JUMPERS AND SWITCH SETTINGS

Notes:

System Setup

The Setup program is on the Advanced Diagnostics diskette. You need to know what options are installed in the system unit to run the Setup program.

1. Make a list of the option adapters installed in the system.

2. Determine the type of drives installed.

    • Fixed Disk Drive: An identification label is on the front of the drive.

    • Diskette Drive: The bezel of a double-sided (360K) diskette drive has an asterisk; the bezel of a high-capacity (1.2M) diskette drive is not marked.

3. Ensure that all jumpers and switches are set correctly.

    Note: If you receive an error code, troubleshoot any error indications other than 16X first. If the only error code you receive is 16X, and you cannot correct the Setup program using the instructions on the following page, go to "MAP 0000: Start (AT)."

System Setup

1. Insert the Advanced Diagnostics diskette into diskette drive A.

2. Power on the system.

3. When the Advanced Diagnostics menu appears, select option **4** **(SETUP)** and verify that the options are correctly set.

   The Setup program will prompt you for the following information:

   Time   Set or change the time.

   Date   Set or change the date.

   Diskette Drives   Select the number and type (high capacity or double sided) installed.

   Fixed Disk Drives   Select the number and type of drives installed.

   Memory   Select the amount of base and expansion memory installed.

   Display   Set the primary display if two display adapters are installed. Select the mode (40 or 80 column) if a color display is installed.

Option Compatibility

Certain option adapters conflict with each other when used in the same system.

1. The following adapters should not be installed together in the system unit:

    *   Synchronous Data Link Control (SDLC) Adapter.

    *   Alternate Binary Synchronous Communications (Alt BSC) Adapter.

2. Only one 128KB Memory Expansion Option **or** one 128KB/640KB Memory Expansion Option can be installed in the system.

BIOS ROM Identification

To determine the date of the BIOS ROM module, run the following BASIC program. Type the program exactly as shown.

```
10 DEF SEG=&HF000
20 FOR X=&HFFF5 TO &HFFFF
30 PRINT CHR$(PEEK(X));
40 NEXT
RUN
```

The date that is displayed is the date of your BIOS ROM module.

Terminating Resistors and Switches

Diskette Drive

A diskette drive may have a terminating resistor or terminating switch.

- **Terminating Resistor** - A terminating resistor **must** be installed in diskette drive A. Diskette drive B should not have a terminating resistor installed.
- **Terminating Switch** - If a diskette drive is equipped with a terminating switch instead of the terminating resistor, set all switches on diskette drive A to the On position. Set all switches on diskette drive B to the Off position.

   Note: The terminating resistor may appear in a different location on the drive. If so, an identifying label will be attached to the terminating resistor.
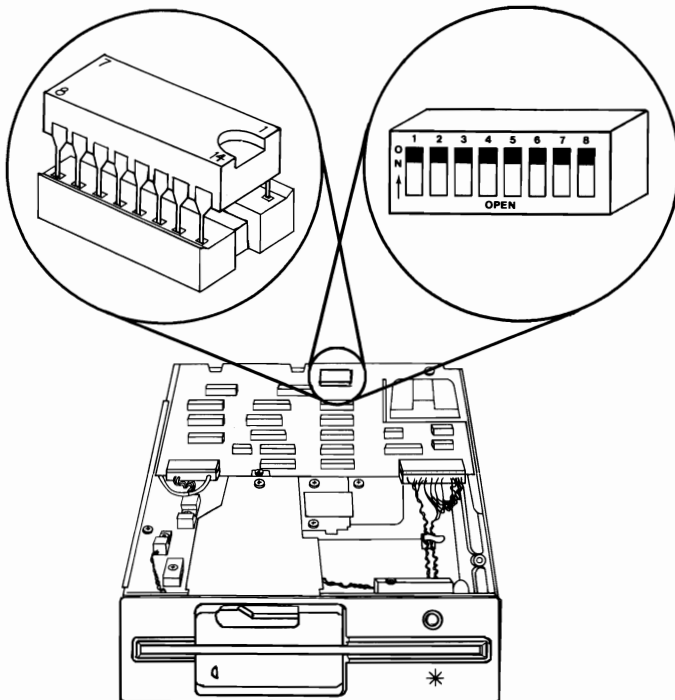
Fixed Disk Drive

- The terminating resistor must be installed on fixed disk drive C.

- In a system unit with two fixed disk drives, remove the terminating resistor from fixed disk drive D.
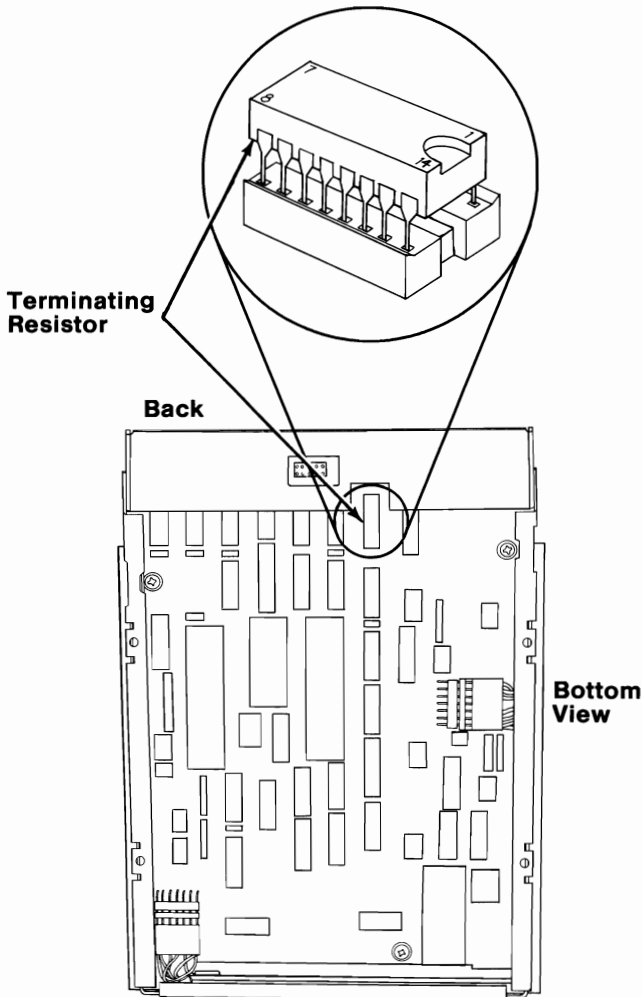
  Note: The terminating resistor may appear in a different location on the drive. If so, an identifying label will be attached to the terminating resistor.

Terminating Resistor

Back

Bottom View

Power Supply Voltage Selector Switch

The voltage selector switch is located at the rear of the system unit power supply. It must be set for the voltage present at the electrical outlet.

Switch Position	Voltage Range
115 Vac	110 to 125 Vac
230 Vac	200 to 240 Vac
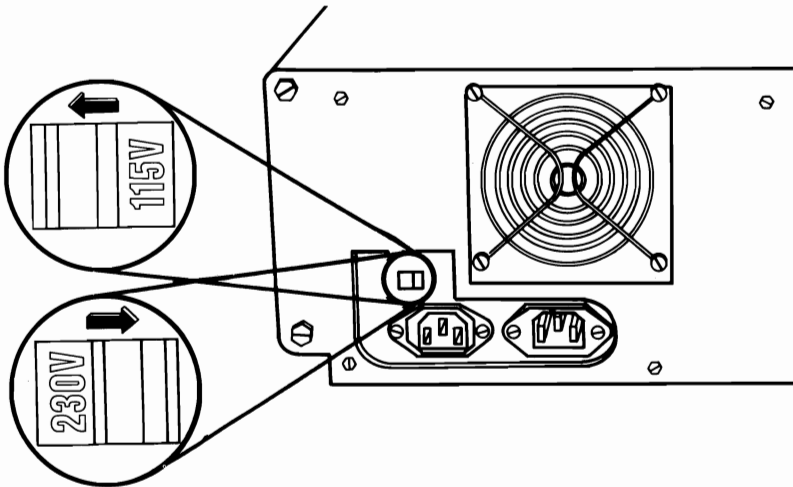
Using the Switch Charts

The following legend applies to the charts in this section.

Symbol	Meaning
★	Not Used by this Application
↑	On/Closed Position of a Switch
↓	Off/Open Position of a Switch
N/A	Not Allowed or Not Applicable

Note: For some options, the customer must supply information for correct setting of jumpers or switches.

To set a rocker switch, press the rocker down to the desired position; to set a slide switch, slide the lug of the switch to the desired position.
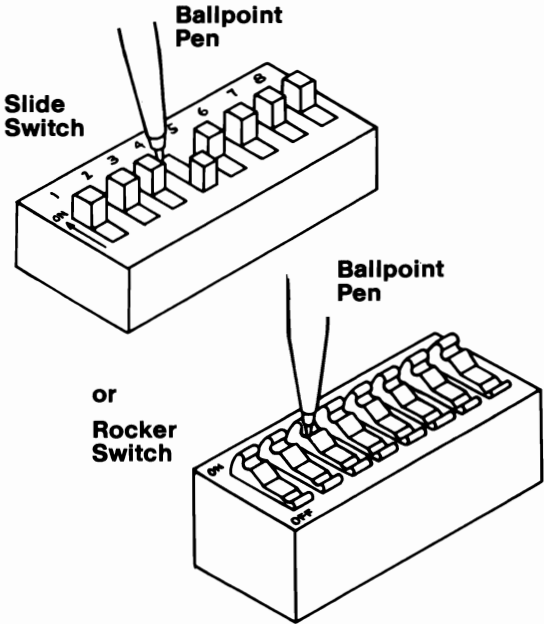
System-Board Display Switch

If your primary display adapter is a:

- Monochrome Display and Printer Adapter - Set the display switch to the rear of the system.

- Color display adapter - Set the display switch to the front of the system.

Monochrome Display   **Color Display**

Primary Display Switch

Expansion Slots

Or   Primary Display Switch

System Board

Front
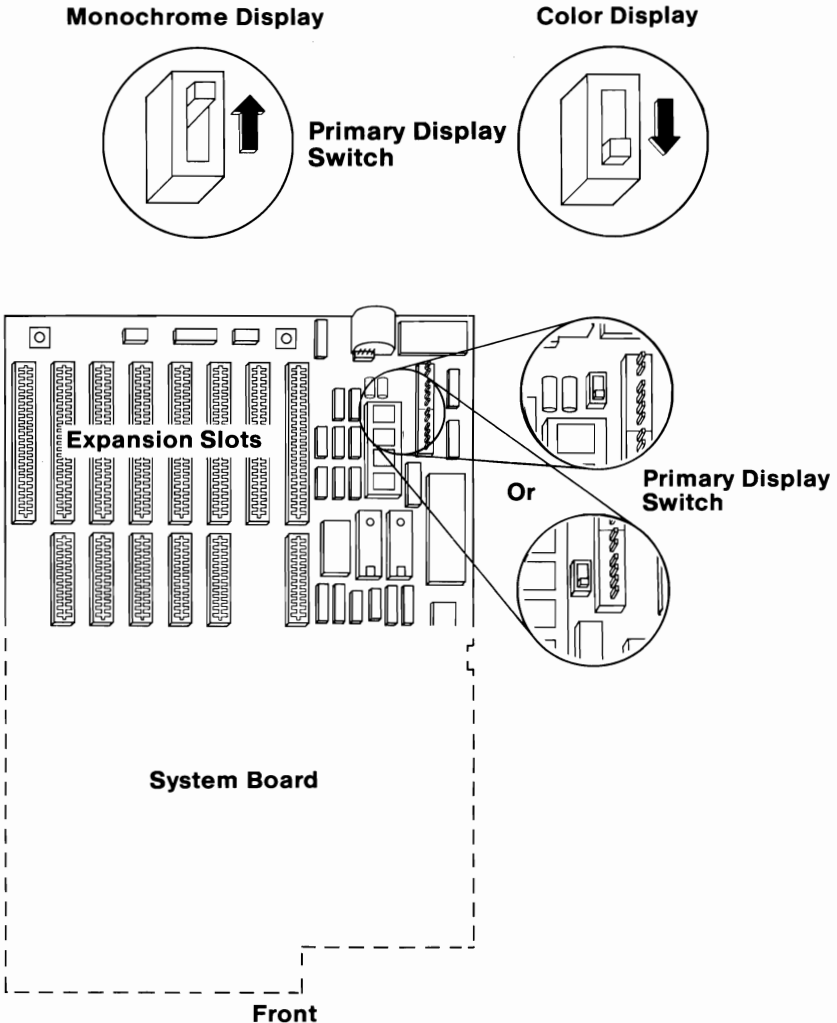
Memory Expansion Options

Base Memory

If you have a 128KB/640KB memory option with *only* 128K installed, set the switches as shown below.

128KB/640KB w/128K Installed
12345678
↑↑↑↓↑↓↑↓

The 128KB Memory Expansion Option has no switch settings.

Expansion Memory

If you are installing a new memory expansion option refer to the "Memory Switches Quick Reference" in this section. To check installed memory expansion option switch settings continue with the following procedure.

One installed memory expansion option must have a switch setting that matches switch Set 1. Start with Set 1 and find the memory expansion option with switch settings matching one of the switch settings provided. If you have additional memory options to check, answer the question below the switch settings to determine which Set to go to next.

> **Note:** If at any time you are unable to match the switch settings, you have an option with the switches improperly set. Set the switches on one of the options you have not already checked to match the switch settings provided, then answer the question to continue.

When each memory option matches a switch setting, you have finished the procedure.

Note: A fully populated 128KB/640KB Memory Expansion Option has 128K of base memory and 512K of expansion memory. Count only the expansion memory when answering the questions.

Set 1

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↑↓↑↑↑↓	↑↑↑↓↑↑↑↑	↑↑↑↓↑↓↑↓	↑↑↑↓↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 2.

2048K Go to Set 5.

Set 2

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↑↓↓↑↑↓	↑↑↑↓↓↑↑↑	↑↑↑↓↓↓↑↓	↑↑↑↓↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 3.

2048K Go to Set 6.

Set 3

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↓↑↑↑↑↓	↑↑↓↑↑↑↑↑	↑↑↓↑↑↓↑↓	↑↑↓↑↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 4.

2048K Go to Set 7.

Set 4

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↓↑↓↑↑↓	↑↑↓↑↓↑↑↑	↑↑↓↑↓↓↑↓	↑↑↓↑↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 5.

2048K Go to Set 8.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↓↓↑↑↑↓	↑↑↓↓↑↑↑↑	↑↑↓↓↑↓↑↓	↑↑↓↓↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 6.

2048K Go to Set 9.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↑↓↓↓↑↑↓	↑↑↓↓↓↑↑↑	↑↑↓↓↓↓↑↓	↑↑↓↓↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 7.

2048K Go to Set 10.

Set 7

Find the memory option that matches one of the switch settings below.

| 128KB/640KB | 512KB | | 512KB/2MB |
	Bank 0	Bank 1	
12345678	12345678	12345678	12345678
↑↓↑↑↑↑↑↓	↑↓↑↑↑↑↑↑	↑↓↑↑↑↓↑↓	↑↓↑↑↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 8.

2048K Go to Set 11.

Set 8

Find the memory option that matches one of the switch settings below.

| 128KB/640KB | 512KB | | 512KB/2MB |
	Bank 0	Bank 1	
12345678	12345678	12345678	12345678
↑↓↑↑↓↑↑↓	↑↓↑↑↓↑↑↑	↑↓↑↑↓↓↑↓	↑↓↑↑↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 9.

2048K Go to Set 12.

Set 9

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↑↓↑↑↑↓	↑↓↑↓↑↑↑↑	↑↓↑↓↑↓↑↓	↑↓↑↓↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 10.

2048K Go to Set 13.

Set 10

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↑↓↓↑↑↓	↑↓↑↓↓↑↑↑	↑↓↑↓↓↓↑↓	↑↓↑↓↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 11.

2048K Go to Set 14.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↓↑↑↑↑↓	↑↓↓↑↑↑↑↑	↑↓↓↑↑↓↑↓	↑↓↓↑↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 12.

2048K Go to Set 15.

Set 12

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↓↑↓↑↑↓	↑↓↓↑↓↑↑↑	↑↓↓↑↓↓↑↓	↑↓↓↑↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 13.

2048K Go to Set 16.

Set 13

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↓↓↑↑↑↓	↑↓↓↓↑↑↑↑	↑↓↓↓↑↓↑↓	↑↓↓↓↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 14.

2048K Go to Set 17.

Set 14

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↑↓↓↓↓↑↑↓	↑↓↓↓↓↑↑↑	↑↓↓↓↓↓↑↓	↑↓↓↓↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 15.

2048K Go to Set 18.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↑↑↑↑↑↓	↓↑↑↑↑↑↑↑	↓↑↑↑↑↓↑↓	↓↑↑↑↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 16.

2048K Go to Set 19.

Set 16

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↑↑↓↑↑↓	↓↑↑↑↓↑↑↑	↓↑↑↑↓↓↑↓	↓↑↑↑↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 17.

2048K Go to Set 20.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↑↓↑↑↑↓	↓↑↑↓↑↑↑↑	↓↑↑↓↑↓↑↓	↓↑↑↓↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 18.

2048K Go to Set 21.

Set 18

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↑↓↓↑↑↓	↓↑↑↓↓↑↑↑	↓↑↑↓↓↓↑↓	↓↑↑↓↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 19.

2048K Additional memory expansion options cannot be installed.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↓↑↑↑↑↓	↓↑↓↑↑↑↑↑	↓↑↓↑↑↓↑↓	↓↑↓↑↑↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 20.

2048K Additional memory expansion options cannot be installed.

Find the memory option that matches one of the switch settings below.

128KB/640KB	512KB Bank 0	Bank 1	512KB/2MB
12345678	12345678	12345678	12345678
↓↑↓↑↓↑↑↓	↓↑↓↑↓↑↑↑	↓↑↓↑↓↓↑↓	↓↑↓↑↓↑↑↑

How much expansion memory is installed on this option?

512K Go to Set 21.

2048K Additional memory expansion options cannot be installed.

Set 21

Find the memory option that matches one of the switch settings below.

| 128KB/640KB	512KB		512KB/2MB
	Bank 0	Bank 1	
12345678	12345678	12345678	12345678
↓↑↓↓↑↑↑↓	↓↑↓↓↑↑↑↑	↓↑↓↓↑↓↑↓	↓↑↓↓↑↑↑↑

Additional memory expansion options cannot be installed.

Memory Switch Quick Reference

Use the following figure when installing a new memory expansion option. Any memory expansion options currently installed in the system must be functioning and have the switches set properly.

Total Amount of Memory Currently Installed	Set Switches According to:
512 or 640	Set 1
1024 or 1152	Set 2
1536 or 1664	Set 3
2048 or 2176	Set 4
2560 or 2688	Set 5
3072 or 3200	Set 6
3584 or 3712	Set 7
4096 or 4224	Set 8
4608 or 4736	Set 9
5120 or 5248	Set 10
5632 or 5760	Set 11
6144 or 6272	Set 12
6656 or 6784	Set 13
7168 or 7296	Set 14
7680 or 7808	Set 15
8192 or 8320	Set 16
8704 or 8832	Set 17
9216 or 9344	Set 18
9728 or 9956	Set 19
10240 or 10368	Set 20
10752 or 10880	Set 21

Cluster Adapter

Switch Block 1

Switch Block 2

Jumper Required

(Top) IRQ 7
(Bottom) IRQ 3
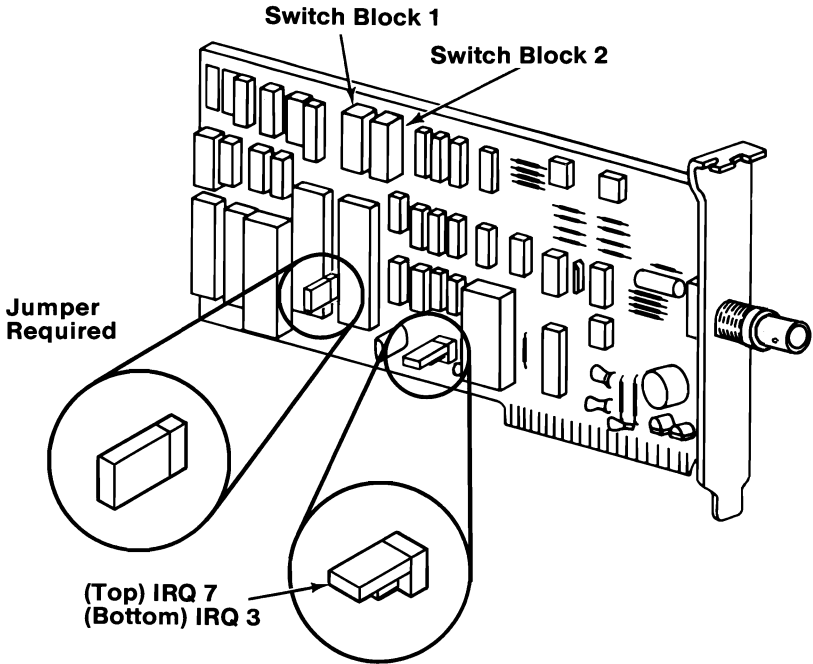
Station Address

Station Address	Switch Block 1 12345678		Station Address	Switch Block 1 12345678		Station Address	Switch Block 1 12345678
0	↓↓↓↓↓↓↓↓*		6	↓↑↑↓↓↓↓↓*		12	↓↓↑↑↓↓↓↓*
1	↑↓↓↓↓↓↓↓*		7	↑↑↑↓↓↓↓↓*		13	↑↓↑↑↓↓↓↓*
2	↓↑↓↓↓↓↓↓*		8	↓↓↓↑↓↓↓↓*		14	↓↑↑↑↓↓↓↓*
3	↑↑↓↓↓↓↓↓*		9	↑↓↓↑↓↓↓↓*		15	↑↑↑↑↓↓↓↓*
4	↓↓↑↓↓↓↓↓*		10	↓↑↓↑↓↓↓↓*		16	↓↓↓↓↑↓↓↓*
5	↑↓↑↓↓↓↓↓*		11	↑↑↓↑↓↓↓↓*		17	↑↓↓↓↑↓↓↓*

(Part 1 of 2)

Station Address	Switch Block 1 12345678	Station Address	Switch Block 1 12345678	Station Address	Switch Block 1 12345678
18	↓↑↓↓↑↓↓*	34	↓↑↓↓↓↑↓*	50	↓↑↓↓↑↑↓*
19	↑↑↓↓↑↓↓*	35	↑↑↓↓↓↑↓*	51	↑↑↓↓↑↑↓*
20	↓↓↑↓↑↓↓*	36	↓↓↑↓↓↑↓*	52	↓↓↑↓↑↑↓*
21	↑↓↑↓↑↓↓*	37	↑↓↑↓↓↑↓*	53	↑↓↑↓↑↑↓*
22	↓↑↑↓↑↓↓*	38	↓↑↑↓↓↑↓*	54	↓↑↑↓↑↑↓*
23	↑↑↑↓↑↓↓*	39	↑↑↑↓↓↑↓*	55	↑↑↑↓↑↑↓*
24	↓↓↓↑↑↓↓*	40	↓↓↓↑↓↑↓*	56	↓↓↓↑↑↑↓*
25	↑↓↓↑↑↓↓*	41	↑↓↓↑↓↑↓*	57	↑↓↓↑↑↑↓*
26	↓↑↓↑↑↓↓*	42	↓↑↓↑↓↑↓*	58	↓↑↓↑↑↑↓*
27	↑↑↓↑↑↓↓*	43	↑↑↓↑↓↑↓*	59	↑↑↓↑↑↑↓*
28	↓↓↑↑↑↓↓*	44	↓↓↑↑↓↑↓*	60	↓↓↑↑↑↑↓*
29	↑↓↑↑↑↓↓*	45	↑↓↑↑↓↑↓*	61	↑↓↑↑↑↑↓*
30	↓↑↑↑↑↓↓*	46	↓↑↑↑↓↑↓*	62	↓↑↑↑↑↑↓*
31	↑↑↑↑↑↓↓*	47	↑↑↑↑↓↑↓*	63	↑↑↑↑↑↑↓*
32	↓↓↓↓↓↑↓*	48	↓↓↓↓↑↑↓*		
33	↑↓↓↓↓↑↓*	49	↑↓↓↓↑↑↓*		

(Part 2 of 2)

Notes:

1. Switches 1 through 6 of Switch Block 1 are for station addresses 0 to 63.
2. Position 7 of Switch Block 1 is always set to the Off position.
3. Position 8 of Switch Block 1 is the Remote Initial Program Load (RIPL) switch (see the next figure).

Remote Initial Program Load

When switch 8 is On, the Personal Computer will request a
Remote Initial Program Load (RIPL) from another station in the
Cluster. This delays the POST by 30 seconds. The recommended
setting is Remote IPL Off.

Condition	Switch Block 1 (See Note)
	12345678
Remote IPL On	******↓↑
Remote IPL Off	******↓↓

Note: Position 7 of Switch Block 1 is always set to Off.

Adapter Number

The following figure shows the setting of switches 1 through 4 of
Switch Block 2 for adapters 1 through 4.

Switches 5 through 8 of Switch Block 2 are always set to the Off
position.

Condition	Switch Block 2
	12345678
Select Adapter 1:	↑↓↓↓↓↓↓↓
Select Adapter 2:	↓↑↓↓↓↓↓↓
Select Adapter 3:	↓↓↑↓↓↓↓↓
Select Adapter 4:	↓↓↓↑↓↓↓↓

Note: If only one Cluster Adapter is installed in an IBM
Personal Computer, it must be set as adapter 1. Each
additional adapter must have a different Cluster Adapter
number.

Enhanced Graphics Adapter (EGA)

Warning: Damage to the graphics adapter, the display, or both may result if these jumpers are not in the correct position.

Switches 1, 2, 3, and 4

P3

P1
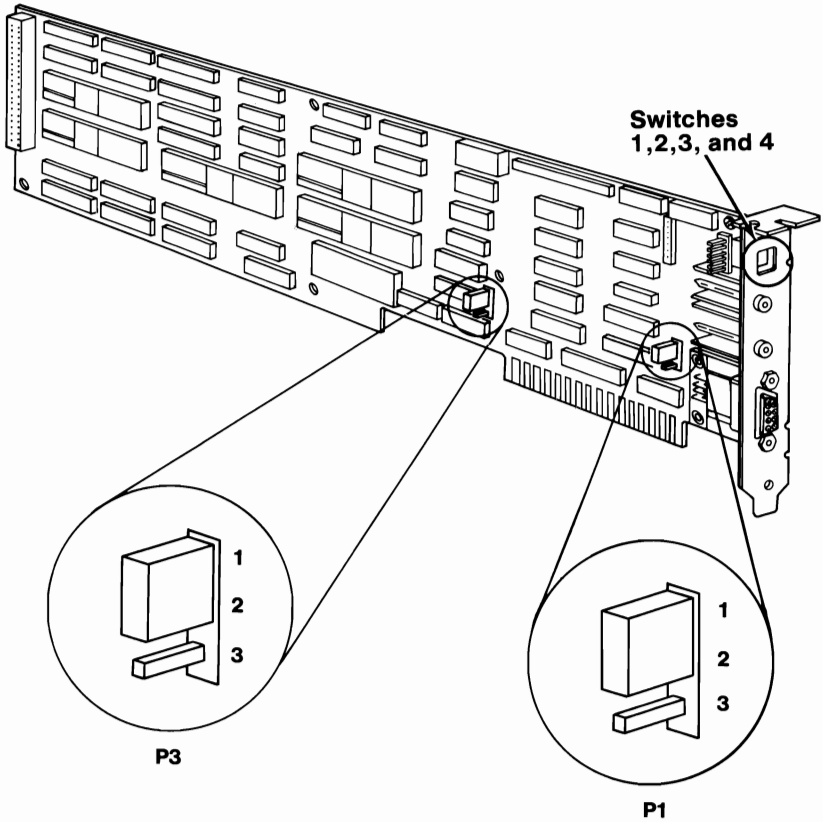
Display	P1	P3
IBM Color Display or IBM Monochrome Display	2 & 3	1 & 2
IBM Enhanced Color Display	1 & 2	1 & 2

If an EGA is the only display adapter installed, or an EGA is installed with a Monochrome Display and Printer Adapter, refer to Figure 1 to set the EGA switches.

If an EGA is installed with a Color/Graphics Monitor Adapter, refer to Figure 2 to set the EGA Switches.

Type of Display Attached to the Enhanced Graphics Adapter	EGA as Primary Switch 1234	EGA as Secondary Switch 1234
No Display	N/A	↓↑↑↑
Monochrome Display	↓↓↑↓	N/A
Color Display (40 X 25 Mode)	↑↓↓↑	↑↑↑↑
Color Display (80 X 25 Mode)	↓↓↓↑	↓↑↑↑
Enhanced Color Display (Normal Color Mode)	↑↑↑↓	↑↓↑↑
Enhanced Color Display (Enhanced Color Mode)	↓↑↑↓	↓↓↑↑

Figure 1

Type of Display Attached to the Color/Graphics Monitor Adapter	EGA as Primary Switch 1234	EGA as Secondary Switch 1234
Color Display (40 X 25 Mode)	↑↓↑↓	↑↑↓↑
Color Display (80 X 25 Mode)	↓↓↑↓	↓↑↓↑
No Display	↓↓↑↓	N/A

Figure 2

Notes:

1. Mode selection can be changed by programming.
2. A maximum of two displays can be attached to the system, one color display and one monochrome display.

PC Network Adapter

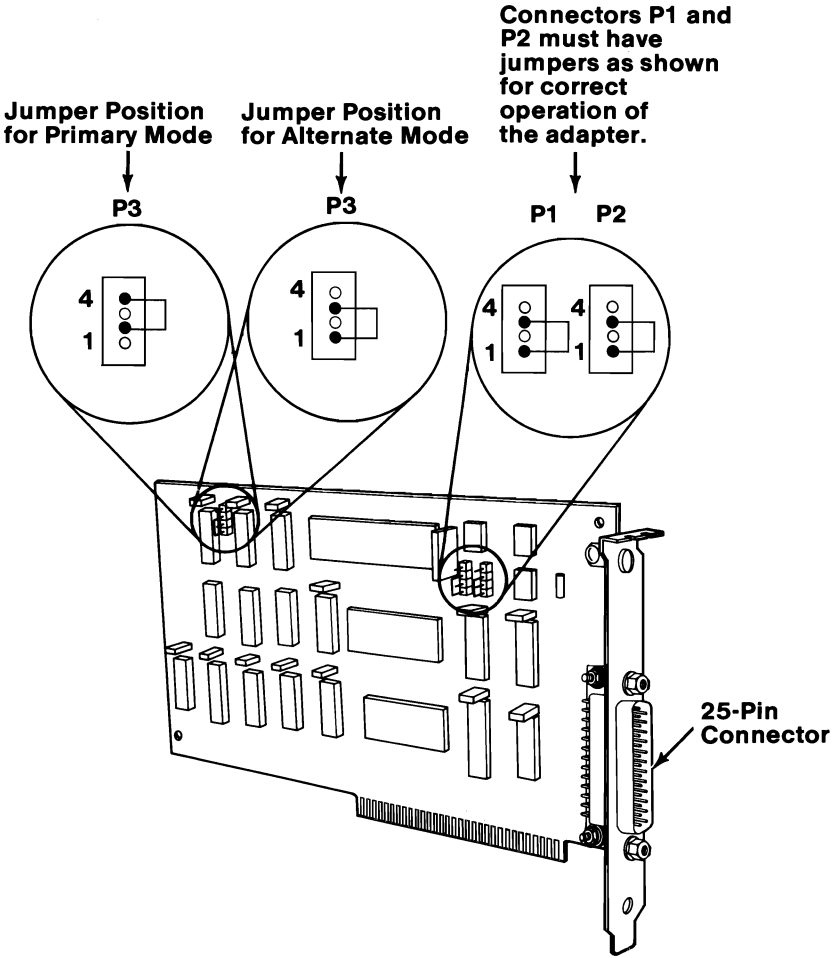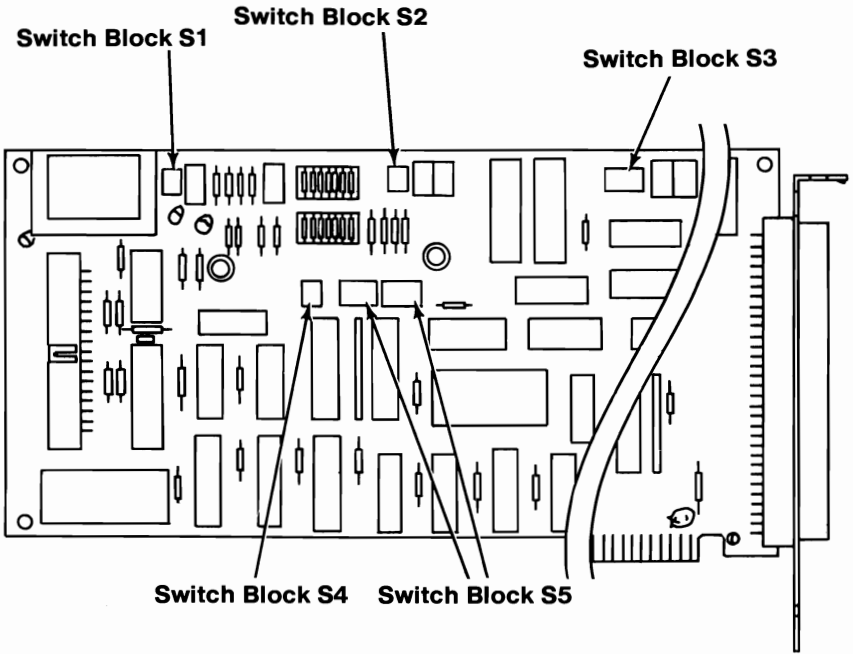| Jumper Position (See figure)	Function
W1	Automatic Remote Program Load (RPL)
W2	Not Used
W3	Sets Adapter to use Interrupt Level 2
W4	Sets Adapter to use Interrupt Level 3
W5 & W7	Sets Adapter as Alternate Adapter
W6	Sets Adapter as Primary Adapter
W8	Enables ROM on Adapter (See Note)
Note: Do not enable the ROM on more than one adapter.	
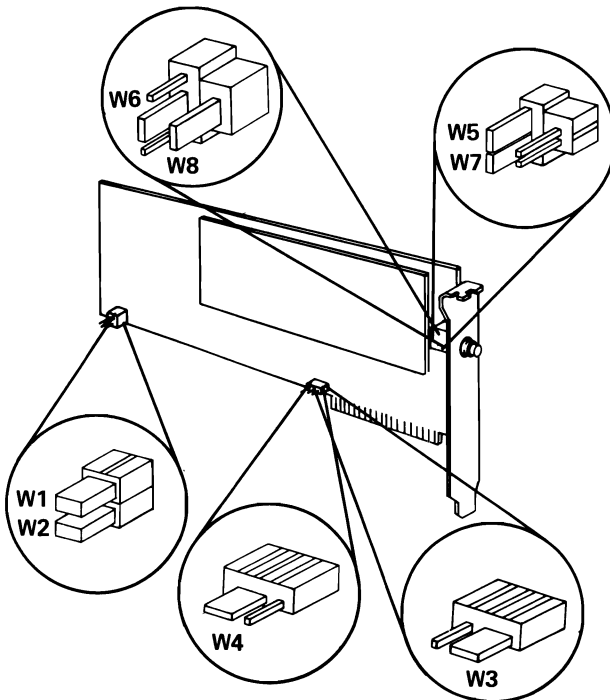
Serial/Parallel Adapter
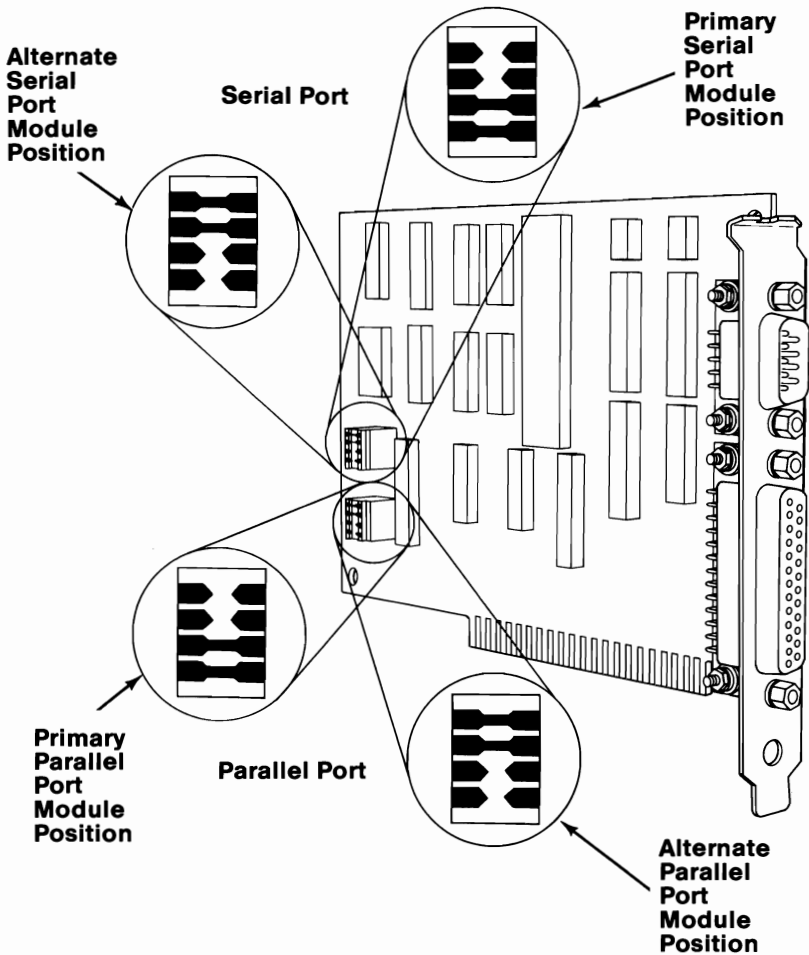
Note: If a Monochrome Display and Printer Adapter is installed in the same system as a Serial/Parallel Adapter, the parallel port of the primary Serial/Parallel Adapter defaults to the alternate mode.

Binary Synchronous Communications (BSC) Adapter

Connectors P1 and P2 must have jumpers as shown for correct operation of the adapter.

Jumper Position for Primary Mode

Jumper Position for Alternate Mode

P3

P3

P1   P2

4

1

4

1

4

1

4

1

25-Pin Connector

Data Acquisition and Control (DAC) Adapter

Analog Output Range

Analog Output Range (D/A) Channel 0	Switch Block S1		Analog Output Range (D/A) Channel 1	Switch Block S2	
	1	2		1	2
− 5 to + 5 Volts	↑	↑	− 5 to + 5 Volts	↑	↑
−10 to +10 Volts	↓	↑	−10 to +10 Volts	↓	↑
0 to +10 Volts	↑	↓	0 to +10 Volts	↑	↓

Note: Only the switch settings shown may be used.

Analog Input Range

Analog Input Range (A/D)	Switch Block S3
	1 2 3 4
− 5 to +5 Volts	↓↓↑↑
−10 to +10 Volts	↓↑↓↑
0 to +10 Volts	↓↓↑↓

Note: Only the switch settings shown may be used.

Adapter Number

Adapter Number	Switch Block S4
	1 2
0	↓↓
1	↑↓
2	↓↑
3	↑↑
Note: Each DAC adapter installed in a system must have its own adapter number.	

Note: Only the switch settings shown may be used.

Interrupt Request (IRQ) Level

IRQ Level	Switch Block S5	
	1 2 3 4 5	1 2 3 4 5
7	↓↓↓↓↓	↓↓↓↑↑
6	↓↓↓↓↓	↓↑↑↓↓
5	↓↓↓↓↑	↑↓↓↓↓
4	↓↓↑↑↓	↓↓↓↓↓
3	↑↑↓↓↓	↓↓↓↓↓
Note: The DAC adapter can share its IRQ level with other adapters that can use shared interrupts.		

Note: Only the switch settings shown may be used.

General Purpose Interface Bus (GPIB) Adapter

Adapter Number Jumpers

Interrupt Acknowledge (INT ACK) Level Jumpers

Interrupt Request (IRQ) Level Jumpers

DMA Channel Jumpers
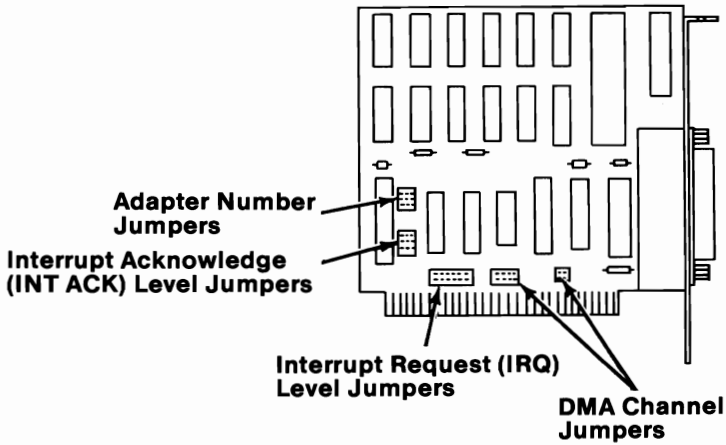
Adapter Number

Each GPIB adapter installed in a system must have its own adapter number.

Adapter Number	Jumper Positions
0	
1	
2	
3	
4	
5	
6	
7	

Interrupt Request (IRQ) Level

The GPIB adapter can share its IRQ level with other adapters that use shared interrupts. All adapters sharing an IRQ level must be installed in the same unit.

Interrupt Request Level	Jumper Positions
7	:::::▮
6	::::▮:
5	:::▮::
4	::▮:::
3	:▮::::
2	▮:::::

Interrupt Acknowledge (INT ACK) Level

The interrupt acknowledge (INT ACK) and interrupt request (IRQ) levels must be the same.

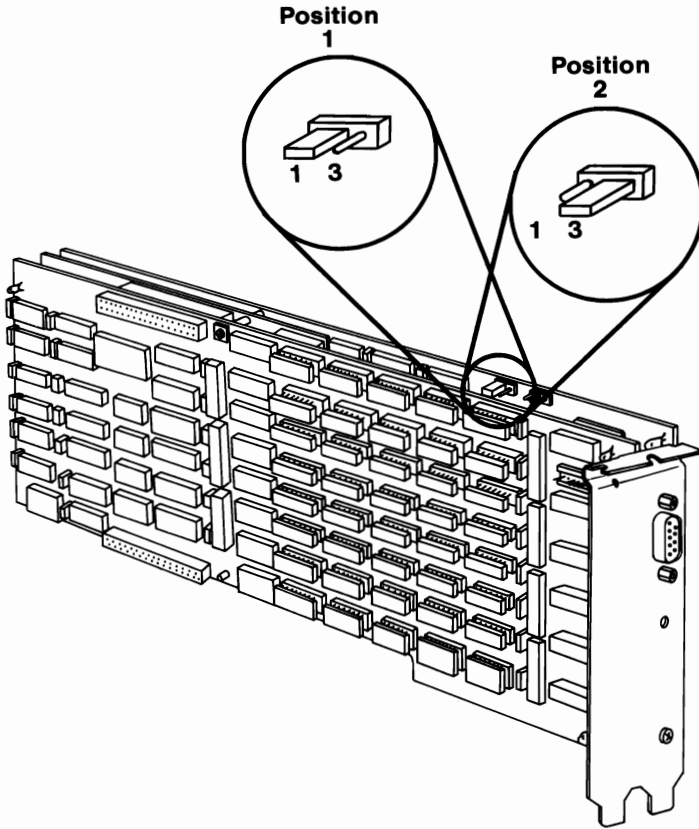| INT ACK level	Jumper positions
7	
6	
5	
4	
3	
2	

Direct-Memory Access (DMA) Channel

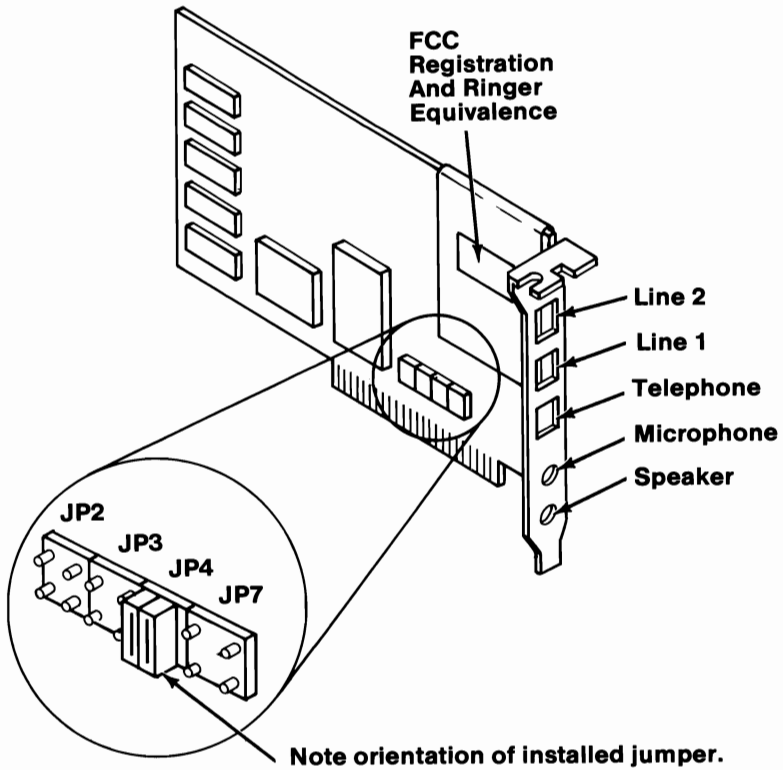| DMA channel	Jumper positions
1	
2	
3	

Professional Graphics Controller

If an IBM Color/Graphics Monitor Adapter is installed in the system, the emulator jumper must be installed in position 2.

When the jumper is installed in position 1, the Professional Graphics Controller can emulate an IBM Color/Graphics Monitor Adapter.

Voice Communications Adapter

FCC Registration And Ringer Equivalence

Line 2
Line 1
Telephone
Microphone
Speaker

JP2
JP3
JP4
JP7

Note orientation of installed jumper.

Note: The jumper block is usually set to position JP4. It must be installed at an interrupt level that does not conflict with other options.

IRQ Level	Jumper Position
2	JP2
3	JP3
4	JP4
7	JP7