



Figure 1. NEC PowerMate SX

Specifications

Processor

- Intel 80386SX 8/16MHz

Memory

- 2MB, expands to 10MB high-spnd./ 16MB low-spnd.

I/O Expansion Slots

- Four 8/16 bit slots
- One 8/16 bit short
- One 8 bit slot

Diskette Drive

- 1.2MB, 5.25" or 1.44MB, 3.5" standard

Integrated Features

- Diskette drive controller
- Enhanced keyboard
- One parallel port
- One RS-232C serial port.

Internal Expansion Bays

- Two 5.25" user accessible bays
- One 3.5" vertical user accessible bay

I/O Architecture (Bus s supported)

- Industry Standard Architecture (ISA)

Power Supply

- 193 Watt

Diagnostics

- Normal Post Diags performed on Power UP of system.
- For Advanced Diags use Test/Diagnostic Utility by NEC.
- Troubleshoot according to errors found during test.

CMOS Access

- QAPlus/FE / Cotrol-Alternate-S

Tools and Software Requirements

- 1/4" Flat bladed screwdriver
- 2 PT Phillips screwdriver
- T-15 Torx screwdriver
- Needle nose pliers
- Diags and formatted blank diskette
- Anti-static wrist strap

Jumper/Switch Settings

System Configuration, Switch 13A

Switch	Setting	Function
1	ON * OFF	Color display installed Monochrome monitor
2	ON OFF *	Turns on Secndry, FD address Turns on Primary , FD address
3	ON * OFF	Turns on diskette controller Turns off diskette controller
4	ON * OFF	COM1 address 3F8H COM2 address 2F8H
5	ON * OFF	Serial port on Serial port off
6	ON * OFF	Parallel port on Parallel port off
7	ON * OFF	Mathcoprocessor socket on Mathcoprocessor socket off
8	OFF *	Not used
9	ON OFF *	Memory area 0 to 512KB Memory area 0 to 640KB
10	OFF *	Not used

* Default

System Configuration, Switch 13C

Switch	Setting	Function
1	ON *	System ID do not change
2	OFF *	System ID do not change
3	OFF *	System ID do not change
4	ON OFF *	Video BIOS shadow RAM off Video BIOS shadow RAM on
5	ON * OFF	Test mode off Test mode on
6	ON * OFF	System BIOS shadow RAM off System BIOS shadow RAM on

* Default

System Board -- Jumper switches

Jumper	Setting	Function
15A1	Released *	Test mode off
	Locked	Test mode on
17F1	Unjumped *	Manufacturing switch off
	Jumped	Manufacturing switch on
17H2	1-2 *	Synchronous mode
	2-3	Asynchronous mode
22E1	1-2 *	500/300/250/150/128 Kbps DTR
	2-3	500/250/125 Kbps -DTR

* Default

System Configuration, G8DZT,G8CDQ HD Controller

Jumper	Setting	Function
W1	Unjumped *	Do not change, reserved
W2	1-2 *	Head select 3
	2-3	Reduced write current
W3	Jumped *	Disabled Caching
	Unjumped	Enable Caching

* Default

System Configuration, G9ZNH HD Controller

Jumper	Setting	Function
W1	1-2 *	Head select 3
	2-3	Reduced write current
W3	1-2 *	Primary address select
	2-3	Secondary address select
W4	Jumped *	Enables drive controller drives
	Unjumped	Disabled drive controller drives
W9	Unjumped *	Enable Caching
	Jumped	Disabled Caching
W10	Unjumped *	Standard configuration

* Default

System Configuration, G8BUT HD Controller

Jumper	Setting	Function
W1	Unjumped *	BIOS ROM/RAM address map
W2	Unjumped *	BIOS ROM/RAM address map
W3	Unjumped *	BIOS ROM/RAM address map
W8	Jumped *	G8AGB (WD1005) mode select
W14	Unjumped *	Sector translation mode select
W15	Unjumped *	Error correction coding select

* Default

APC-H444 Video Controller (Adv. Graphics Plus Bd.)

Jumper	Setting	Function
S6	2 - 3 *	Selects 132 columns
	1 - 2	Selects feature connector
S8	1 - 5 *	Select IRQ051 for mouse
	2 - 6	Select IRQ041 for mouse
	3 - 7	Select IRQ031 for mouse
	4 - 8	Not Used
S9	2 - 3 *	Disables emul. of CGA, MDA, Herz
	1 - 2	Enables emul. of CGA, MDA, Herz.
S10	2 - 3 *	Disables 400 line mode
	1 - 2	Enables 400 line mode **
S13	2 - 3 *	Disables Parallel mouse controller
	1 - 1	Enables Parallel mouse controller

* Default

APC-H444 --Adv. Graphics Plus Bd. (Primary Display) Switch 5 Switch Settings

S5-1	S5-2	S5-3	S5-4	Configurations
On	Off	Off	On	40 x 25 color
Off	Off	Off	On	80 x 25 color
Off *	On *	On *	Off *	Advanced color, High-Res
On	On	On	Off	Advanced color, Emulation
On	Off	On	Off	Mono w/other 40x25 color
Off	Off	On	Off	Mono w/other 80x25 color

* Default

APC-H444 --Adv. Graphics Plus Bd. (Secondary Display) Switch 5 Switch Settings

S5-1	S5-2	S5-3	S5-4	Configurations
On	On	On	On	40 x 25 color
Off	On	On	On	80 x 25 color
Off *	Off *	On *	On *	Advanced color, High-Res
On	Off	On	On	Advanced color, Emulation
On	On	Off	On	Mono w/other 40x25 color
Off	On	Off	On	Mono w/other 80x25 color

* Default

System Configuration, VGB (APC-H445) Video Controller

Jumper	Setting	Function
S1	1 - 2 *	High Res - 132 Column
	2 - 3	Feature Connector
S2	1 - 2 *	16 Bit BIOS ROM data path
	2 - 3	8 Bit BIOS ROM data path
S3	2 - 3 *	Enable Slot Sense / 16 bit transfer
	1 - 2	Disable Slot Sense / 8 bit transfer

* Default

Removal Procedures

Before beginning removal complete the following steps:

1. Turn off the computer and any peripheral devices.
2. Disconnect AC power cord from outlet and system.
3. Disconnect all peripheral devices from the computer.
4. Discharge any static with static strap on chassis.

System Cover

How to remove the system cover:

1. Remove the four screws on the rear of the system.
2. Lift up the rear edge of the top cover then,
3. While lifting pull the cover away or to back of system
4. Wait till cover clears the sides then remove.

Special Notices:

- When removing the processor chips, use chip puller.
- Multi-Sync monitors contain high voltages, any internal adjustments are to be made only by certified engineer.
- All NEC hard drives are formatted at the factory and configured as primary hard disk utilizing a single drive configuration.
- All switch changes will not take place until the system is repowered.

Field Replaceable Units

Memory	OEM Part	IBM Part
512KB memory exp. brd.	136-005873-001A	67H9091
512KB memory exp. mod.	136-005873-002A	67H9092
2MB memory exp. board	136-008302-855A	67H9122
4MB memory exp. board	136-008302-853A	67H9120
4MB memory exp. module	136-008302-854A	67H9121

System Boards	OEM Part	IBM Part
G8CFW - System board	158-050135-000	48H7009

Field Replaceable Units (Continued)

Internal Hard Drive	OEM Part	IBM Part
20MB, 3.5", HD	136-006912-726A	67H9103
20MB, 5.25", HD	136-006912-208A	20H9474
40MB, 3.5", HD	136-006912-729A	67H9104
40MB, 5.25", HD	136-006912-209A	67H9099
42MB, 3.5", ST-506 HD	136-008173-209A	48H6250
140MB, 5.25", ESDI HD	136-007897-608A	49H6837

Processor Boards	OEM Part	IBM Part
G8CFX processor bd.	136-008303-212A	20H9494

Controller	OEM Part	IBM Part
G9ZNH- ST506 HD cntrlr.	808-865892-002A	69H5453
G8BUT- ESDI HD cntrlr.	136-007897-610A	69H5455
G8DZT/G8CDQ HD cntrlr.	136-009116-200A	47H8604

Video Boards	OEM Part	IBM Part
Adv. graphics board plus	136-006793-A	47H8585
Advanced graphics board	136-005872-A	67H9090
G9XZT-Color graphics bd.	136-005871-A	67H9089
G8BYL video graphics bd.	136-008076-A	47H8600

Diskette Drives	OEM Part	IBM Part
5.25", 360KB Floppy	136-005869-002A	67H9088
3.5", 720KB Floppy	136-006372-424A	67H9094
5.25", 1.2MB Floppy	136-007897-207A	20H9480
3.5", 1.44MB Floppy	136-007954-222A	67H9112

Cables	OEM Part	IBM Part
5", HD B, ESDI/ST506 cable	808-840069-019A	67H2174
5", Floppy drive B, ST-560	808-840069-013A	67H2172
5", ESDI HD, signal cable	808-840656-005A	67H2180
5", Floppy signal cable	808-840655-014A	67H2179

Miscellaneous	OEM Part	IBM Part
Power supply (193 Watt)	136-007897-205A	67H9105
Keyboard PS/2 Style	808-866923-001A	49H5541
Battery assembly	804-020612-002A	49H5462