*Captain will have to be removed and taken apart. Unplug the power transformer cord from your *jr*Wave or *jr*Captain.

6. Find the option attachment cover.
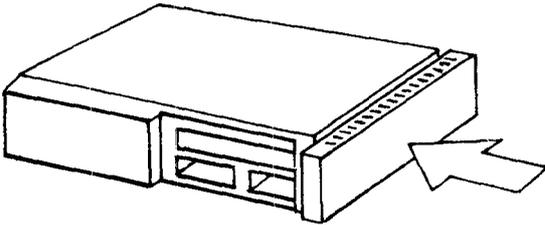
Option Attachment Cover

7. Gently pull on the option attachment cover until it snaps out of place.

jrWave or jrCaptain

Attachment Slots

Mounting Pins

Option Attachment Cover

8. Put the option attachment cover aside.
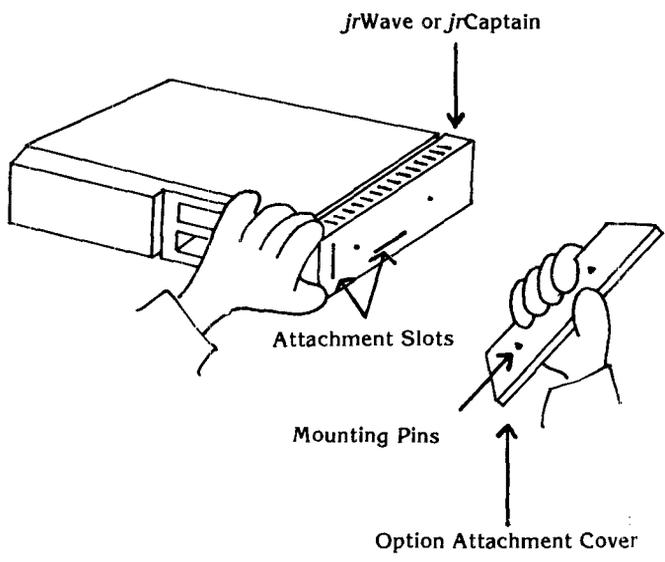
9. Remove the four mounting screws that secure the *jr*Wave or *jr*Captain to the side of the IBM PC*jr*.

*jr*Wave or *jr*Captain

Mounting Screws
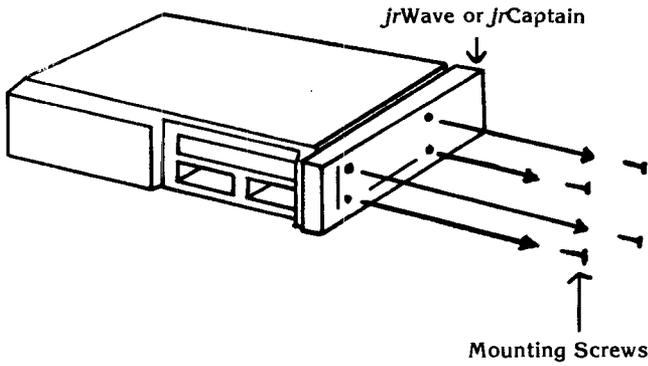
10. Gently pull the *jr*Wave or *jr*Captain from the IBM PC*jr* attachment slot.

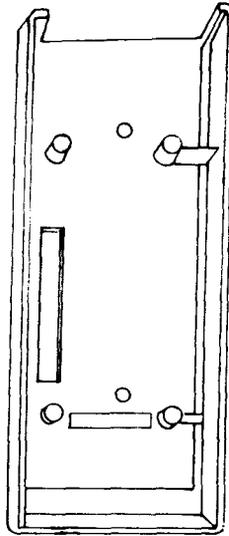11. Hold the *jr*Wave or *jr*Captain as shown below. Find the labeled parts.

*jr*Wave or *jr*Captain

Attachment Connector
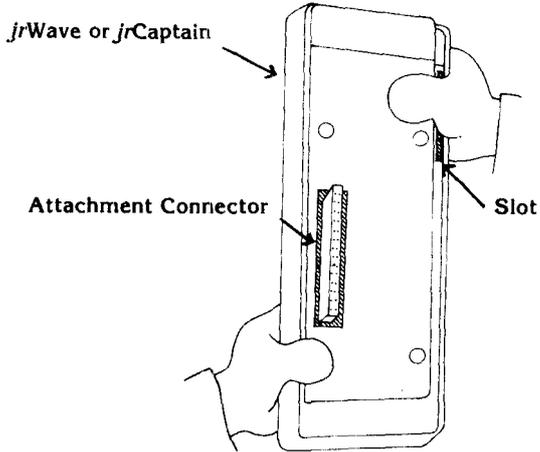
Slot

12. Insert a screw driver at the slot just under the cover *(insert only about ¼" of the screwdriver tip)* and gently pry upward.

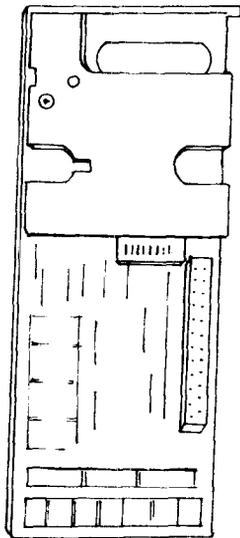Slot

Attachment Connector

15
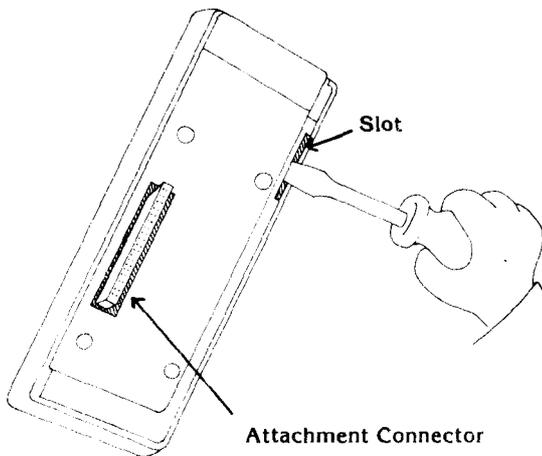
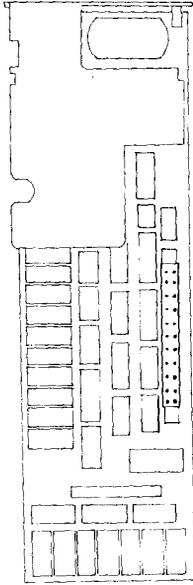13. The *jr*Wave or *jr*Captain comes apart in the three pieces shown below.
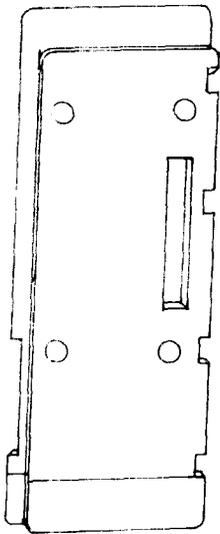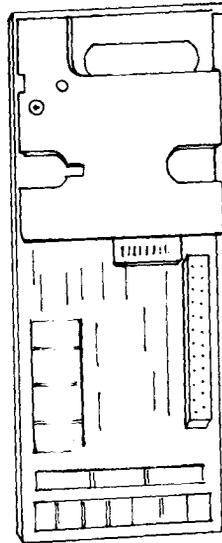
Cover

Box

Board

14. Pick up the *jr*Wave or *jr*Captain board and place it component side up **in the same position** as shown below. Put the *jr*Wave or *jr*Captain box and cover aside.
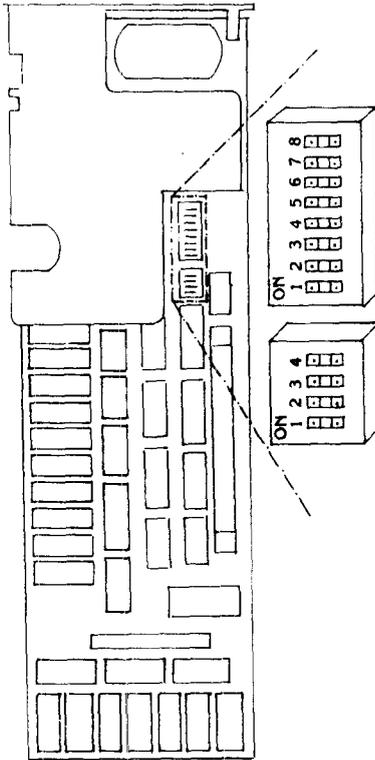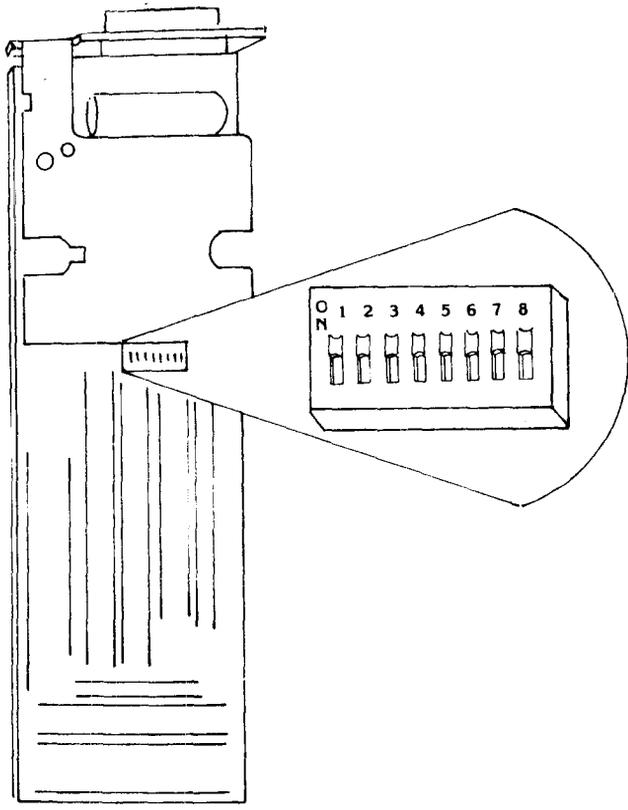

Component Side of
*jr*Wave Board

Component Side of
*jr*Captain Board

15. Study the diagrams. Find the switch modules on your *jr*Wave or *jr*Captain board.

*jr*Wave

*jr*Captain

16. The switches on your *jr*Captain or *jr*Wave board must be changed to allow the IBM PC*jr* to recognize the *jr*Cadet memory. Refer to the steps below to find how to set the switches on your board.

    • Find the chart on the following two pages for the product you are installing.

    • Find the corresponding amount of memory you have on your *jr*Cadet board.

    • Circle the switch module that corresponds to the *jr*Cadet memory you have.

    • Use a ball point pen to set the switches of the switch module on your board to match the settings on the chart.

    • Double check your settings.

Switch Settings for the
*jr*Captain

Amount of Memory on *jr*Cadet in K bytes	Switch Settings*
64	
128	
192	
256	
320	
384	

*Do not change switches 1 and 2.

Switch Settings for the *jr*Wave

Amount of Memory on *jr*Cadet in K bytes	Switch Settings SW2*
64	
128	
192	
256	
320	
384	

*Do not change switches 1 and 8 on SW2 or the switches on the other switch module.

Note: For more information on setting switches, consult the *jr*Wave or *jr*Captain manual.

17. It is easy to put the *jr*Wave or *jr*Captain back together. Pick up the cover and the *jr*Wave or *jr*Captain board. Place the board on the cover, component side up. Be sure that the attachment connector is in the right place. Align the four mounting screw holes.

Mounting
Screw Holes

Attachment
Connector

Attachment
Slot

*jr*Wave or *jr*Captain Cover
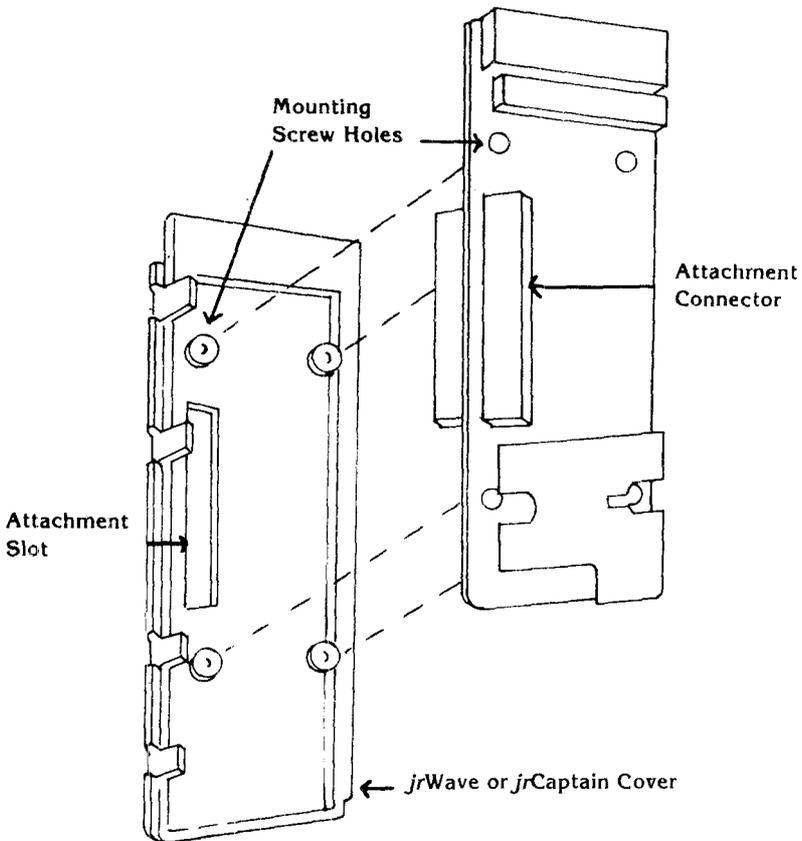
18. Plug the *jr*Wave or *jr*Captain box onto the board. Make sure the attachment slot is aligned correctly with the attachment connector.

19. Locate the attachment slot on the right side of the IBM PC*jr*. Plug the attachment connector of the *jr*Wave or *jr*Captain into the attachment slot at the side of the IBM PC*jr*.

Attachment Slot

*jr*Captain or *jr*Wave
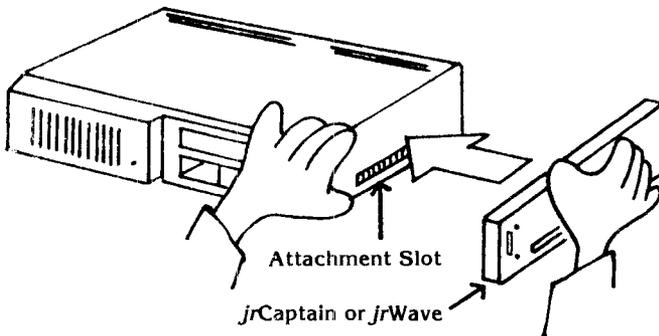
20. Is the *jr*Wave or *jr*Captain firmly in place and evenly lined up with the side of the IBM PC*jr*?

    Yes - go to step 21.

    No - go to step 19.

21. Secure the *jr*Wave or *jr*Captain to the side of the IBM PC*jr* using the four mounting screws you put aside.

*jr*Wave

Mounting Holes

Mounting Screws
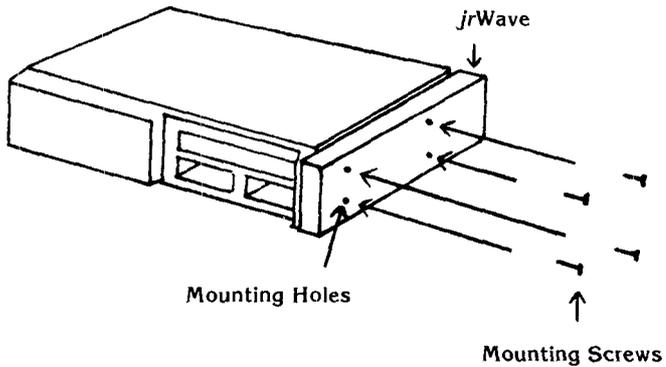
22. Plug the power transformer back into your *jr*Wave or *jr*Captain.

23. Go to Section 2.

blank in original

Section 2.
*jr*Cadet Installation
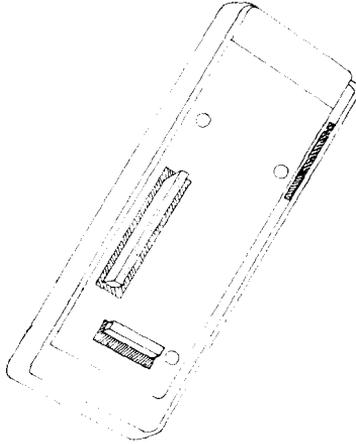
blank in original

Contents

Tools Required

- Medium-size, flat-blade screwdriver.

Installation Instructions

1. Pick up the *jr*Cadet. Hold it as shown in the picture.

Attachment Connector
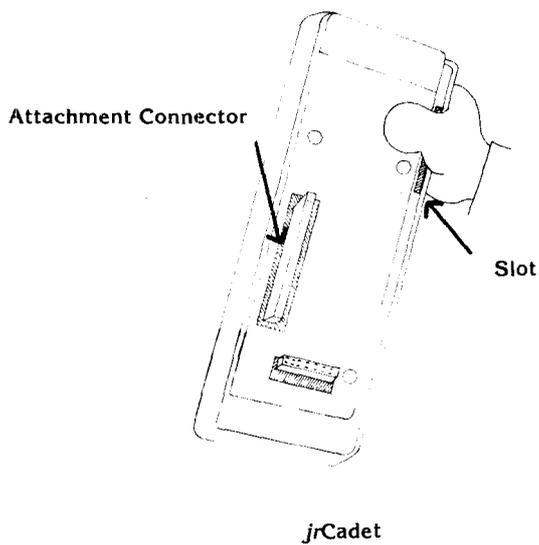
Slot

*jr*Cadet

2. Locate the attachment slots on the right
    side of the *jr*Wave or *jr*Captain. Plug the at-
    tachment connectors of the *jr*Cadet into
    the attachment slots at the side of the
    *jr*Wave or *jr*Captain.

Attachment Slot

Attachment Slot 2
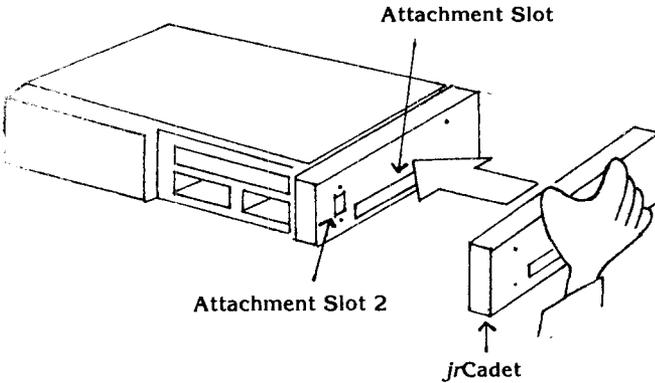
*jr*Cadet

3. Is the *jr*Cadet firmly in place and evenly
    lined up with the side of the *jr*Wave or
    *jr*Captain?

    Yes - go to step 4.

    No - go to step 2.

4. Secure the *jr*Cadet to the side of the *jr*Wave or *jr*Captain using the four mounting screws you put aside. Reinstall the option attachment cover by pressing it firmly into the mounting holes of the *jr*Cadet.

jrWave or jrCaptain

jrCadet

Mounting Holes

Mounting Screws
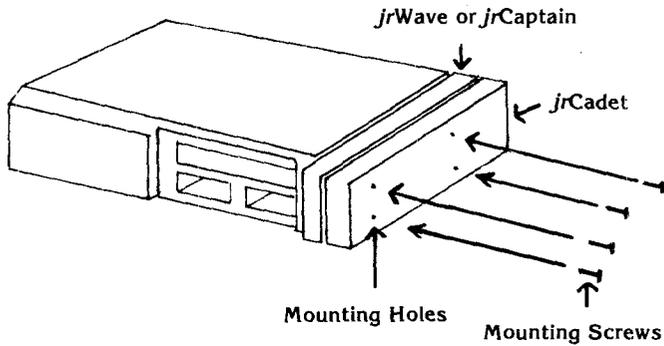
5. You must run the CONPCJR program when you turn on your system. Consult your *jr*Captain or *jr*Wave manual for instructions on how to use CONPCJR.

blank in original

Section 3.
Tecmar *jr*Cadet
Memory Expansion
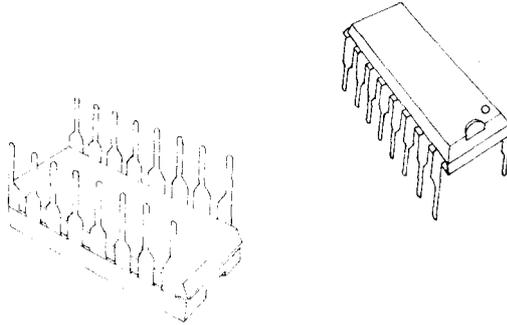
This section contains instructions for adding memory to the *jr*Cadet.

blank in original

Contents

blank in original

blank in original

3. Unplug your IBM PC*jr* and your display or television power cords from the wall outlet.

4. The RAM chips must be installed on the *jr*Cadet board inside the *jr*Cadet. Is the *jr*Cadet already attached to the *jr*Captain or *jr*Wave?

   Yes   Go to step 5.

   No   Go to step 11.

5. In order to get to the board, the *jr*Cadet will have to be removed and taken apart.

6. Find the option attachment cover.
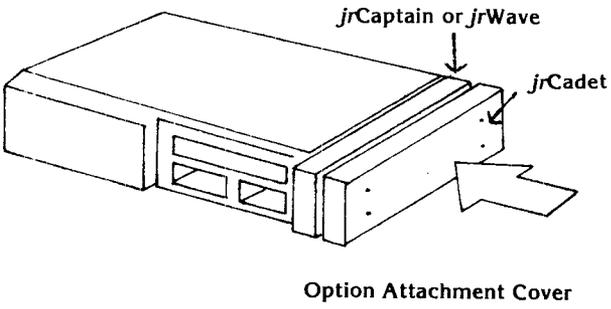
*jr*Captain or *jr*Wave

*jr*Cadet

Option Attachment Cover

7. Gently pull on the option attachment cover until it snaps out of place.

*jr*Wave

Mounting Pins

Option Attachment Cover

8. Put the option attachment cover aside.
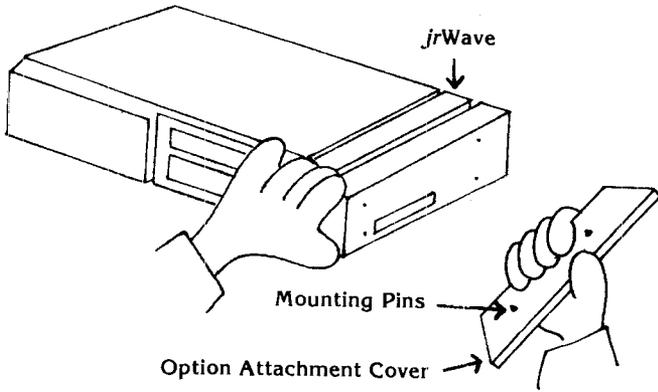
9. Remove the four mounting screws that secure the *jr*Cadet to the side of the *jr*Wave or *jr*Captain.

*jr*Captain
or
*jr*Wave

*jr*Cadet

Mounting Screws
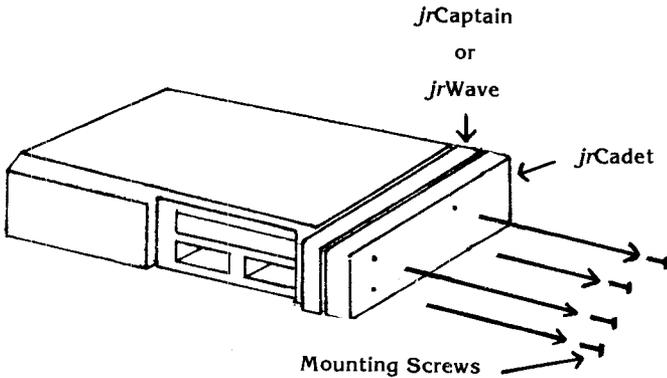
10. Gently pull the *jr*Cadet from the *jr*Wave or *jr*Captain attachment slots.

11. Hold the *jr*Cadet as shown below. Find the labeled parts on your *jr*Cadet.

Attachment Connector
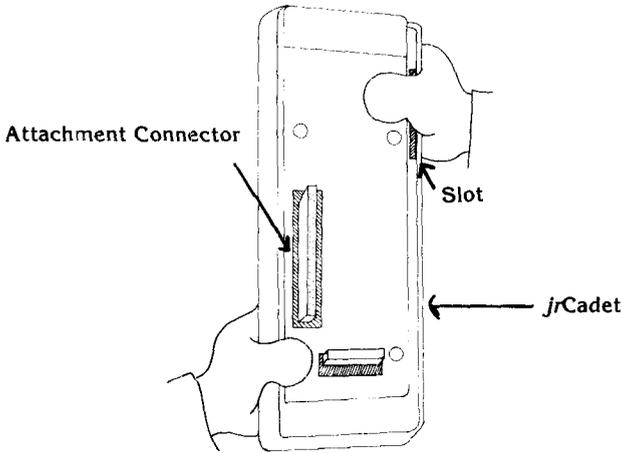
Slot

*jr*Cadet

12. Insert a screw driver at the slot just under the *jr*Cadet cover *(insert only about ¼ " of the screwdriver tip)* and gently pry upward.

Slot

Attachment Connector

42
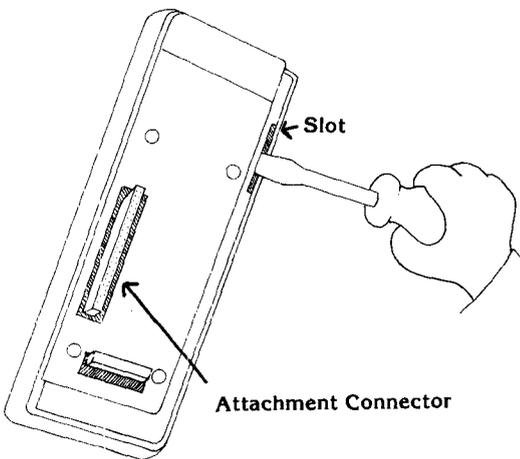
13. The *jr*Cadet comes apart in the three pieces shown below.
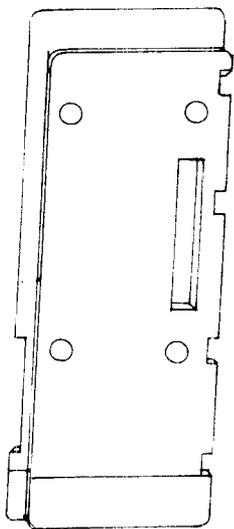
*jr*Cadet Box
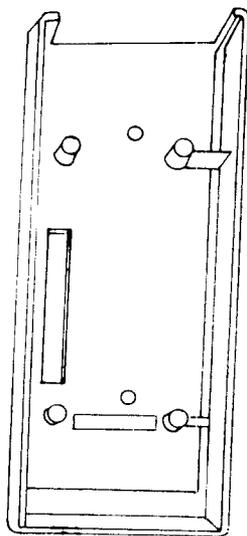
*jr*Cadet Cover
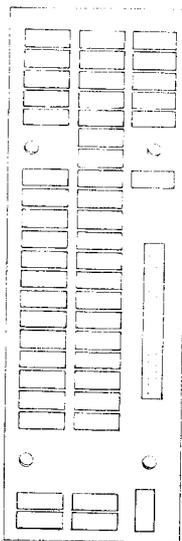
*jr*Cadet Board

14. Pick up the *jr*Cadet board and place it component side up **in the same position** as shown below. Put the *jr*Cadet box and cover aside.
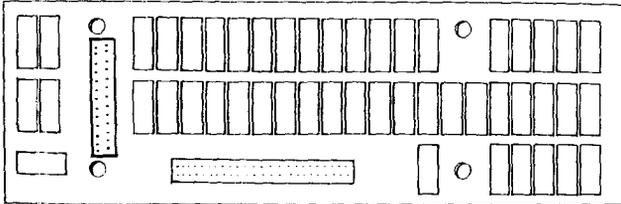
15. Look at the diagram on the following page. There are five "banks" or sets of sockets where RAM chips may be install-ed. The numbers on the sockets in the diagram represent the bank number the socket belongs to.

    Note: The *jr*Cadet is shipped with either 64K bytes of RAM or 128K bytes of RAM installed. If you have bought the 128K ver-sion, the first two banks of your *jr*Cadet will be filled with RAM chips that are soldered to the board. These chips are per-manent and should not be removed for any reason.
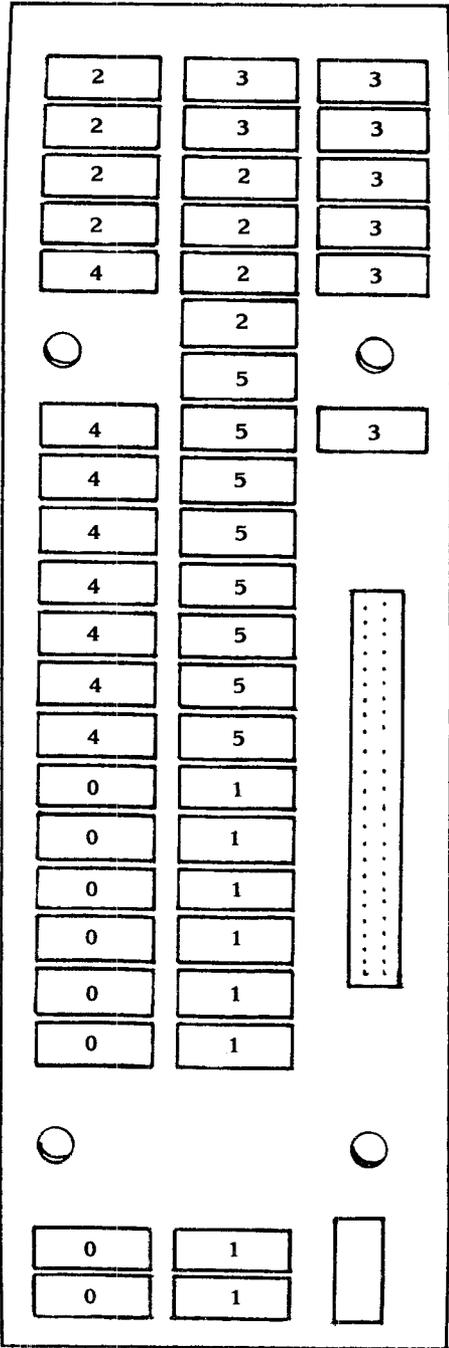
Note: Each socket in your *jr*Cadet has 16 holes where pins of the RAM chips will be inserted.

16. Each of the RAM chips must be installed in a socket of a memory bank. When a bank's eight sockets are filled with RAM chips, 64K bytes of memory have been installed. You will be told what bank(s) to fill in Step 20.

17. The RAM chip has 16 pins. You **MUST** know the location of Pin 1 to correctly in- stall the RAM chip. Find the markings for Pin 1 shown below on one of your RAM chips. **SERIOUS DAMAGE WILL RESULT IF YOU INSTALL THE CHIPS BACKWARDS.**

Pin 1
Marks

Pins
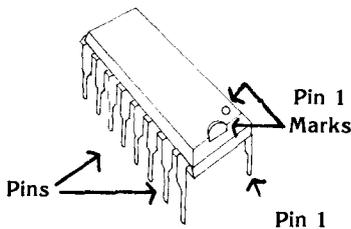
Pin 1

Your particular chip
may have only one of the marks.

18. There is a printed outline on the *jr*Cadet board at each socket position with an indentation to indicate the position of Pin 1.

Printing on Board
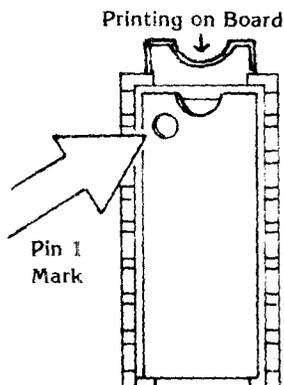
Pin 1
Mark

19. If you have your board component side up with the larger attachment connector at the bottom, when the RAM chips are installed, Pin 1 is at the top of the RAM chips that are installed vertically.

20. To install the RAM chips:

- Find the amount of memory that you currently have on your board (column 1):

- Find the amount of memory you are adding to the board in column 2 of the table on the following pages.

- Insert the RAM chips as directed below in the sockets of the *jr*Cadet *banks* indicated on the chart.

- Gently press the pins of the RAM chips into the pin plugs of each socket of the bank you are filling.

- Make certain that each of the pins of the RAM chip fits into a pin plug of the socket.

- If you bend a pin or miss a socket plug, pull the RAM chip out, straighten pins as necessary with the needle nose pliers, and reinsert.

*jr*Cadet Board
Memory Configuration

Current Memory on *jr*Cadet	Memory to be added	Total memory on *jr*Cadet	Action to take
64K	64K	128K	Fill bank 1 with 64K RAM chips
64K	128K	192K	Fill banks 1 & 2 with 64K RAM chips
64K	192K	256K	Fill banks 1, 2 & 3 with 64K RAM chips
64K	256K	320K	Fill banks 1, 2, 3 & 4 with 64K RAM chips
64K	320K	384K	Fill banks 1, 2, 3, 4 & 5 with 64K RAM chips

Note: With 64K current memory, Bank 0 should be filled already.

*jr*Cadet Board
Memory Configuration

Current Memory on *jr*Cadet	Memory to be added	Total memory on *jr*Cadet	Action to take
128K	64K	192K	Fill bank 2
128K	128K	256K	Fill banks 2 & 3 with 64K RAM chips
128K	192K	320K	Fill banks 2, 3 & 4 with 64K RAM chips
128K	256K	384K	Fill banks 2, 3, 4 & 5 with 64K RAM chips

Note: With 128K current memory, Banks 0 and 1 should already have been filled.

*jr*Cadet Board
Memory Configuration

Current Memory on *jr*Cadet	Memory to be added	Total memory on *jr*Cadet	Action to take
192K	64K	256K	Fill bank 3 with 64K RAM chips
192K	128K	320K	Fill banks 3 & 4 with 64K RAM chips
192K	192K	384K	Fill banks 3, 4 & 5 with 64K RAM chips

Note: With 192K current memory, Banks 0, 1 & 2 should already have been filled.

256K	64K	320K	Fill bank 4 with 64K RAM chips
256K	128K	384K	Fill banks 4 & 5 with 64K RAM chips

Note: With 256K current memory, Banks 0, 1, 2 & 3 should already have been filled.

320K	64K	384K	Fill bank 5 with 64K RAM chips

Note: With 320K current memory, banks 0, 1, 2, 3, & 4 should already have been filled.

51

21. It is easy to put the *jr*Cadet back together.
Pick up the *jr*Cadet cover and the *jr*Cadet
board. Place the board on the cover com-
ponent side up. Be sure that the attach-
ment connectors are in the right place.
Align the four mounting screw holes.
Press the two pieces together at the holes
until they snap into place.

Mounting
Screw Holes

Attachment
Connector

Attachment
Slot

← *jr*Cadet cover
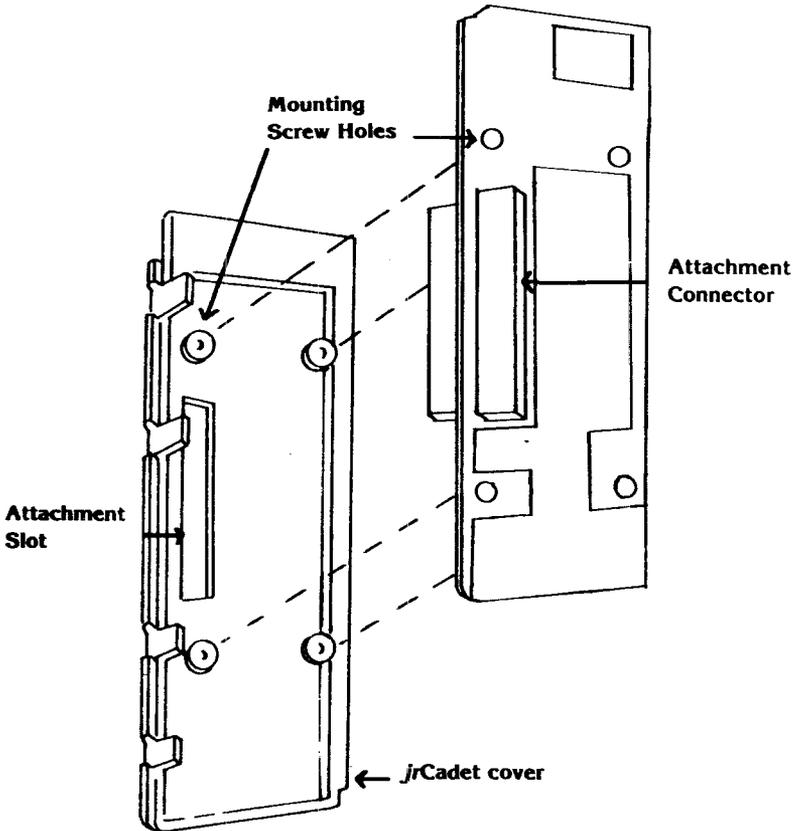
22. Snap the *jr*Cadet box onto the board. Make sure the attachment slot is aligned correctly with the attachment connector.

23. In order for the IBM PC*jr* to recognize the *jr*Cadet's additional memory, you must change the switches on the *jr*Captain or *jr*Wave.

24. Go to Section 1.

blank in original

Section 4.
*jr*Cadet Technical Reference

This technical reference section is here for your information as it is needed. You do not have to read this section to use the *jr*Cadet.

blank in original

Contents

blank in original

Memory Configuration

The *jr*Cadet board does not have any switches or jumpers to configure memory. Instead, the necessary switches are found on your *jr*Captain or *jr*Wave board. For information, refer to your *jr*Captain or *jr*Wave installation manual.

blank in original

Specifications

Memory Capacity: 64K byte to 384K bytes.

RAM Chips: Intel 4164-20 or equivalent.

blank in original

Limited Warranty

h respect to the product(s) delivered with this Limited Warranty, Tecmar, Inc. ("Tecmar") warrants to the **nal purchaser** that:

    (i) boards and cables manufactured by Tecmar and any QIC-60 product will be free from defects in materials and workmanship for one (1) year from the date of delivery to such **original purchaser**;

    (ii) disc controllers and drives, terminals, printers, and any other hardware items other than boards or cables manufactured by Tecmar or any QIC-60 product, whether bearing a Tecmar label or not, will be free from defects in materials and workmanship for a period of ninety (90) days from the date of delivery to such **original purchaser**;

    (iii) any media for software will be free from defects in materials for a period of ninety (90) days from the date of delivery to such **original purchaser**; and

    (iv) any software, or any items such as batteries, tape cartridges, printer ribbons, printer wheels or paper products, are provided "as is" without warranty of any kind.

THE FOREGOING WARRANTIES ARE THE ONLY WARRANTIES PROVIDED BY TECMAR IN CONNECTION WITH THE PRODUCTS COVERED BY THIS LIMITED WARRANTY AND ARE IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED. TECMAR HEREBY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

If any product delivered with this Limited Warranty is non-conforming or defective during the applicable warranty period, Tecmar will, at its option, either repair or replace such non-conforming or defective product, or return purchase price to purchaser. Any software delivered with this Limited Warranty has been thoroughly tested is thought to be functional when released. In the event that a serious functional problem is discovered in any software delivered with this Limited Warranty, Tecmar may endeavor to correct such problem. Tecmar shall have no obligation hereunder if any product delivered with this Limited Warranty has been misused, carelessly handled, defaced (including unauthorized repairs made or attempted by others), modified or altered. The product must be returned with proof of purchase in its original packaging (or other adequate packaging) to the point of purchase or, by prior arrangement with Tecmar, to Tecmar at 6225 Cochran Road, Solon, Ohio 44139. Claims must be made in accordance with the provisions of this paragraph within the applicable warranty period or they will be barred.

If Tecmar determines that any product which has been returned to Tecmar in accordance with the provisions of the preceding paragraph is not under warranty, it will be repaired using Tecmar's standard rates for parts and labor. Tecmar will use its best efforts to repair the product after receipt thereof. Tecmar shall not be responsible, however, for delays caused by shipping or non-availability of replacement components or other similar or dissimilar causes, events or conditions beyond its reasonable control.

THE FOREGOING STATES THE PURCHASER'S EXCLUSIVE REMEDY FOR ANY BREACH OF THIS LIMITED WARRANTY AND FOR ANY CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR NEGLIGENCE, FOR LOSS OR INJURY CAUSED BY THE SALE OF ANY PRODUCT. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, TECMAR SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS OF BUSINESS OR PROFITS, DOWNTIME OR DELAY, LABOR, REPAIR, OR MATERIAL COSTS, INJURY TO PERSON OR PROPERTY OR ANY SIMILAR OR DISSIMILAR CONSEQUENTIAL LOSS OR DAMAGE INCURRED BY PURCHASER, EVEN IF TECMAR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

----

ep your original sales receipt for the product with this warranty statement.

PRODUCT   _____

SERIAL   DATE OF
NUMBER_____ PURCHASE _____

WHERE
PURCHASED   _____

blank in original