MAP 0200: Memory Start

Symptom Explanation	Conditions That Could Cause This Symptom
You have entered this MAP because you were unable to complete the POST, the memory size displayed was incorrect, there was a memory parity check, you received an error message indicating a memory failure, or you have been directed here from another MAP.	• A memory module is failing. • A memory expansion adapter is failing. • The system board is failing. • The Setup program options are not correctly set.

0200

001
Find your system and system board type in the following figure and go to the MAP indicated.

System Type	System Board	MAP
Personal Computer	16/64KB	MAP 0200: Memory PC
Personal Computer	64/256KB	MAP 0200: Memory PC
Portable PC	64/256KB	MAP 0200: Memory XT
Personal Computer XT	64/256KB	MAP 0200: Memory XT
Personal Computer AT	All	MAP 0200: Memory AT

Note: 16/64KB and 64/256KB system boards are marked along the left edge of the system board.

Figure 1. System Identification

Notes:

MAP 0200: Memory (PC)

001
When a memory failure is detected during the POST, a 201 error message preceded by a four-character error code **(XXXX 201)** may be displayed. This error message lasts about 1 second before being replaced by a Parity Check message.
Watch the display carefully and make a note of the four-character error code.

- Power off the system.
- Insert the Advanced Diagnostics diskette into drive A.
- Power on the system.

DID A 201 ERROR OCCUR DURING THE POST?
Yes **No**

002
Go to Step 004 in this MAP.

003
Go to Step 011 in this MAP.

004
(From Step 002 in this MAP)
IS THE ADVANCED DIAGNOSTICS MENU DISPLAYED?
Yes **No**

005
Go to "MAP 0020: Power Start."

006
- Select **0 (SYSTEM CHECKOUT)**.

DOES THE AMOUNT OF MEMORY DISPLAYED ON THE INSTALLED DEVICES MENU MATCH THE AMOUNT OF INSTALLED MEMORY?
Yes **No**

007
(Step 007 continues)

007 (continued)
Go to Step 018 in this MAP.

008
(From Step 020 in this MAP)
- Press **Y (IS THE LIST CORRECT)**.
- Press **0 (RUN TESTS ONE TIME)**.
- Press **2 (XXX KB MEMORY)**.

DID YOU RECEIVE AN ERROR MESSAGE DURING DIAGNOSTIC TESTS?
Yes No

009
You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

010
- Note the four-character error code as shown in Figure 1. You will need it for later steps.

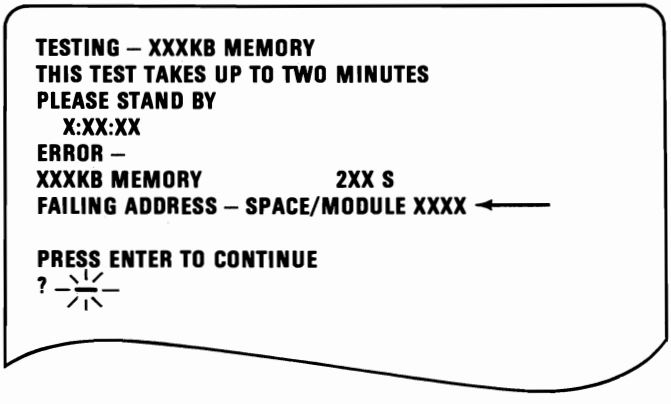


Figure 1. Advanced Diagnostics Error Message

Continue with Step 011 in this MAP.

011
(From Steps 003 and 010 in this MAP)
IS A 16/64KB SYSTEM BOARD INSTALLED?
Yes **No**

012
Go to Step 021 in this MAP.

013
IS THE FIRST CHARACTER OF THE ERROR CODE 0?
Yes **No**

014
Go to "MAP 0200: PC Family Expansion Memory."

015
- Find the failing bank and module in Figure 2.

Notes:

1. The failing bank is identified by the first two characters of the error code.

2. The failing module is identified by the last two characters of the error code.

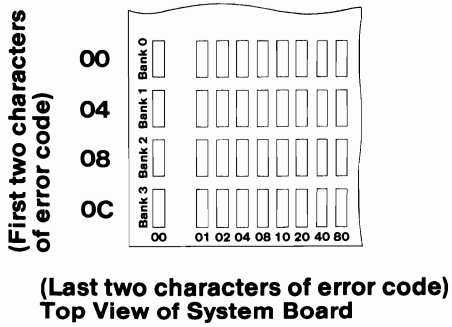


Figure 2. System Board

(Step 015 continues)

015 (continued)
DID YOU FIND THE FAILING MODULE?
Yes **No**

016
Replace the nine modules in the failing bank. If this does not correct the problem, replace the system board.

017
Replace the failing module, then go to Step 001 to verify system operation.

018
(From Step 007 in this MAP)
- Check the memory switches on the system board and any installed memory expansion options.

ARE THE SWITCH SETTINGS CORRECT?
Yes **No**

019
Correct the switch settings, then go to Step 001 to verify system operation.

020
- Press **N** then **Enter**.
- Follow the instructions on the screen to correct the memory size, then go to Step 008 in this MAP to verify system operation.

021
(From Step 012 in this MAP)
IS THE FIRST CHARACTER OF THE ERROR CODE 0, 1, 2, OR 3?
Yes **No**

022
Go to "MAP 0200: PC Family Expansion Memory."

023
(Step 023 continues)

023 (continued)

- Find the failing bank and module in Figure 3.

Notes:

1. The failing bank is identified by the first character of the error code.

2. The failing module is identified by the last two characters of the error code.

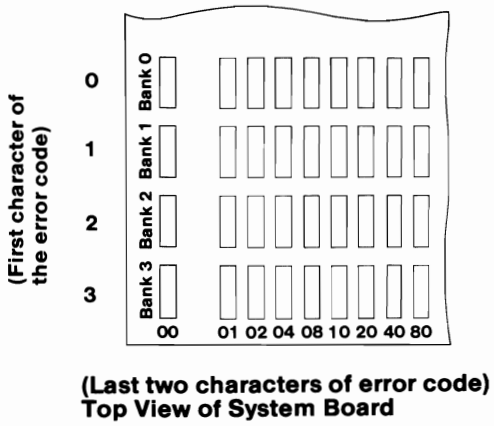


Figure 3. System Board

DID YOU FIND THE FAILING MODULE?

Yes **No**

024
Replace the nine modules in the failing bank. If this does not correct the problem, replace the system board.

025
Replace the failing module, then go to Step 001 to verify system operation.

Notes:

MAP 0200: Memory (XT)

001
- Power off the system.
- Insert the Advanced Diagnostics diskette into drive A.
- Power on the system.

DID A 201 ERROR OCCUR DURING THE POST?
Yes **No**

002
Go to Step 004 in this MAP.

003
Go to Step 017 in this MAP.

004
(From Step 002 in this MAP)
DID THE ADVANCED DIAGNOSTICS MENU APPEAR?
Yes **No**

005
Go to Step 025 in this MAP.

006
- Select **0 (SYSTEM CHECKOUT)**.

DOES THE AMOUNT OF MEMORY DISPLAYED ON THE INSTALLED DEVICES LIST MATCH THE AMOUNT OF MEMORY INSTALLED?
Yes **No**

007
Go to Step 022 in this MAP.

008
(From Step 024 in this MAP)
IS THE INSTALLED DEVICES LIST CORRECT?
Yes **No**

(Step 009 continues)

009

Press **N** and follow the instructions on the screen, then go to Step 010 in this MAP.

010

(From Step 009 in this MAP)

- Press **Y (IS THE LIST CORRECT)**.
- Press **0 (RUN TESTS ONE TIME)**.
- Press **2 (XXX KB MEMORY)**.

DID YOU RECEIVE AN ERROR MESSAGE DURING DIAGNOSTIC TESTS?

Yes **No**

011

You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

012

DOES THE ERROR MESSAGE HAVE A 201 ERROR CODE DISPLAYED?

Yes **No**

013

Go to Step 025 in this MAP.

014

- Note the seven-character error code **(XXXXX XX)** as shown in Figure 1 on page 0200-3.

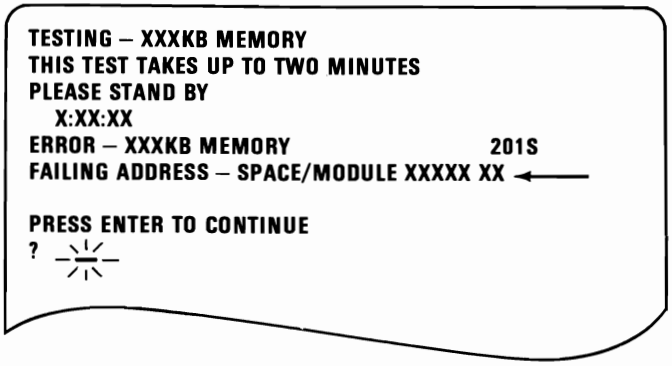


Figure 1. Advanced Diagnostic Error Message

IS THE FIRST CHARACTER OF THE SEVEN-CHARACTER ERROR CODE 0, 1, 2, OR 3?

Yes **No**

015
Go to "MAP 0200: PC Family Expansion Memory."

016
Go to Step 019 in this MAP.

017
(From Step 003 in this MAP)
201 is preceded by a seven-character error code **(XXXXX XX 201)**.

IS THE FIRST CHARACTER OF THE SEVEN-CHARACTER ERROR CODE 0, 1, 2, OR 3?

Yes **No**

018
Go to "MAP 0200: PC Family Expansion Memory."

019
(From Step 016 in this MAP)
- Find the failing bank and module in Figure 2 on page 0200-4.

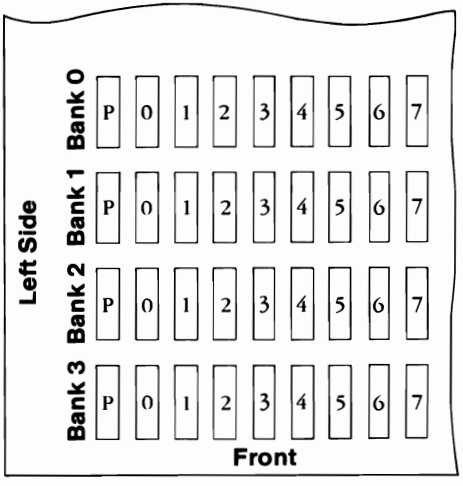
Notes:

1. The failing bank is identified by the first character of the error code.

2. The failing module is identified by the last two characters of the error code.

First Character of the Error Code
0 = Bank 0 1 = Bank 1 2 = Bank 2 3 = Bank 3

Last Two Characters of the Error Code
00 = P 01 = 0 02 = 1 04 = 2 08 = 3 10 = 4 20 = 5 40 = 6 80 = 7



Top View of System Board

Figure 2. System Board

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

020
Replace the nine modules in the failing bank. If this does not correct the problem, replace the system board.

021
Replace the failing module, then go to Step 001 in this MAP to verify system operation.

022
(From Step 007 in this MAP)
- Check the memory switch settings on the system board and any installed memory expansion options.

ARE THE SWITCH SETTINGS CORRECT?
Yes **No**

023
Correct the switch settings, then go to Step 001 to verify system operation.

024
- Press **N** then **Enter.**
- Follow the instructions on the screen to correct the memory size, then go to Step 008 in this MAP.

025
(From Steps 005 and 013 in this MAP)
IS A PARITY CHECK MESSAGE DISPLAYED?
Yes **No**

026
Go to "MAP 0020: Power Start."

027
IS A FIVE-CHARACTER ERROR CODE DISPLAYED UNDER THE PARITY CHECK MESSAGE?
Yes **No**

028
Go to "MAP 0020: Power Start."

029
IS THE FIRST CHARACTER OF THE ERROR CODE 0, 1, 2, OR 3.
Yes **No**

030
Go to "MAP 0200: PC Family Expansion Memory."

(Step 031 continues)

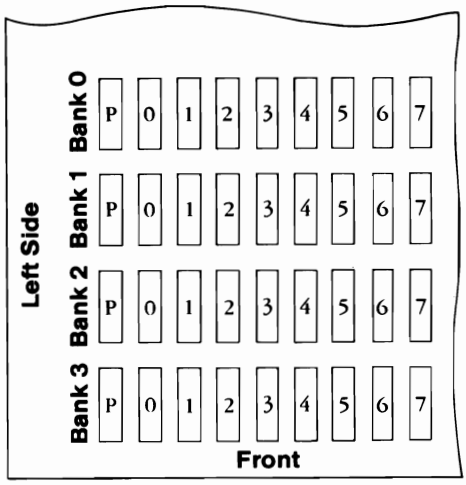
031

- Find the failing bank in the following figure.

  Note: The failing bank is identified by the first character of the error code.

- Replace the nine memory modules in the failing bank, then go to Step 001 to verify system operation.

First Character of the Error Code
0 = Bank 0 1 = Bank 1 2 = Bank 2 3 = Bank 3



Top View of System Board

Figure 3. System Board

MAP 0200: PC Family Expansion Memory

Symptom Explanation	Conditions That Could Cause This Symptom
You have entered this MAP from another memory MAP because you have one of the following error messages: XXXXX XX 20X XXXX 20X PARITY CHECK X XXXXX	• The memory expansion option is failing. • A memory module is failing. • The system board is failing.

001
DID YOU RECEIVE AN XXXXX XX OR XXXX ERROR MESSAGE?
Yes **No**

002
Go to Step 049 in this MAP.

003
ARE ANY 32KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

004
Go to Step 008 in this MAP.

005
- Refer to Figure 1 on page 0200-2 and find the first two characters of the error code and the corresponding 32KB Memory Expansion Option switch setting.

(Step 005 continues)

005 (continued)

- Compare the switch setting identified in Figure 1 to the switch setting on each 32KB Memory Expansion Option in the system.

32KB Memory Expansion Option	
First Two Characters of Error Code	**Switch Settings 12345678**
10 or 14	↑↑↑↓↑***
18 or 1C	↑↑↑↓↓***
20 or 24	↑↑↓↑↑***
28 or 2C	↑↑↓↑↓***
30 or 34	↑↑↓↓↑***
38 or 3C	↑↑↓↓↓***
40 or 44	↑↓↑↑↑***
48 or 4C	↑↓↑↑↓***
50 or 54	↑↓↑↓↑***

32KB Memory Expansion Option	
First Two Characters of Error Code	**Switch Settings 12345678**
58 or 5C	↑↓↑↓↓***
60 or 64	↑↓↓↑↑***
68 or 6C	↑↓↓↑↓***
70 or 74	↑↓↓↓↑***
78 or 7C	↑↓↓↓↓***
80 or 84	↓↑↑↑↑***
88 or 8C	↓↑↑↑↓***
90 or 94	↓↑↑↓↑***
98 or 9C	↓↑↑↓↓***

Figure 1. 32KB Memory Expansion Option

IS A 32KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 1)?

Yes **No**

006
Go to Step 008 in this MAP.

007
(Step 007 continues)

007 (continued)
Replace the 32KB Memory Expansion Option. Refer to "MAP 0200: Memory Start" to verify system operation.

008
(From Steps 004 and 006 in this MAP)
ARE ANY 64KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

009
Go to Step 013 in this MAP.

010
- Refer to Figure 2 on page 0200-4 and find the first character of the error code and the corresponding 64KB Memory Expansion Option switch setting.
- Compare the switch setting identified in Figure 2 on page 0200-4 to the switch setting on each 64KB Memory Expansion Option in the system.

64KB Memory Expansion Option	
First Characters of Error Code	Switch Settings 12345678
1	↑↑↑↓****
2	↑↑↓↑****
3	↑↑↓↓****
4	↑↓↑↑****
5	↑↓↑↓****
6	↑↓↓↑****
7	↑↓↓↓****
8	↓↑↑↑****
9	↓↑↑↓****

Figure 2. 64KB Memory Expansion Option

IS A 64KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 2)?

Yes **No**

011
Go to Step 013 in this MAP.

012
Replace the 64KB Memory Expansion Option. Refer to "MAP 0200: Memory Start" to verify system operation.

013

(From Steps 009 and 011 in this MAP)

ARE ANY 64/256KB MEMORY EXPANSION OPTIONS INSTALLED?

Yes **No**

014

Go to Step 034 in this MAP.

015

- Refer to Figure 3 on page 0200-6 and find the first character of the error code and the corresponding 64/256KB Memory Expansion Option switch setting.
- Compare the switch setting identified in Figure 3 on page 0200-6 to the switch setting on each 64/256KB Memory Expansion Option in the system.

64/256KB Memory Expansion Option		
First Character of Error Code	Switch Settings	
	16/64KB CPU 12345678	64/256KB CPU 12345678
1	↑↑↑↓****	N/A
2	↑↑↑↓****	N/A
3	↑↑↑↓****	N/A
4	↑↑↑↓****	↑↓↑↑****
5	↑↓↑↓****	↑↓↑↑****
6	↑↓↑↓****	↑↓↑↑****
7	↑↓↑↓****	↑↓↑↑****
8	↑↓↑↓****	↓↑↑↑****
9	↓↑↑↓****	↓↑↑↑****

Figure 3. 64/256KB Memory Expansion Option

IS A 64/256KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 3)?

Yes **No**

016

Go to Step 034 in this MAP.

017

ARE THE LAST TWO CHARACTERS OF THE ERROR CODE 00, 01, 02, 04, 08, 20, 40, OR 80?

Yes **No**

(Step 018 continues)

018

Replace the 64/256KB Memory Expansion Option. Remove the memory modules from the old option, and install them on the new option. Refer to "MAP 0200: Memory Start" to verify system operation.

019

- Find the failing bank and module in Figure 4.

Note: The failing bank is identified by the first character of the error code; the failing module is identified by the last two characters of the error code.

First Character of Error Code	Type of System Board	
	16KB/64KB	64KB/256KB
1	Bank 0	N/A
2	Bank 1	N/A
3	Bank 2	N/A
4	Bank 3	Bank 0
5	Bank 0	Bank 1
6	Bank 1	Bank 2
7	Bank 2	Bank 3
8	Bank 3	Bank 0
9	Bank 0	Bank 1

Last Two Characters of the Error Code
00 = P
01 = 0
02 = 1
04 = 2
08 = 3
10 = 4
20 = 5
40 = 6
80 = 7

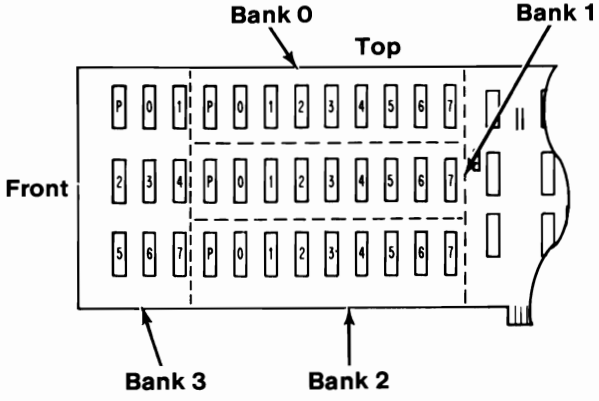


Figure 4. 64/256KB Memory Expansion Option

- Power off the system.
- Replace the failing module.

(Step 019 continues)

019 (continued)
- Power on the system.
- Run the Memory tests. Use the **(RUN TESTS ONE TIME)** option.

DID YOU RECEIVE A MEMORY ERROR?

Yes **No**

020
You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

021
- Compare the error code to the error code received earlier.

IS THE FIRST CHARACTER OF EACH ERROR CODE THE SAME?

Yes **No**

022
You have another problem with memory. Go to "MAP 0200: Memory Start."

023

ARE THE LAST TWO CHARACTERS OF EACH ERROR CODE THE SAME?

Yes **No**

024
You have another problem with memory. Go to "MAP 200: Memory Start."

025
(From Step 032 in this MAP)
The same 64/256KB Memory Expansion Option is failing. The first character of the error code has incorrectly identified the failing bank.

- Power off the system.
- Refer to Figure 5.
- Replace the module in one of the banks that has not had the module replaced.

Note: The module is identified by the last two characters of the error code.

Last Two Characters of the Error Code
00 = P
01 = 0
02 = 1
04 = 2
08 = 3
10 = 4
20 = 5
40 = 6
80 = 7

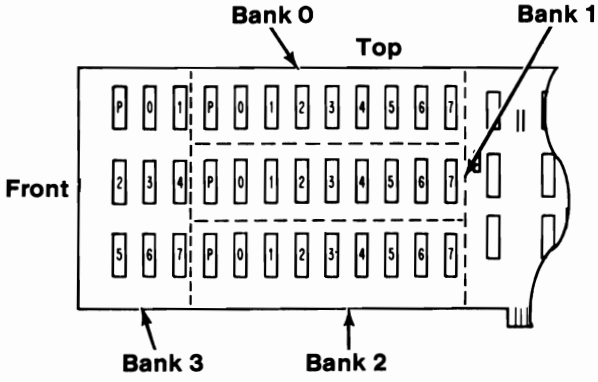


Figure 5. 64/256KB Memory Expansion Option

- Power on the system.
- Run the Memory tests. Use the **(RUN TESTS ONE TIME)** option.

DID YOU RECEIVE A MEMORY ERROR?

Yes **No**

026

You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

027

- Compare the error code to the one you previously received.

DOES THE FIRST CHARACTER OF THE NEW ERROR CODE MATCH THE FIRST CHARACTER OF THE PREVIOUS ERROR CODE?

Yes **No**

(Step 028 continues)

028
You have another problem with memory. Go to "MAP 0200: Memory Start" and start again.

029
DO THE LAST TWO CHARACTERS OF THE NEW ERROR CODE MATCH THE LAST TWO CHARACTERS OF THE PREVIOUS ERROR CODE?
Yes **No**

030
You have another problem with memory. Go to "MAP 0200: Memory Start."

031
The same 64/256KB Memory Option is still failing.

HAVE YOU REPLACED THE MODULE (IDENTIFIED BY THE LAST TWO CHARACTERS OF THE ERROR CODE) IN ALL FOUR BANKS?
Yes **No**

032
Go to Step 025 in this MAP.

033
Replace the 64/256KB Memory Expansion Option. Remove the modules from the old option and install them on the new option. Refer to "MAP 0200: Memory Start" to verify system operation.

034
(From Steps 014 and 016 in this MAP)
DO YOU HAVE A 256KB MEMORY EXPANSION OPTION INSTALLED?
Yes **No**

035
Check all memory switch settings. Make the necessary corrections, then go to "MAP 0200: Memory Start."

(Step 036 continues)

036

- Refer to Figure 6 and find the first character of the error code and the corresponding 256KB Memory Expansion Option switch setting.
- Compare the switch setting identified in Figure 6 to the switch setting on each 256KB Memory Expansion Option in the system.

256KB Memory Expansion Option		
First Character of Error Code	Switch Settings	
	16/64KB CPU 12345678	64/256KB CPU 12345678
1	↑↑↑↓****	N/A
2	↑↑↑↓****	N/A
3	↑↑↑↓****	N/A
4	↑↑↑↓****	↑↓↑↑****
5	↑↓↑↓****	↑↓↑↑****
6	↑↓↑↓****	↑↓↑↑****
7	↑↓↑↓****	↑↓↑↑****
8	↑↓↑↓****	↓↑↑↑****
9	↓↑↑↓****	↓↑↑↑****

Figure 6. 256KB Memory Expansion Option

DO YOU HAVE A 256KB MEMORY EXPANSION OPTION WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 6)?

Yes | (Step 037 continues)

No |

037
Check all memory switch settings. Make the necessary corrections, then go to "MAP 0200: Memory Start."

038
- Refer to Figure 7 and find the failing module (identified by the first character of the error code).

First Character of Error Code	Type of System Board	
	16KB/64KB	64KB/256KB
1	Module 0	N/A
2	Module 1	N/A
3	Module 2	N/A
4	Module 3	Module 0
5	Module 0	Module 1
6	Module 1	Module 2
7	Module 2	Module 3
8	Module 3	Module 0
9	Module 0	Module 1

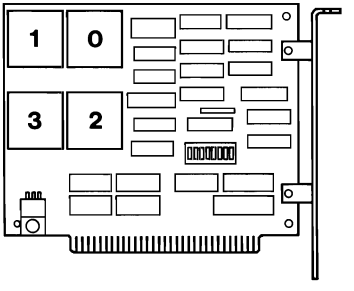


Figure 7. 256KB Memory Expansion Option

- Power off the system.
- Replace the failing module.
- Power on the system.
- Run the memory tests. Use the **(RUN TESTS ONE TIME)** option.

DID YOU RECEIVE AN ERROR?
Yes **No**

039
You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

040
- Compare the error code to the error code received earlier.

(Step 040 continues)

040 (continued)
DOES THE FIRST CHARACTER OF THE NEW ERROR CODE MATCH THE FIRST CHARACTER OF THE PREVIOUS ERROR CODE?

Yes **No**

041
You have another problem with memory. Go to "MAP 0200: Memory Start."

042
(From Step 047 in this MAP)
The same 256KB Memory Expansion Option is failing. The Advanced Diagnostic tests have incorrectly identified the failing module.

- Power off the system.
- Replace one of the modules that has not been replaced.
- Power on the system.
- Run the Memory tests. Use the **(RUN TESTS ONE TIME)** option.

DID YOU RECEIVE AN ERROR?

Yes **No**

043
You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

044

- Compare the error code to the error code you received earlier.

DOES THE FIRST CHARACTER OF THE NEW ERROR CODE MATCH THE FIRST CHARACTER OF THE PREVIOUS ERROR CODE?

Yes **No**

045
Go to "MAP 0200: Memory Start."

(Step 046 continues)

046
The same 256KB Memory Expansion Option is still failing.

HAVE ALL FOUR MODULES BEEN REPLACED?
Yes **No**

047
Go to Step 042 in this MAP.

048
Replace the 256KB Memory Expansion Option. Refer to "MAP 0200: Memory Start" to verify system operation.

049
(From Step 002 in this MAP)
You are here because you have received a Parity Check error message.

ARE ANY 32KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

050
Go to Step 054 in this MAP.

051
- Refer to Figure 8 on page 0200-15 and find the first two characters of the error code and the corresponding 32KB Memory Expansion Option switch settings.
- Compare the switch setting identified in Figure 8 on page 0200-15 to the switch settings on each 32KB Memory Expansion Option in the system.

32KB Memory Expansion Option	
First Two Characters of Error Code	Switch Settings 12345678
40 or 44	↑↓↑↑↑***
48 or 4C	↑↓↑↑↓***
50 or 54	↑↓↑↓↑***
58 or 5C	↑↓↑↓↓***
60 or 64	↑↓↓↑↑***
68 or 6C	↑↓↓↑↓***
70 or 74	↑↓↓↓↑***
78 or 7C	↑↓↓↓↓***
80 or 84	↓↑↑↑↑***
88 or 8C	↓↑↑↑↓***
90 or 94	↓↑↑↓↑***
98 or 9C	↓↑↑↓↓***

Figure 8. 32KB Memory Expansion Option

IS A 32KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 8)?

Yes **No**

052

Go to Step 054 in this MAP.

(Step 053 continues)

053
Replace the 32KB Memory Expansion Option. Refer to "MAP 0200: Memory Start" to verify system operation.

054
(From Steps 050 and 052 in this MAP)
ARE ANY 64KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

055
Go to Step 059 in this MAP.

056
- Refer to Figure 9 and find the first character of the error code and the corresponding switch settings.
- Compare the switch setting identified in Figure 9 to the switch settings on each 64KB Memory Expansion Option in the system.

64KB Memory Expansion Option	
First Character of Error Code	Switch Settings 12345678
4	↑↓↑↑****
5	↑↓↑↓****
6	↑↓↓↑****
7	↑↓↓↓****
8	↓↑↑↑****
9	↓↑↑↓****

Figure 9. 64KB Memory Expansion Option

(Step 056 continues)

056 (continued)
IS A 64KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 9 on page 0200-16)?
Yes **No**

057
Go to Step 059 in this MAP.

058
Replace the 64KB Memory Expansion Option. Refer to "MAP 0200: Memory Start" to verify system operation.

059
(From Steps 055 and 057 in this MAP)
ARE ANY 64/256KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

060
Go to Step 064 in this MAP.

061
- Refer to Figure 10 and find the first character of the error code and the corresponding 64/256KB Memory Expansion Option switch setting.
- Compare the switch setting identified in Figure 10 to the switch settings on each 64/256KB Memory Expansion Option in the system.

64/256KB Memory Expansion Option	
First Character of Error Code	**Switch Settings 12345678**
4, 5, 6, or 7	↑↓↑↑****
8 or 9	↓↑↑↑****

Figure 10. 64/256KB Memory Expansion Option

061 (continued)
IS A 64/256KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 10 on page 0200-17)?
Yes **No**

062
Go to Step 064 in this MAP.

063
- Refer to Figure 11 and find the failing bank identified by the first character of the error code.

First Character of Error Code
4 = Bank 0
5 = Bank 1
6 = Bank 2
7 = Bank 3
8 = Bank 0
9 = Bank 1

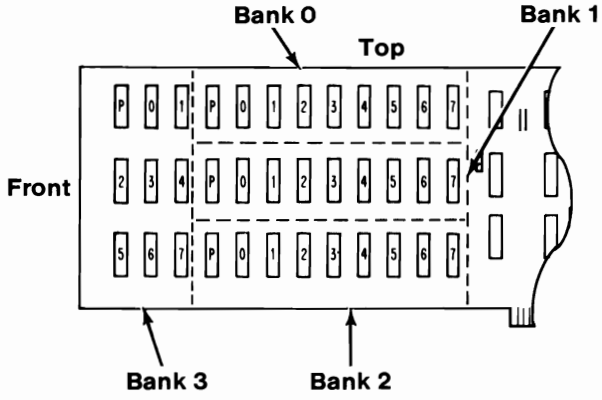


Figure 11. 64/256KB Memory Expansion Option

- Replace the nine modules in the failing bank. Refer to "MAP 0200: Memory Start" to verify system operation.

064
(From Steps 060 and 062 in this MAP)

ARE ANY 256KB MEMORY EXPANSION OPTIONS INSTALLED?
Yes **No**

065
Check all memory switch settings. Make any necessary corrections, then go to "MAP 0200: Memory Start."

(Step 066 continues)

066

- Compare the switch setting identified in Figure 12 to the 256KB Memory Expansion Option in the system.

256KB Memory Expansion Option	
First Character of Error Code	Switch Settings 12345678
4, 5, 6, or 7	↑↓↑↑****

Figure 12. 256KB Memory Expansion Option

IS A 256KB MEMORY EXPANSION OPTION INSTALLED WITH SWITCH SETTINGS THAT MATCH THE ONE IDENTIFIED (Figure 12)?

Yes **No**

067

Check all memory switch settings. Make any necessary corrections, then go to "MAP 0200: Memory Start."

068

- Refer to Figure 13 and find the failing module identified by the first character of the error code.

First Character of Error Code
4 = Module 0
5 = Module 1
6 = Module 2
7 = Module 3
8 = Module 0
9 = Module 1

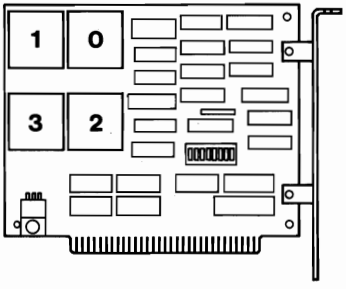


Figure 13. 256KB Memory Expansion Option

(Step 068 continues)

068 (continued)

- Replace the failing module. Refer to "MAP 0200: Memory Start" to verify system operation.

MAP 0200: Memory (AT)

Symptom Explanation	Conditions That Could Cause This Symptom
You have entered this MAP because you were unable to complete the POST, the memory size displayed was incorrect, there was a memory parity check, or you have an error message indicating a memory failure.	• A memory module is failing • A memory expansion option is failing • The system board is failing • The Setup program options are not correctly set.

001

- Power off the system.
- Insert the Advanced Diagnostics diskette into drive A.
- Power on the system.

DID YOU RECEIVE A 10-CHARACTER ERROR CODE?

Note: If you also received a 164-Memory Size Error, run the Setup program and verify the memory size. If you receive a 164-Memory Size Error after attempting to correct the Setup program disregard the error and continue with this MAP.

Yes **No**

002
Go to Step 004 in this MAP.

003
Go to Step 019 in this MAP.

004
(From Step 002 in this MAP)
DID YOU RECEIVE A PARITY-CHECK MESSAGE?
Yes **No**

005
Go to Step 007 in this MAP.

006
Go to Step 129 in this MAP.

007
(From Step 005 in this MAP)
DID THE ADVANCED DIAGNOSTICS MENU APPEAR?
Yes **No**

008
Go to "MAP 0020: Power Start."

009
- Select **0 (SYSTEM CHECKOUT)**.

DOES THE AMOUNT OF MEMORY SHOWN IN THE INSTALLED DEVICES LIST MATCH THE AMOUNT INSTALLED IN THE SYSTEM?
Yes **No**

010
Go to Step 012 in this MAP.

011
Go to Step 015 in this MAP.

012
(From Step 010 in this MAP)
- Check the switch settings on all installed memory expansion options.

(Step 012 continues)

012 (continued)
ARE THE SWITCH SETTINGS CORRECT?

Yes **No**

013

- Correct the switch settings and run the Setup program to verify the memory size.

Go to Step 001 in this MAP to verify system operation.

014

- Press "N" then **Enter**.
- Follow the instructions on the screen to correct the Installed Devices list.

Go to Step 017 in this MAP.

015
(From Step 011 in this MAP)
IS THE INSTALLED DEVICES LIST CORRECT?

Yes **No**

016
Follow the instructions on the screen to correct the Installed Devices list then go to Step 017 in this MAP.

017
(From Steps 014 and 016 in this MAP)

- Run the Memory tests. Use the **(RUN TESTS ONE TIME)** option.

DID YOU RECEIVE A 10-CHARACTER ERROR CODE FOLLOWED BY 20X (XXXXXX XXXX 20X)?

Yes **No**

018
Go to Step 127 in this MAP.

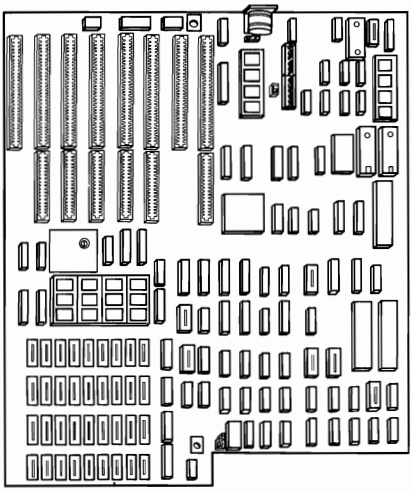
019
(From Steps 003 and 142 in this MAP)

- Refer to Figure 1 on page 0200-4 and find the first two characters of the error code and go to the step indicated.

First Two Digits of Error Code	Step
00 01 02 03 04 05 06 07	Step 020 in this MAP.
08 09	Step 032 in this MAP.
10 11 12 13 14 15 16 17	Step 046 in this MAP.
18 19 1A 1B 1C 1D 1E 1F	Step 049 in this MAP.
20 21 22 23 24 25 26 27	Step 052 in this MAP.
28 29 2A 2B 2C 2D 2E 2F	Step 055 in this MAP.
30 31 32 33 34 35 36 37	Step 058 in this MAP.
38 39 3A 3B 3C 3D 3E 3F	Step 061 in this MAP.
40 41 42 43 44 45 46 47	Step 064 in this MAP.
48 49 4A 4B 4C 4D 4E 4F	Step 067 in this MAP.
50 51 52 53 54 55 56 57	Step 070 in this MAP.
58 59 5A 5B 5C 5D 5E 5F	Step 073 in this MAP.
60 61 62 63 64 65 66 67	Step 076 in this MAP.
68 69 6A 6B 6C 6D 6E 6F	Step 079 in this MAP.
70 71 72 73 74 75 76 77	Step 082 in this MAP.
78 79 7A 7B 7C 7D 7E 7F	Step 085 in this MAP.
80 81 82 83 84 85 86 87	Step 088 in this MAP.
88 89 8A 8B 8C 8D 8E 8F	Step 091 in this MAP.
90 91 92 93 94 95 96 97	Step 094 in this MAP.
98 99 9A 9B 9C 9D 9E 9F	Step 097 in this MAP.
A0 A1 A2 A3 A4 A5 A6 A7	Step 100 in this MAP.
A8 A9 AA AB AC AD AE AF	Step 103 in this MAP.

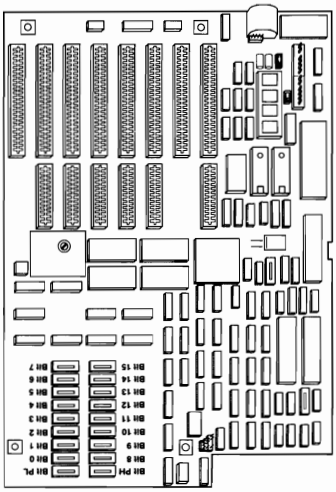
Figure 1. Error Codes

020
(From Step 019 in this MAP)
- Refer to Figure 2 and determine the type of system board installed.



Front

Type 1



Front

Type 2 or 3

Figure 2. System Board Type

IS A TYPE 1 SYSTEM BOARD INSTALLED?
Yes **No**

021
Go to Step 027 in this MAP.

022
The first two characters of the error code (**XX**XXXX XXXX) indicate the bank with the failing memory module. The last four characters of the error code (XXXXXX **XXXX**) indicate the failing memory module.
- Refer to Figure 3 on page 0200-6 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

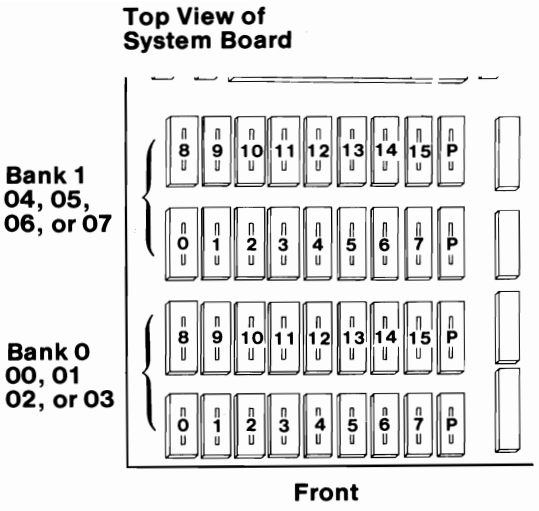


Figure 3. Type 1 System Board Memory

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

023
Replace the system board.

024

- Replace the failing memory module on the system board.

  Note: If the last four characters of your error code are 0000, replace both Parity (P) modules in the failing bank.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?

Yes **No**

025
Replace the system board.

(Step 026 continues)

026
The system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

027
(From Step 021 in this MAP)
The last four characters of the error code (XXXXXX **XXXX**) indicate the failing memory module.
- Refer to Figure 4 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

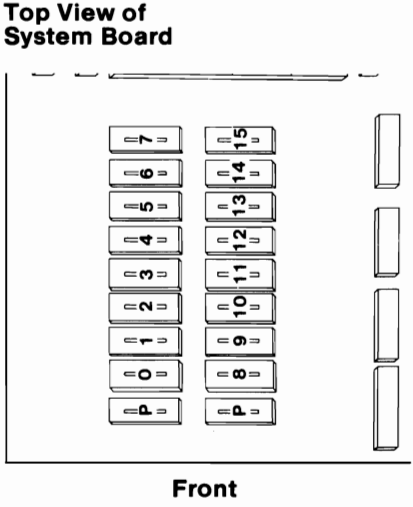


Figure 4. Type 2 and 3 System Board Memory

DID YOU FIND THE FAILING MEMORY MODULE?
Yes **No**

028
Replace the system board.

029
- Replace the failing memory module on the system board.

> **Note:** If the last four characters of your error code are 0000, replace both Parity (P) modules.

029 (continued)
- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?
Yes **No**

030
Replace the system board.

031
The system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

032
(From Step 019 in this MAP)

IS A 128KB MEMORY EXPANSION OPTION INSTALLED?
Yes **No**

033
Go to Step 039 in this MAP.

034
A 10-character error code that begins with 08 or 09 indicates a failure in bank 1 of the 128KB Memory Expansion Option. The last four characters of the error code (XXXXXX **XXXX**) indicate the failing memory module.
- Refer to Figure 5 on page 0200-9 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

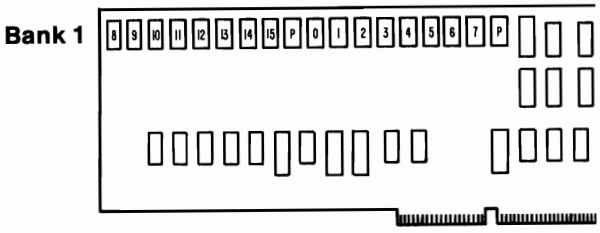


Figure 5. 128KB Memory Expansion Option

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

035
Replace the 128KB Memory Expansion Option.

036
Replace the failing memory module on the 128KB Memory Expansion Option.

Note: If the last four characters of your error code are 0000, replace both Parity (P) modules.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?

Yes **No**

037
Replace the 128KB Memory Expansion Option.

(Step 038 continues)

038
The system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

039
(From Step 033 in this MAP)

IS A 128KB/640KB MEMORY EXPANSION OPTION INSTALLED?

Yes **No**

040
Go to Step 140 in this MAP.

041
A 10-character error code that begins with 08 or 09 indicates a failure in bank 1 of the 128/640KB Memory Expansion Option . The last four characters of your error code (XXXXXX **XXXX**) indicate the failing memory module.

- Refer to Figure 6 and find the failing memory module for the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

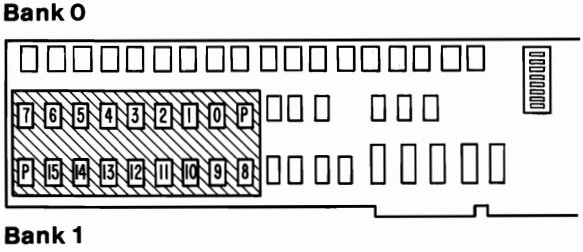


Figure 6. 128/640KB Memory Expansion Option

041 (continued)

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

042
Replace the 128KB/640KB Memory Expansion Option.

043

- Replace the failing memory module on the 128/640KB Memory Expansion Option.

  Note: If the last four characters of your error code are 0000, replace both Parity (P) modules.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?

Yes **No**

044
Replace the 128KB/640KB Memory Expansion Option.

045
The system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

046
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 7 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↑↓↑↑↑↑		512KB	10 11 12 13
1		↑↑↑↓↑↓↑↓	512KB	14 15 16 17
0	↑↑↑↓↑↑↑↓		128/640KB	10 11 12 13 14 15 16 17
0	↑↑↑↓↑↑↑↑		512KB/2MB	10 11 12 13 14 15 16 17

Figure 7.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

047
Go to Step 140 in this MAP.

048
Go to Step 106 in this MAP.

049
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 8 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↑↓↓↑↑↑		512KB	18 19 1A 1B
1		↑↑↑↓↓↓↑↓	512KB	1C 1D 1E 1F
0	↑↑↑↓↓↑↑↓		128/640KB	18 19 1A 1B 1C 1D 1E 1F
0	↑↑↑↓↓↑↑↑		512KB/2MB	18 19 1A 1B 1C 1D 1E 1F
1	↑↑↑↓↑↑↑↑		512KB/2MB	18 19 1A 1B 1C 1D 1E 1F

Figure 8.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

050
Go to Step 140 in this MAP.

051
Go to Step 106 in this MAP.

052
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 9 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↓↑↑↑↑		512KB	20 21 22 23
1		↑↑↓↑↑↓↑↓	512KB	24 25 26 27
0	↑↑↓↑↑↑↑↓		128/640KB	20 21 22 23 24 25 26 27
0	↑↑↓↑↑↑↑		512KB/2MB	20 21 22 23 24 25 26 27
1	↑↑↑↓↓↑↑↑		512KB/2MB	20 21 22 23 24 25 26 27
2	↑↑↑↓↑↑↑↑		512KB/2MB	20 21 22 23 24 25 26 27

Figure 9.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

053
Go to Step 140 in this MAP.

054
Go to Step 106 in this MAP.

055
(From Step 019 in this MAP)

- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 10 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↓↑↓↑↑↑		512KB	28 29 2A 2B
1		↑↑↓↑↓↓↑↓	512KB	2C 2D 2E 2F
0	↑↑↓↑↓↑↑↓		128/640KB	28 29 2A 2B 2C 2D 2E 2F
0	↑↑↓↑↓↑↑↑		512KB/2MB	28 29 2A 2B 2C 2D 2E 2F
1	↑↑↓↑↑↑↑↑		512KB/2MB	28 29 2A 2B 2C 2D 2E 2F
2	↑↑↑↓↓↑↑↑		512KB/2MB	28 29 2A 2B 2C 2D 2E 2F
3	↑↑↑↓↑↑↑↑		512KB/2MB	28 29 2A 2B 2C 2D 2E 2F

Figure 10.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

056
Go to Step 140 in this MAP.

057
Go to Step 106 in this MAP.

058
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 11 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↓↓↑↑↑↑		512KB	30 31 32 33
1		↑↑↓↓↑↓↑↓	512KB	34 35 36 37
0	↑↑↓↓↑↑↑↓		128/640KB	30 31 32 33 34 35 36 37
0	↑↑↓↓↑↑↑↑		512KB/2MB	30 31 32 33 34 35 36 37
1	↑↑↓↑↓↑↑↑		512KB/2MB	30 31 32 33 34 35 36 37
2	↑↑↓↑↑↑↑↑		512KB/2MB	30 31 32 33 34 35 36 37
3	↑↑↑↓↓↑↑↑		512KB/2MB	30 31 32 33 34 35 36 37

Figure 11.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **No**

059
Go to Step 140 in this MAP.

060
Go to Step 106 in this MAP.

061
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 12 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↑↓↓↓↑↑↑		512KB	38 39 3A 3B
1		↑↑↓↓↓↓↑↓	512KB	3C 3D 3E 3F
0	↑↑↓↓↓↑↑↓		128/640KB	38 39 3A 3B 3C 3D 3E 3F
0	↑↑↓↓↓↑↑↑		512KB/2MB	38 39 3A 3B 3C 3D 3E 3F
1	↑↑↓↓↑↑↑↑		512KB/2MB	38 39 3A 3B 3C 3D 3E 3F
2	↑↑↓↑↓↑↑↑		512KB/2MB	38 39 3A 3B 3C 3D 3E 3F
3	↑↑↓↑↑↑↑↑		512KB/2MB	38 39 3A 3B 3C 3D 3E 3F

Figure 12.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **063**
Go to Step 106 in this MAP.

No — **062**
Go to Step 140 in this MAP.

064
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 13 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↑↑↑↑↑		512KB	40 41 42 43
1		↑↓↑↑↑↓↑↓	512KB	44 45 46 47
0	↑↓↑↑↑↑↓		128/640KB	40 41 42 43 44 45 46 47
0	↑↓↑↑↑↑↑		512KB/2MB	40 41 42 43 44 45 46 47
1	↑↑↓↓↑↑↑		512KB/2MB	40 41 42 43 44 45 46 47
2	↑↑↓↓↑↑↑↑		512KB/2MB	40 41 42 43 44 45 46 47
3	↑↑↓↑↓↑↑↑		512KB/2MB	40 41 42 43 44 45 46 47

Figure 13.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

065
Go to Step 140 in this MAP.

066
Go to Step 106 in this MAP.

067
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 14 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↑↑↓↑↑↑		512KB	48 49 4A 4B
1		↑↓↑↑↓↑↓	512KB	4C 4D 4E 4F
0	↑↓↑↑↓↑↑↓		128/640KB	48 49 4A 4B 4C 4D 4E 4F
0	↑↓↑↑↓↑↑↑		512KB/2MB	48 49 4A 4B 4C 4D 4E 4F
1	↑↓↑↑↑↑↑↑		512KB/2MB	48 49 4A 4B 4C 4D 4E 4F
2	↑↑↓↓↓↑↑↑		512KB/2MB	48 49 4A 4B 4C 4D 4E 4F
3	↑↑↓↓↑↑↑↑		512KB/2MB	48 49 4A 4B 4C 4D 4E 4F

Figure 14.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **No**

068
Go to Step 140 in this MAP.

069
Go to Step 106 in this MAP.

070
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 15 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↑↓↑↑↑↑		512KB	50 51 52 53
1		↑↓↑↓↑↓↑↓	512KB	54 55 56 57
0	↑↓↑↓↑↑↑↓		128/640KB	50 51 52 53 54 55 56 57
0	↑↓↑↓↑↑↑↑		512KB/2MB	50 51 52 53 54 55 56 57
1	↑↓↑↑↓↑↑↑		512KB/2MB	50 51 52 53 54 55 56 57
2	↑↓↑↑↑↑↑↑		512KB/2MB	50 51 52 53 54 55 56 57
3	↑↑↓↓↑↑↑↑		512KB/2MB	50 51 52 53 54 55 56 57

Figure 15.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

071
Go to Step 140 in this MAP.

072
Go to Step 106 in this MAP.

073
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 16 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↑↓↓↑↑↑		512KB	58 59 5A 5B
1		↑↓↑↓↓↓↑↓	512KB	5C 5D 5E 5F
0	↑↓↑↓↓↑↑↓		128/640KB	58 59 5A 5B 5C 5D 5E 5F
0	↑↓↑↓↓↑↑↑		512KB/2MB	58 59 5A 5B 5C 5D 5E 5F
1	↑↓↑↓↑↑↑↑		512KB/2MB	58 59 5A 5B 5C 5D 5E 5F
2	↑↓↑↑↓↑↑↑		512KB/2MB	58 59 5A 5B 5C 5D 5E 5F
3	↑↓↑↑↑↑↑↑		512KB/2MB	58 59 5A 5B 5C 5D 5E 5F

Figure 16.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **075**
Go to Step 106 in this MAP.

No — **074**
Go to Step 140 in this MAP.

076
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 17 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↓↑↑↑↑		512KB	60 61 62 63
1		↑↓↓↑↑↓↑	512KB	64 65 66 67
0	↑↓↓↑↑↑↓		128/640KB	60 61 62 63 64 65 66 67
0	↑↓↓↑↑↑↑		512KB/2MB	60 61 62 63 64 65 66 67
1	↑↓↑↓↑↑↑		512KB/2MB	60 61 62 63 64 65 66 67
2	↑↓↑↓↑↑↑		512KB/2MB	60 61 62 63 64 65 66 67
3	↑↓↑↑↓↑↑		512KB/2MB	60 61 62 63 64 65 66 67

Figure 17.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

077
Go to Step 140 in this MAP.

078
Go to Step 106 in this MAP.

079
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 18 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↓↑↓↑↑↑		512KB	68 69 6A 6B
1		↑↓↓↑↓↓↑↓	512KB	6C 6D 6E 6F
0	↑↓↓↑↓↑↑↓		128/640KB	68 69 6A 6B 6C 6D 6E 6F
0	↑↓↓↑↓↑↑↑		512KB/2MB	68 69 6A 6B 6C 6D 6E 6F
1	↑↓↓↑↑↑↑↑		512KB/2MB	68 69 6A 6B 6C 6D 6E 6F
2	↑↓↑↓↓↑↑↑		512KB/2MB	68 69 6A 6B 6C 6D 6E 6F
3	↑↓↑↓↑↑↑↑		512KB/2MB	68 69 6A 6B 6C 6D 6E 6F

Figure 18.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

080
Go to Step 140 in this MAP.

081
Go to Step 106 in this MAP.

082
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 19 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↓↓↑↑↑↑		512KB	70 71 72 73
1		↑↓↓↓↑↓↑↓	512KB	74 75 76 77
0	↑↓↓↓↑↑↑↓		128/640KB	70 71 72 73 74 75 76 77
0	↑↓↓↓↑↑↑↑		512KB/2MB	70 71 72 73 74 75 76 77
1	↑↓↓↑↓↑↑↑		512KB/2MB	70 71 72 73 74 75 76 77
2	↑↓↓↑↑↑↑↑		512KB/2MB	70 71 72 73 74 75 76 77
3	↑↓↑↓↓↑↑↑		512KB/2MB	70 71 72 73 74 75 76 77

Figure 19.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

083
Go to Step 140 in this MAP.

084
Go to Step 106 in this MAP.

085
(From Step 019 in this MAP)

- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 20 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↑↓↓↓↓↑↑↑		512KB	78 79 7A 7B
1		↑↓↓↓↓↑↓	512KB	7C 7D 7E 7F
0	↑↓↓↓↓↑↑↓		128/640KB	78 79 7A 7B 7C 7D 7E 7F
0	↑↓↓↓↓↑↑↑		512KB/2MB	78 79 7A 7B 7C 7D 7E 7F
1	↑↓↓↓↑↑↑↑		512KB/2MB	78 79 7A 7B 7C 7D 7E 7F
2	↑↓↓↑↓↑↑↑		512KB/2MB	78 79 7A 7B 7C 7D 7E 7F
3	↑↓↓↑↑↑↑↑		512KB/2MB	78 79 7A 7B 7C 7D 7E 7F

Figure 20.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

086
Go to Step 140 in this MAP.

087
Go to Step 106 in this MAP.

088
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 21 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↑↑↑↑↑↑		512KB	80 81 82 83
1		↓↑↑↑↑↓↑↓	512KB	84 85 86 87
0	↓↑↑↑↑↑↑↓		128/640KB	80 81 82 83 84 85 86 87
0	↓↑↑↑↑↑↑↑		512KB/2MB	80 81 82 83 84 85 86 87
1	↑↓↓↓↓↑↑↑		512KB/2MB	80 81 82 83 84 85 86 87
2	↑↓↓↓↑↑↑↑		512KB/2MB	80 81 82 83 84 85 86 87
3	↑↓↓↑↓↑↑↑		512KB/2MB	80 81 82 83 84 85 86 87

Figure 21.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

089
Go to Step 140 in this MAP.

090
Go to Step 106 in this MAP.

091
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 22 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↑↑↓↑↑↑		512KB	88 89 8A 8B
1		↓↑↑↑↓↑↓↑	512KB	8C 8D 8E 8F
0	↓↑↑↑↓↑↑↓		128/640KB	88 89 8A 8B 8C 8D 8E 8F
0	↓↑↑↑↓↑↑↑		512KB/2MB	88 89 8A 8B 8C 8D 8E 8F
1	↓↑↑↑↑↑↑↑		512KB/2MB	88 89 8A 8B 8C 8D 8E 8F
2	↑↓↓↓↓↑↑↑		512KB/2MB	88 89 8A 8B 8C 8D 8E 8F
3	↑↓↓↓↑↑↑↑		512KB/2MB	88 89 8A 8B 8C 8D 8E 8F

Figure 22.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **093**
Go to Step 106 in this MAP.

No — **092**
Go to Step 140 in this MAP.

094
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 23 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↑↓↑↑↑↑		512KB	90 91 92 93
1		↓↑↑↓↑↓↑↓	512KB	94 95 96 97
0	↓↑↑↓↑↑↑↓		128/640KB	90 91 92 93 94 95 96 97
0	↓↑↑↓↑↑↑↑		512KB/2MB	90 91 92 93 94 95 96 97
1	↓↑↑↑↓↑↑↑		512KB/2MB	90 91 92 93 94 95 96 97
2	↓↑↑↑↑↑↑↑		512KB/2MB	90 91 92 93 94 95 96 97
3	↑↓↓↓↓↑↑↑		512KB/2MB	90 91 92 93 94 95 96 97

Figure 23.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

095
Go to Step 140 in this MAP.

096
Go to Step 106 in this MAP.

097
(From Step 019 in this MAP)

- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 24 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↑↓↓↑↑↑		512KB	98 99 9A 9B
1		↓↑↑↓↓↑↓	512KB	9C 9D 9E 9F
0	↓↑↑↓↓↑↑↓		128/640KB	98 99 9A 9B 9C 9D 9E 9F
0	↓↑↑↓↓↑↑↑		512KB/2MB	98 99 9A 9B 9C 9D 9E 9F
1	↓↑↑↓↑↑↑↑		512KB/2MB	98 99 9A 9B 9C 9D 9E 9F
2	↓↑↑↑↓↑↑↑		512KB/2MB	98 99 9A 9B 9C 9D 9E 9F
3	↓↑↑↑↑↑↑↑		512KB/2MB	98 99 9A 9B 9C 9D 9E 9F

Figure 24.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

098
Go to Step 140 in this MAP.

099
Go to Step 106 in this MAP.

100
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 25 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↓↑↑↑↑↑		512KB	A0 A1 A2 A3
1		↓↑↓↑↑↓↑↓	512KB	A4 A5 A6 A7
0	↓↑↓↑↑↑↑↓		128/640KB	A0 A1 A2 A3 A4 A5 A6 A7
0	↓↑↓↑↑↑↑↑		512KB/2MB	A0 A1 A2 A3 A4 A5 A6 A7
1	↓↑↑↓↓↑↑↑		512KB/2MB	A0 A1 A2 A3 A4 A5 A6 A7
2	↓↑↑↓↑↑↑↑		512KB/2MB	A0 A1 A2 A3 A4 A5 A6 A7
3	↓↑↑↑↓↑↑↑		512KB/2MB	A0 A1 A2 A3 A4 A5 A6 A7

Figure 25.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes **No**

101
Go to Step 140 in this MAP.

102
Go to Step 106 in this MAP.

103
(From Step 019 in this MAP)
- Locate the failing memory expansion option and bank by comparing the switch settings in Figure 26 with the memory options installed.

Failing Bank	Switch Setting		Memory Expansion Option	1st Two Digits of Error Code
	Bank 0 12345678	Bank 1 12345678		
0	↓↑↓↑↓↑↑↑		512KB	A8 A9 AA AB
1		↓↑↓↑↓↓↑↓	512KB	AC AD AE AF
0	↓↑↓↑↓↑↑↓		128/640KB	A8 A9 AA AB AC AD AE AF
0	↓↑↓↑↓↑↑↑		512KB/2MB	A8 A9 AA AB AC AD AE AF
1	↓↑↓↑↑↑↑↑		512KB/2MB	A8 A9 AA AB AC AD AE AF
2	↓↑↑↓↓↑↑↑		512KB/2MB	A8 A9 AA AB AC AD AE AF
3	↓↑↑↓↑↑↑↑		512KB/2MB	A8 A9 AA AB AC AD AE AF

Figure 26.

DID YOU FIND THE FAILING MEMORY EXPANSION OPTION AND BANK?

Yes — **No**

104
Go to Step 140 in this MAP.

105
Go to Step 106 in this MAP.

106
(From Steps 048, 051, 054, 057, 060, 063, 066, 069, 072, 075, 078, 081, 084, 087, 090, 093, 096, 099, 102, and 105 in this MAP)

106 (continued)
IS THE FAILING OPTION A 128/640KB MEMORY EXPANSION OPTION?

Yes **No**

107
Go to Step 113 in this MAP.

108
The first two characters of your error code (**XX**XXXX XXXX) indicate the failing memory module is located in bank 0. The last four characters (XXXXXX **XXXX**) indicate the failing memory module.

- Refer to Figure 27 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

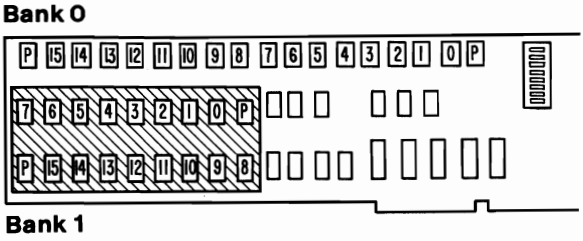


Figure 27. 128/640 Memory Expansion Option

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

109
Replace the 128KB/640KB memory expansion option and memory modules.

(Step 110 continues)

110

- Replace the failing 256KB memory module.

  Note: If the last four characters of your error code are 0000, replace both Parity (P) modules in the failing bank.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?

Yes **No**

111
Replace the 128KB/640KB memory expansion option and memory modules.

112
Your system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

113
(From Step 107 in this MAP)

IS THE FAILING OPTION A 512KB MEMORY EXPANSION OPTION?

Yes **No**

114
Go to Step 120 in this MAP.

115
The first two characters of your error code (**XX**XXXX XXXX) indicate the bank with the failing memory module. The last four characters (XXXXXX **XXXX**) indicate the failing memory module.

- Refer to Figure 28 on page 0200-34 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

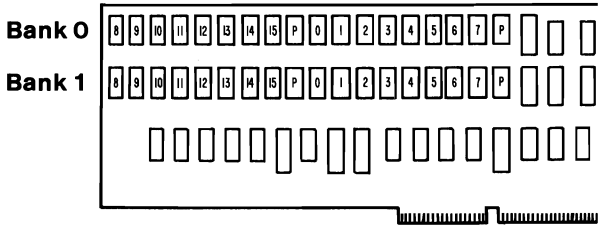


Figure 28. 512KB Memory Expansion Option

DID YOU FIND THE FAILING MEMORY MODULE?

Yes **No**

116
Replace the 512KB Memory Expansion Option.

117

- Replace the failing 128KB memory module.

  Note: If the last four characters of your error code are 0000, replace both Parity (P) modules.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?

Yes **No**

118
Replace the 512KB Memory Expansion Option.

119
(Step 119 continues)

119 (continued)
Your system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

120
(From Step 114 in this MAP)
IS A 512KB/2MB MEMORY EXPANSION OPTION INSTALLED?

Yes **No**

121
Go to Step 140 in this MAP.

122
The first two characters of the error code (**XX**XXXX XXXX) indicate the bank with the failing memory module. The last four characters (XXXXXX **XXXX**) indicate the failing memory module.

- Refer to Figure 29 and find the failing memory module identified by the error code.

Last Four Characters of Error Code
0000 = P
0001 = 0
0002 = 1
0004 = 2
0008 = 3
0010 = 4
0020 = 5
0040 = 6
0080 = 7
0100 = 8
0200 = 9
0400 = 10
0800 = 11
1000 = 12
2000 = 13
4000 = 14
8000 = 15

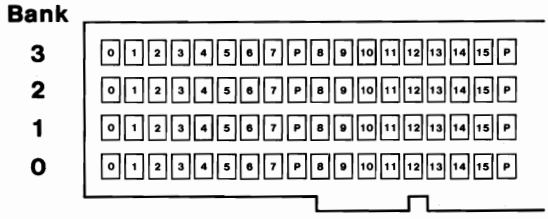


Figure 29. 512/2M Memory Expansion Option

(Step 122 continues)

122 (continued)
DID YOU FIND THE FAILING MEMORY MODULE?
Yes **No**

123
Replace the 512KB/2MB memory expansion option and memory modules.

124
- Replace the failing memory module on the Memory Expansion Option.

  Note: If the last four characters of your error code are 0000, replace both Parity (P) modules.

- Repeat the Memory tests.

DID THE TESTS RUN WITHOUT AN ERROR?
Yes **No**

125
Replace the 512KB/2MB memory expansion option and memory modules.

126
Your system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

127
(From Step 018 in this MAP)

DO YOU HAVE A PARITY-CHECK ERROR MESSAGE?
Yes **No**

128
Your system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

(Step 129 continues)

129
(From Step 006 in this MAP)

IS A FIVE-CHARACTER ERROR CODE DISPLAYED UNDER THE PARITY CHECK MESSAGE?

Yes **No**

130
Go to Step 134 in this MAP.

131
IS THE FIRST CHARACTER OF THE ERROR CODE 0, 1. 2. 3, 4, 5, 6, OR 7?

Yes **No**

132
Go to Step 134 in this MAP.

133

- Find the first character of the error code (XXXXX) in Figure 30 on page 0200-38 and replace the memory modules indicated.

Repeat the Memory tests. If the same parity check error code occurs, replace the system board.

First Character of Parity Error	Type 1 System Board	Type 2 or 3 System Board
0, 1, 2, 3	18 Memory Modules in System Board Bank 0	All 18 System Board Memory Modules
4, 5, 6, or 7	18 Memory Modules in System Board Bank 1	All 18 System Board Memory Modules

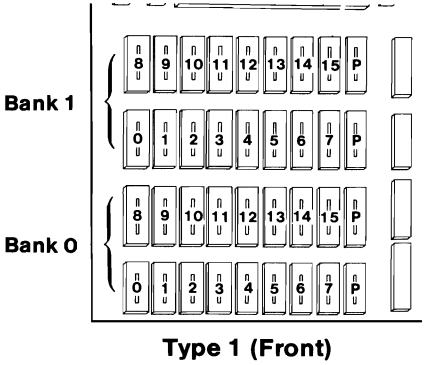


Figure 30. Parity-Check Error

134
(From Steps 130 and 132 in this MAP)

Parity Checks
Parity Check 1 indicates a system board parity error. Parity Check 2 indicates a memory expansion option parity error. To isolate a parity failure:

- Power off the system.
- Remove all installed memory expansion options.
- Power on the system.
- You may receive a 16X or 20X error message. Ignore the message and run the Setup program to ensure the memory size is correctly set.
- Repeat the Memory tests.

(Step 134 continues)

134 (continued)
DID YOU RECEIVE A PARITY CHECK ERROR?
Yes **No**

135
Go to Step 137 in this MAP.

136
Replace all memory modules on the system board and repeat the Memory tests. If the same parity check error code occurs, replace the system board.

137
(From Steps 135 and 138 in this MAP) .
- Power off the system.
- Install one Memory Expansion Option. Ensure any switches are set correctly.

  Note: If any memory expansion option is not fully populated, install it last.

- Power on the system.
- You may receive a 16X or 20X error message. Ignore the message and run the Setup program to ensure the memory size is correctly set.
- Repeat the Memory tests.

DID YOU RECEIVE A PARITY CHECK ERROR?
Yes **No**

138
Repeat the procedure in Step 137 in this MAP for each Memory Expansion Option. When all memory expansion options have been installed go to Step 146 in this MAP.

139
Replace all memory modules on the last option installed. If the same parity check error code occurs, replace the Memory Expansion Option.

140
(From Steps 040, 047, 050, 053, 056, 059, 062, 065, 068, 071, 074, 077, 080, 083, 086, 089, 092, 095, 098, 101, 104, and 121 in this MAP)

Memory Errors
- Power off the system.
- Remove all installed Memory Expansion Option.
- Power on the system.
- You may receive a 16X and a 20X error message. Ignore the message and run the Setup program to ensure the memory size is correctly set.
- Repeat the Memory tests.

DID YOU RECEIVE A MEMORY ERROR MESSAGE?
Yes **No**

141
Go to Step 143 in this MAP.

142
Go to Step 019 in this MAP and continue. If you cannot find a failing memory module, replace the system board.

143
(From Steps 141 and 144 in this MAP)
- Power off the system.
- Install one Memory Expansion Option. Ensure any switches are set correctly.

  Note: If any memory expansion option is not fully populated, install it last.

- Power on the system.
- You may receive a 16X and a 20X error message. Ignore the message and run the Setup program to ensure the memory size is correctly set.
- Repeat the Memory tests.

(Step 143 continues)

143 (continued)
DID YOU RECEIVE A MEMORY ERROR MESSAGE?
Yes **No**

144
Repeat the procedure in Step 143 in this MAP for each Memory Expansion Option. When all memory expansion options have been installed go to Step 146 in this MAP.

145
Replace all memory modules on the last memory expansion option installed. If the same error code occurs, replace the Memory Expansion Option.

146
(From Steps 138 and 144 in this MAP)
You have successfully completed the Advanced Diagnostic tests. If you suspect an intermittent problem, start an error log. If you need instructions, refer to the Reference manual.

Notes: