

SR28-0495-0
Course 40437



Customer Service Education

**Condensed
Operations and
Maintenance
Procedures**

**IBM 4860 PCjr Power Expansion
Memory Expansion
Speech Attachment**

Preface

This publication is primarily intended for use by IBM personnel taking course 40437.

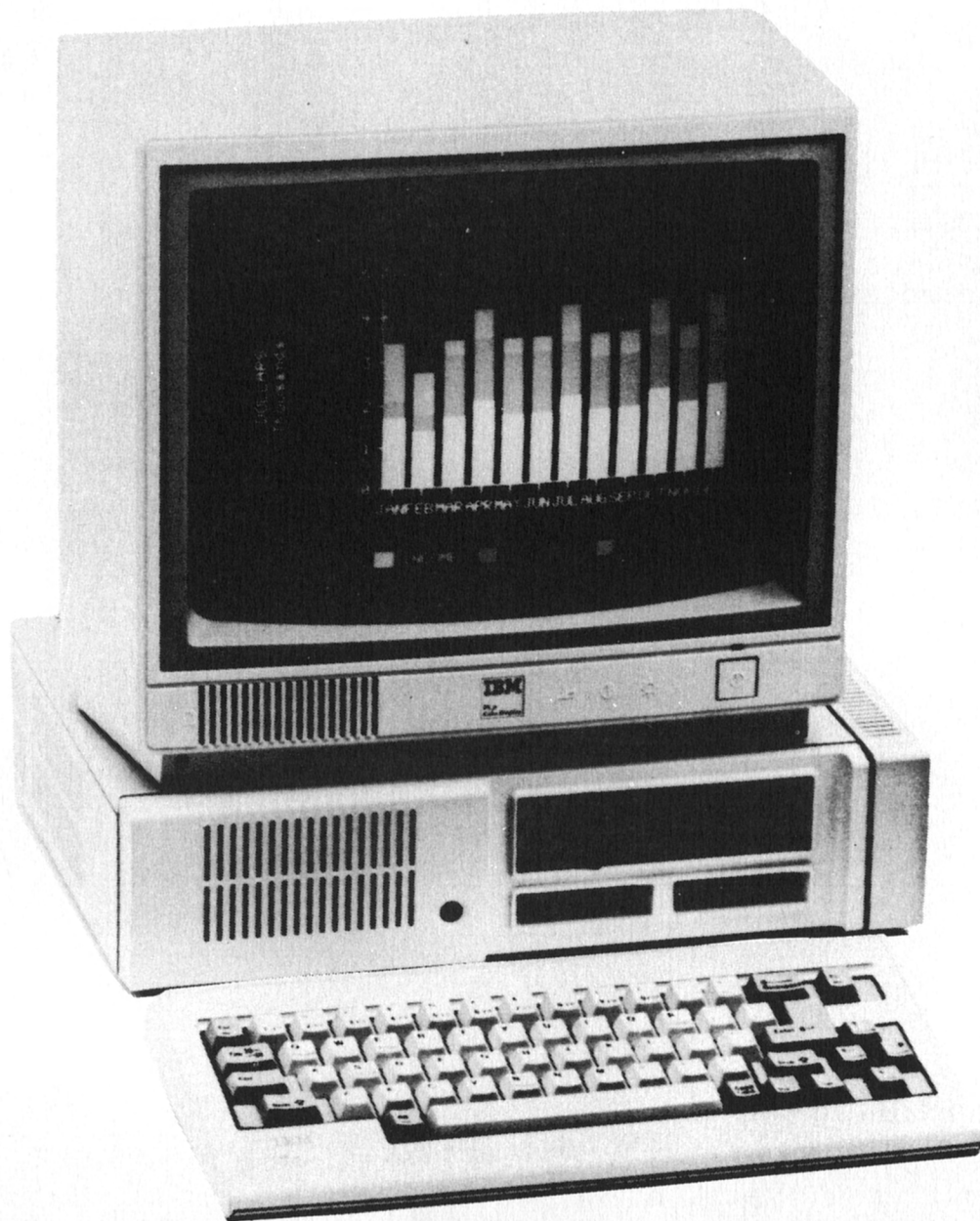
Preliminary Edition (September 1984)

This publication has been printed in a preliminary format so that it would be available to the intended users in time for training on this course. This preliminary manual may contain typographical errors that would normally be corrected before publication. This edition is not eligible for suggestion awards, however, your comments will be appreciated.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM program product in this publication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

Publications are not stocked at the address given below. Requests for IBM publications should be made to your IBM representative or to the IBM branch office serving your locality.

A form for readers' comments is provided at the back of this publication. If the form has been removed, comments may be addressed to IBM Corporation, 90L/234-2, 2000 51st Street, Boca Raton, Florida 33432. IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.



IBM PCjr

This course is intended to be taken by CSR's who have completed course 71021 PCjr Product Training.

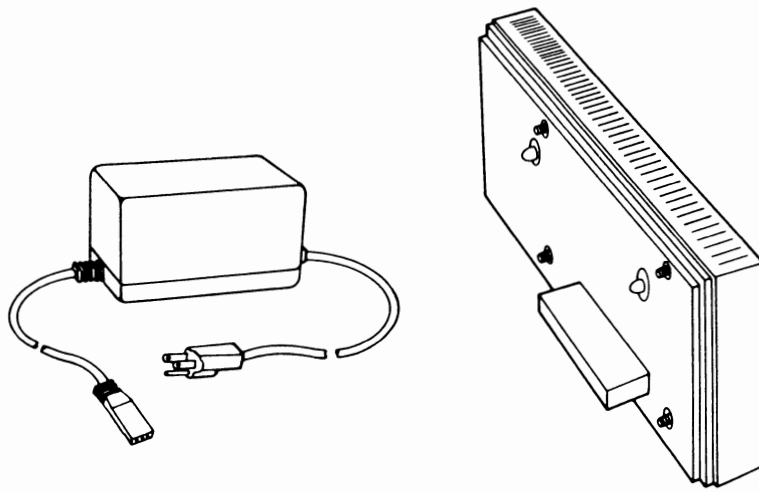
This course will cover the following PCjr attachments:

- o PCjr Power Expansion Attachment
- o PCjr 128 Kb Memory Expansion
- o PCjr Speech Attachment

PCjr Power Attachment

INTRODUCTION

The PCjr Power Expansion Attachment adds additional power capacity to all models of the PCjr to allow the addition of up to three side mounted attachments.

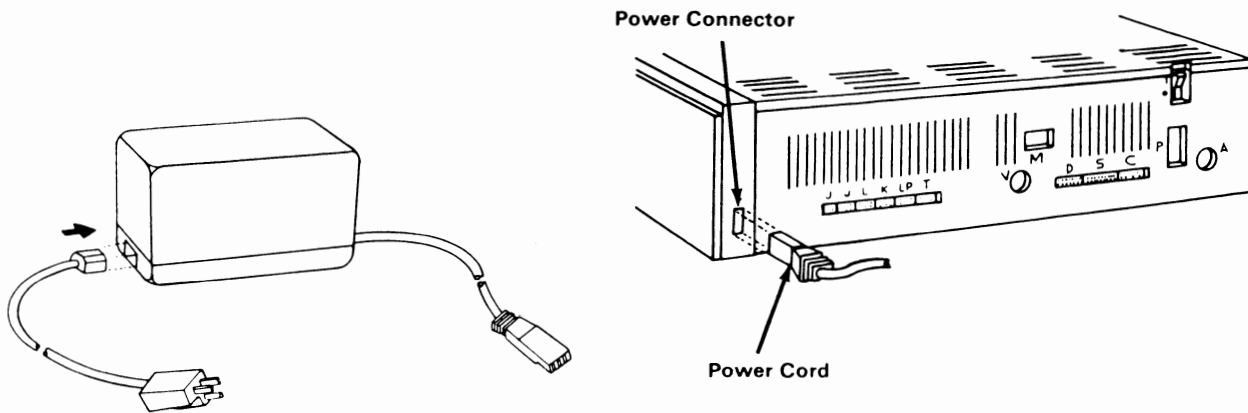


DESCRIPTION

The PCjr Power Expansion Attachment is a side-attach option card that provides 27 watts of additional power. The increased power capability is required to operate up to three additional side-attached options. A maximum of three side-attached options plus the PCjr Power Expansion can be attached to the PCjr. The PCjr Power Expansion Attachment is powered by its own desk top transformer and power cord, this is in addition to the transformer and power cord use by the PCjr System Unit. Turning the power to the system unit on also turns on the Power Expansion Attachment.

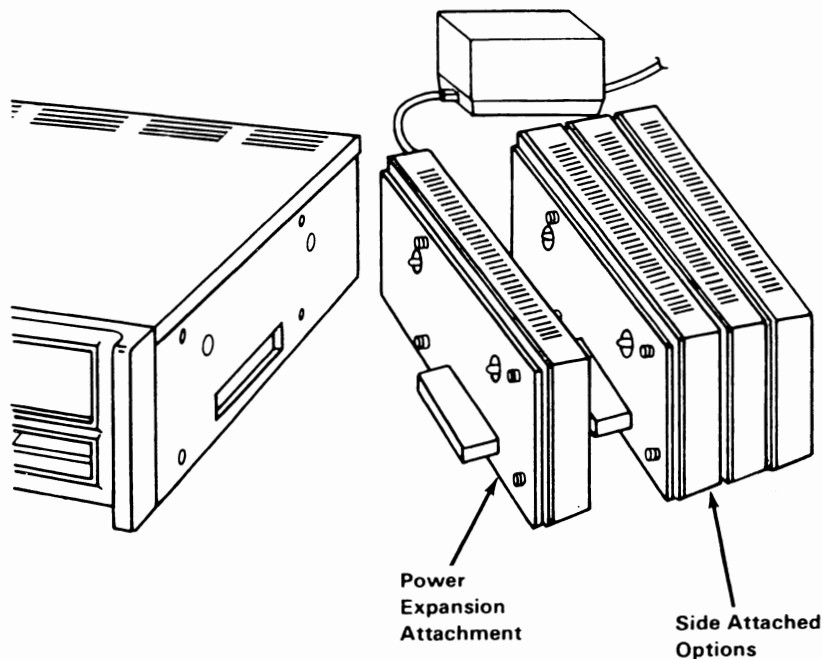
The Power Expansion Attachment MUST be the first option installed next to the system unit.

Without the Power Expansion Attachment ONLY ONE side attached option can be installed on the PCjr.



INSTALLATION REQUIREMENTS

Installation of the Power Expansion Attachment is the responsibility of the customer. The Guide to Operations insert shipped with the attachment details the steps to install it.



SERVICE

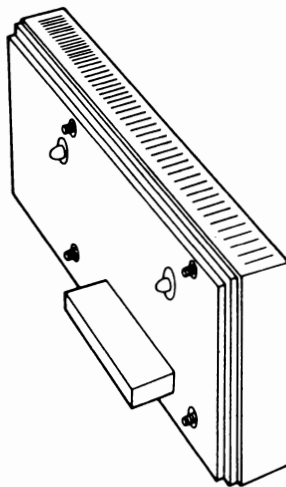
Service for the PCjr Power Expansion Attachment is supported by the HMS. You will be directed to the Power PIC from the side attached option PIC when that Option receives power from the Power Expansion Attachment.

The Power Expansion Attachment is a FRU. There is nothing inside the attachment that can be repaired. The line cord is also a fru. The failing unit should be replaced.

PCjr Memory Expansion Attachment

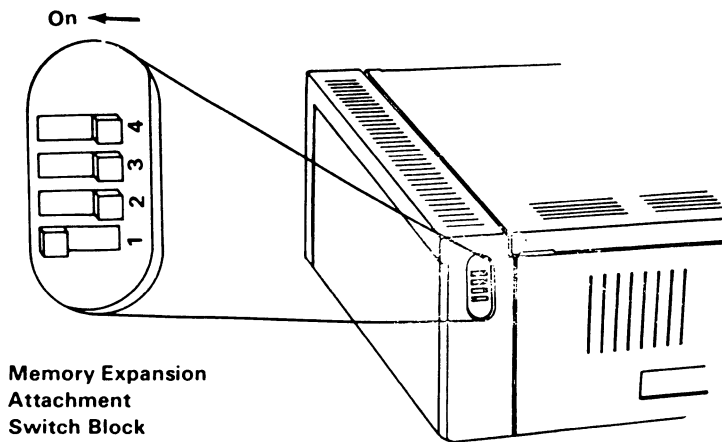
INTRODUCTION

The Memory Expansion Attachment provides additional memory for the PCjr. Multiple attachments can be added to the side buss to provide up to 512 Kb total memory.



DESCRIPTION

The IBM PCjr Memory Expansion Attachment is a side-attached option. Each Memory Expansion Attachment adds 128 Kb to the total system memory. One, two, or three Memory Attachments can be installed. Switches on the rear of the each Memory Attachment MUST be set to reflect the installed memory configuration.



Memory Expansion Attachment Switch Block

1st 128KB Memory Expansion Attachment	2nd 128KB Memory Expansion Attachment	3rd 128KB Memory Expansion Attachment
1 = On	1 = Off	1 = Off
2 = Off	2 = On	2 = Off
3 = Off	3 = Off	3 = On
4 = Off	4 = Off	4 = Off

128KB Memory Expansion Attachment Switch Settings

INSTALLATION REQUIREMENTS

Installation of the Memory Expansion Attachment is the responsibility of the customer. However, the following requirements must be met before the additional memory provided by the Memory Expansion can be used.

- o A 64Kb Memory and Display Expansion must be installed before you can install this option.
- o A Diskette Drive must be installed before you can install this option.
- o A memory allocation program shipped with the Memory Attachment must be installed on the customers DOS diskette and be IPLed each time the PCjr is powered on.

SERVICE

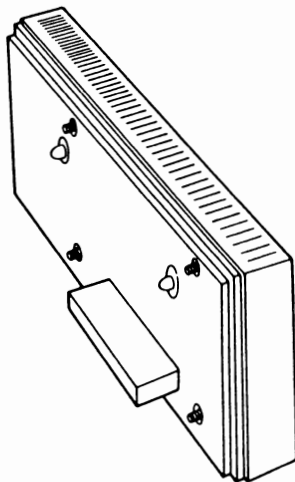
Service of the Memory Expansion Attachment is supported by the HMS and Internal Diagnostic Programs. The service strategy for the PCjr requires that you begin each call with the START PIC. You will be directed by the PICs to isolate the failing Memory Expansion Attachment.

The Memory Expansion Attachment is a FRU. There is nothing inside the attachment that can be repaired. The failing unit should be replaced.

PCjr Speech Attachment

INTRODUCTION

The IBM PCjr Speech Attachment is a side-attached option card that supports speech storage and playback under program control.

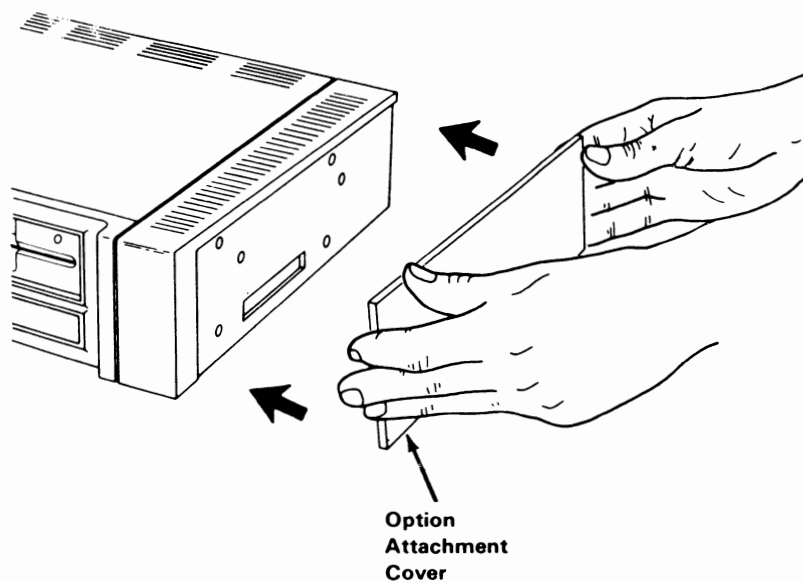


DESCRIPTION

The Speech Attachment is a PCjr side attached option. It can be installed directly on the system if it is the only attachment installed or it can be installed with a Power Expansion card if other side attachments are installed.

Speech data can be recorded on the PCjr diskette through a microphone that is user supplied and connects to the 3.5 mm jack on the rear of the attachment. The Speech attachment will play through the audio output jack or the television speaker.

Also included with this attachment is "A Guide To Writing BASIC Speech Programs for the IBM PCjr". This book gives some simple ways to include speech and sound effects in a BASIC Program.



INSTALLATION REQUIREMENTS

Installation of the Speech Attachment is the responsibility of the customer. The Guide to Operations insert shipped with this attachment details the steps to install it.

SERVICE

Service of the Speech Attachment is supported by the HMS and Internal Diagnostic Programs. The service strategy for the PCjr requires that you begin each call with the START PIC. You will be directed by the PICs to isolate the failing Speech Attachment.

The Speech Attachment is a FRU. There is nothing inside the attachment that can be repaired. The failing unit should be replaced.



PCjr KEYBOARD

There is also a new PCjr Keyboard. This new Keyboard is electronically identical to the previous PCjr Keyboard but has been improved mechanically to be easier to use. It has bigger keys that are easier to press and the key designations are on the key tops rather than printed on the keyboard itself.

This new Keyboard will be shipped with all new PCjr's and be available as a replacement part for the old Keyboard.

The new PCjr Keyboard is a FRU there is nothing on it that can be repaired, batteries in the keyboard can be replaced and are the responsibility of the customer. A failing Keyboard should be replaced.

COURSE COMPLETION

Please use service code 51 complete and record course number 40437 to account for your time while taking this course.

The estimated time to complete this course is approximately 0.6 hours

Please complete the following readers comment form. Your feedback will be appreciated.

**READER'S
COMMENT
FORM**

IBM 4860 PCjr Power Expansion,
Memory Expansion, Speech Attachment
Condensed Operations and Maintenance Procedures
Course 40437
SR28-0495-0

You may use this form to communicate your comments about this publication, its organization, or subject matter, with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you. Your comments will be sent to the author's department for whatever review and action, if any, are deemed appropriate.

Note: Copies of IBM publications are not stocked at the location to which this form is addressed. Please direct any requests for copies of publications, or for assistance in using your IBM system, to your IBM representative or to the IBM branch office serving your locality.

The following questionnaire is provided to gather your feedback on the training you have just completed. Your answers, along with those from other students will be analyzed to determine where improvements may be needed. Your candid replies are respectfully requested.

1. Rate the overall effectiveness of the training provided by this course.
1. Very Good 2. Good 3. Average 4. Poor 5. Very Poor
2. Based on this course, rate your confidence to service this product.
1. Very High 2. High 3. Average 4. Low 5. Very Low
3. Rate the effectiveness of the COMP course as a method of training versus a 1-4 hour terminal course.
1. Very Good 2. Good 3. Average 4. Poor 5. Very Poor

Please add any written comments on this form. Do not use this form for technical questions about the product or for requests for additional publications; this only delays the response. Instead, direct your inquiries or requests to your IBM representative or the IBM branch office serving your locality.

Please indicate your name and phone number (tie line if available) in the space below, if you wish a reply.

Note: Staples can cause problems with automated mail sorting equipment.
Please use pressure sensitive or other gummed tape to seal this form.

Thank you for your cooperation. No postage stamp is necessary if mailed in the U.S.A. (Elsewhere, an IBM office or representative will be happy to forward your comments or you may mail directly to the address in the Edition Notice on the back of the title page.)

Reader's Comment Form

Fold and Tape

Please Do Not Staple

Fold and Tape



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE:

International Business Machines Corporation
Dept. 90L/Bldg. 234-2
P.O. Box 1328
Boca Raton, FL 33432

Fold and Tape

Please Do Not Staple

Fold and Tape

IBM 4860 PCjr Power Expansion, Memory Expansion, Speech Attachment COMP Printed in U.S.A. SR28-0495-0



IBM 4860 PCjr Power Expansion,
Memory Expansion, Speech Attachment
Condensed Operations and Maintenance Procedures
Course 40437
SR28-0495-0

**READER'S
COMMENT
FORM**

You may use this form to communicate your comments about this publication, its organization, or subject matter, with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you. Your comments will be sent to the author's department for whatever review and action, if any, are deemed appropriate.

Note: Copies of IBM publications are not stocked at the location to which this form is addressed. Please direct any requests for copies of publications, or for assistance in using your IBM system, to your IBM representative or to the IBM branch office serving your locality.

The following questionnaire is provided to gather your feedback on the training you have just completed. Your answers, along with those from other students will be analyzed to determine where improvements may be needed. Your candid replies are respectfully requested.

1. Rate the overall effectiveness of the training provided by this course.
1. Very Good 2. Good 3. Average 4. Poor 5. Very Poor
2. Based on this course, rate your confidence to service this product.
1. Very High 2. High 3. Average 4. Low 5. Very Low
3. Rate the effectiveness of the COMP course as a method of training versus a 1-4 hour terminal course.
1. Very Good 2. Good 3. Average 4. Poor 5. Very Poor

Please add any written comments on this form. Do not use this form for technical questions about the product or for requests for additional publications; this only delays the response. Instead, direct your inquiries or requests to your IBM representative or the IBM branch office serving your locality.

Please indicate your name and phone number (tie line if available) in the space below, if you wish a reply.

Thank you for your cooperation. No postage stamp is necessary if mailed in the U.S.A. (Elsewhere, an IBM office or representative will be happy to forward your comments or you may mail directly to the address in the Edition Notice on the back of the title page.)

Note: Staples can cause problems with automated mail sorting equipment. Please use pressure sensitive or other gummed tape to seal this form.

Reader's Comment Form

IBM 4860 PCjr Power Expansion, Memory Expansion, Speech Attachment COMP Printed in U.S.A. SR28-0495-0

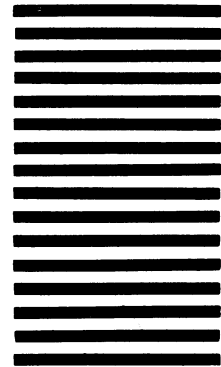
Fold and Tape

Please Do Not Staple

Fold and Tape



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.

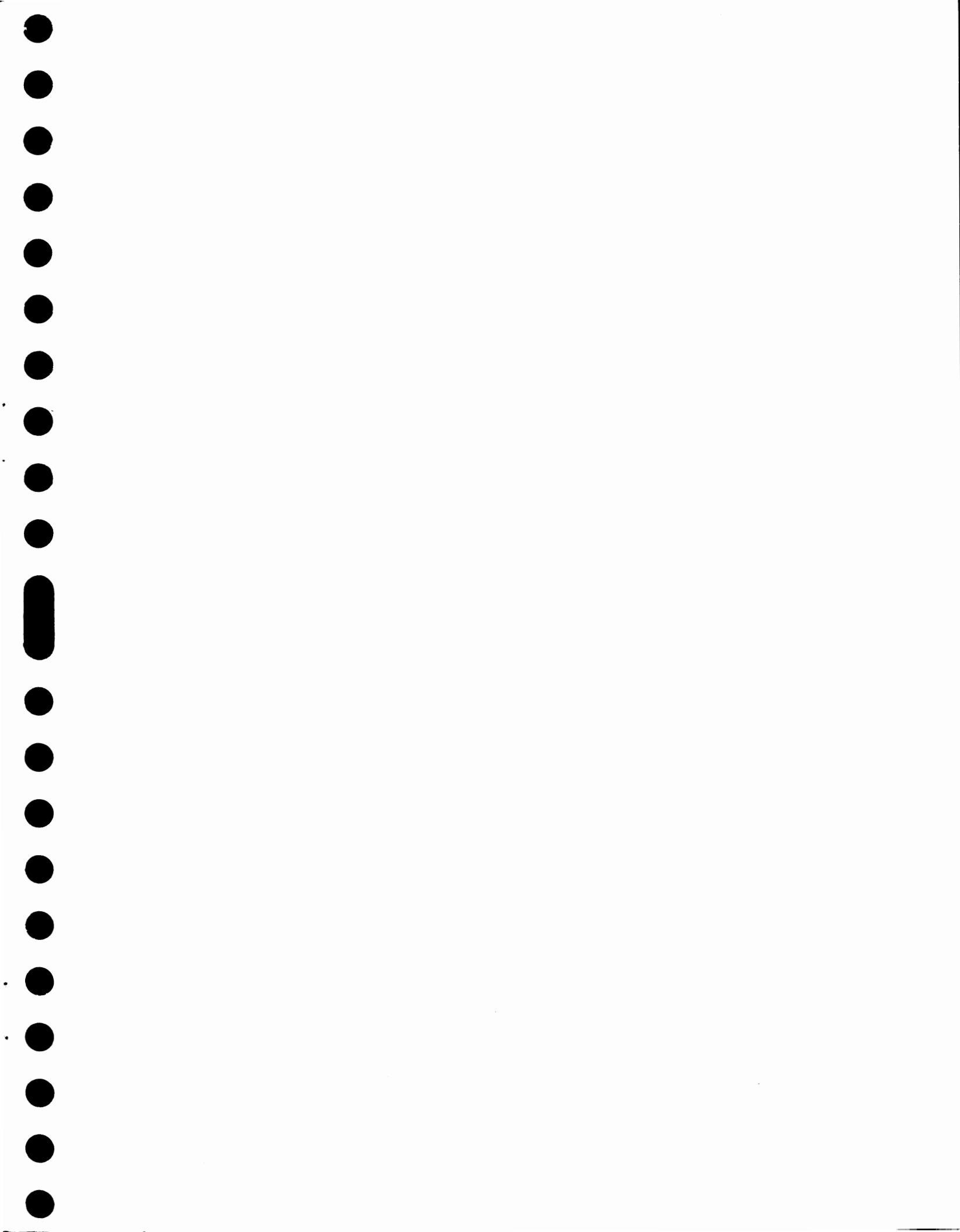
POSTAGE WILL BE PAID BY ADDRESSEE:

International Business Machines Corporation
Dept. 90L/Bldg. 234-2
P.O. Box 1328
Boca Raton, FL 33432

Fold and Tape

Please Do Not Staple

Fold and Tape



SR28-0495-0
Course 40437

IBM 4860 Pci Power Expansion, Memory Expansion, Speech Attachment COMP Printed in U.S.A. SR28-0495-0



SR28-0495-00

