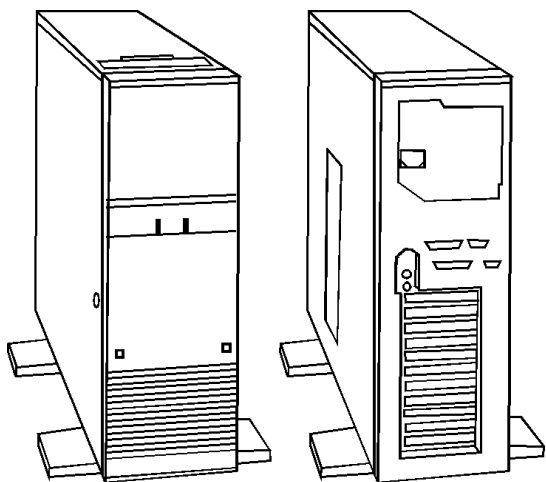**Figure 1. NEC Express RISCserver**

NEC
Express RISCserver

Specifications

Processor
- Single/dual R4400MC 75MHz external, 150MHz internal

Memory
- 32MB standard, expands to 512MB

I/O Expansion Slots
- Six full size EISA bus expansion slots

Diskette Drive
- 1.44MB, 3.5'' standard

Integrated Features
- Integrated BitBLT graphics.
- Two SCSI and One Floppy controllers.
- Ethernet interface controller.
- Keyboard and Mouse.
- Two serial and One Parallel.
- Modem.
- CD ROM reader

Internal Expansion Bays
- Up to three 5.25'' user accessible device drive bays
- Eight 3.5'' internal device drive bays.

I/O Architecture (Bus s supported)
- EISA

Power Supply
- 350 Watt

Diagnostics
- Normal Post Diags performed on Power UP of system.
- For Advanced Diags use a PC Diagnostic Utility.
- Troubleshoot according to errors found during test.

CMOS Access
- QAPlus/FE

Tools and Software Requirements
- 1/4'' Flat bladed, 2PT Phillips, T-15 Torx screwdrivers
- Needle nose pliers
- Diags and formatted blank diskette
- Anti-static wrist strap

Jumper/Switch Settings

System Board

Jumper	Setting	Function
JP7	shorted *	Internal VGA video on
	open	Internal VGA video off

* Default

Connector Labels

System Board

System Board	Connector Labels
Reserved	J1
VGA feature	J2
VXL video	J3
Secondary processor board	J4
Diagnostic LED	J6
VGA video jumper	J7
VGA monitor display	J9
Primary processor board	J15
Memory Expansion board (#1)	J16
SIMM connectors	J17, J19, J20, J21
I/O Board	J24
EISA connectors	J25 - J30
Memory Expansion board (#2)	JA1
Fan connector	JA2,JA3
Power supply connector	JA4,JA5
Disk LED	JA7
Speaker	JA8
Keyboard connector	P1
Mouse connector	P2

I/O Board

I/O Board	Connector Labels
Modem Line	P1
Modem Phone	P2
SCSI-2 port 0	J1
SCSI-2 port 1	J2
Floppy diskette drive	J3
Ethernet	J6
Serial Port (COM1)	J7
Serial Port (COM2)	J8
Parallel Port	J9

Special Notice:
- SIMMs with silver connectors should be used.
- SIMMs are x by 36 bit with 72 pins (x = 1,2,4,4DD Meg)
- Do not place VRAM or SIMMs on a carpet/cloth surface.
- When installing non NEC hard drives make sure power consumption is below 9 watts to avoid excess heat and a limit to number of drives due to power over usage.
- Maximum external SCSI-2 cable length is 6 ft.
- Danger of explosion if wrong battery size/type is replaced

Removal Procedures

Cables
Before beginning removal complete the following steps:
1. Turn off the computer and any peripheral devices.
2. Attach static strap to eliminate any static you have.
3. Disconnect AC power cord from outlet and system.
4. Disconnect all peripheral devices from the computer.

System Cover
How to open the systems access door:
1. Turn the key in the system lock clockwise to unlock the access door.
2. Carefully open the access door.

Removing 3-1/2˝ storage tray(s)/device(s)
1. Remove cables and system covers as described before
2. Turn switch to ''power off'' for the device tray
3. Pull on the handles to release each device tray (up to 8)
4. Slide device tray forward and out of the bay area while noting the position of the slot.

To remove the hard drive from the device tray
1. Remove four screws from bottom of tray
2. Detach data cables and power from device tray and the hard drive
3. Hard drive is now free to remove from device tray.

Removing the SCSI Distribution Panel
1. Remove cables and system cover as described before
2. Turn switch to ''power off'' for the device tray
3. Follow the instruction for removal of 3-1/2'' storage devices for all of the hard drives installed.
4. Open side interlock access door to the left side of the bay area when facing the unit from the front.
5. Locate the SCSI distribution panel, this is the panel that all the device trays plugged into.
6. Remove while labeling each of the data and power cables associated to the SCSI distribution panel.
7. Remove the eight (8) screws securing the panel to the chassis
8. Slip the distribution panel out the chassis through the opening in the side of the chassis.
9. Once removed from the system note the switch settings on the distribution board and duplicate these setting on the new distribution panel if you are replacing it for the following switch names: SW1, SW2, SW3, SW4, SW5, SW6. They should either be in ''T'' for terminator or ''C'' for connector position.

Note: The last slot on the distribution panel should always terminated as the last device.

Field Replaceable Units

Tape Drives	OEM Part	IBM Part
525MB SCSI-2 tape drive	158-050389-100	37H8553

Diskette Drives	OEM Part	IBM Part
5.25'', 1.2MB Floppy	158-053476-000	22H1988

Internal Hard Drive	OEM Part	IBM Part
540MB, SCSI-2 HD	158-053407-008	22H1991
1.0GB, SCSI-2 HD	158-050395-339	37H8997
2.0GB, SCSI-2 HD	158-050395-335	61H5791
4.0GB, SCSI-2 HD	158-050395-336	61H5785

Memory	OEM Part	IBM Part
8MB @ 2MB X 36 SIMM	158-082376-070	37H8533
4MB @ 1MB X 36 SIMM	158-082320-070	66H0596
16MB @ 4MB X 36 SIMM	158-082422-070	55H2429
32MB @ 8MB X 36 SIMM	158-082380-070	37H8547
Memory Expansion Board	158-053712-000	61H5784
VRAM, 2MB	158-053685-002	61H5786

Video Boards	OEM Part	IBM Part
Jaguar video board	158-050644-000	66H0416

Processor Boards	OEM Part	IBM Part
Processor Board, w/ CPU	158-026160-000B	61H5779
Processor Board, no CPU	158-026160-900A	61H5787
Processor with Heat-sink	158-050650-000	61H5788

I/O Boards	OEM Part	IBM Part
I/O board	158-026158-001B	61H5780

Controller Boards	OEM Part	IBM Part
EISA SCSI RAID array	158-053794-000	61H5789

System Boards	OEM Part	IBM Part
System board	158-026157-000D	61H5778

CD-ROM Drives	OEM Part	IBM Part
CD-ROM, Internal, 3Xi	89M26701	47H8370

Cables	OEM Part	IBM Part
SCSI cable, Ext., 3 devices	158-050511-001	66H7469
SCSI data cable, 5 devices	158-050510-002	66H7467
Video cable	158-050629-000	66H7486
Floppy signal cable	158-050561-001	66H7474

Miscellaneous	OEM Part	IBM Part
NEC PS/2 style mouse	158-050484-002	55H1100
Battery 3.6v	158-082410-150	37H9311
RTC Battery 3.6v	158-082409-000	61H5781
Processor Fan (2)	158-050695-011	37H9312
Power supply (350 Watt)	158-050695-003	61H5782
Fan 12v with wire	158-050695-019	37H9315
Keyboard PS/2 style	158-050550-000	20H9481
SCSI distribution panel	158-050662-000	61H5777
Power switch push rod	158-050695-014	61H5783