

ATTENTION: For proper cooling, do not leave top cover off for more than 2 minutes at a time while system is running.

System Service Information



Memory

NOTE:
See *Installation and User's Guide* for the various memory configuration options.

Release lever

Memory card/DIMM error LED

Memory card only error LED

Light path diagnostics button

Light path diagnostics button power LED

DIMM 1 error LED

DIMM 2 error LED

DIMM 3 error LED

DIMM 4 error LED

DIMM 5 error LED

DIMM 6 error LED

DIMM 7 error LED

DIMM 8 error LED

DIMM 1

DIMM 2

DIMM 3

DIMM 4

DIMM 5

DIMM 6

DIMM 7

DIMM 8

DIMM Installation Order

Order	DIMM Slots Populated
1st pair	1 and 8
2nd pair	3 and 6
3rd pair	2 and 7
4th pair	4 and 5

Light Path Diagnostics

OVER SPEC

LOG

LINK

PS

PCI

SP

REMIND

CNFG

CPU

VRM

DASD

RAID

BRD

Checkpoint code indicator

Reset button

NMI button

Light Path Diagnostics

Remind Button:
Press to put the system error LED into the Remind mode (flashes every 2 seconds). By pressing the button, the user acknowledges a system error but does not take immediate action. If a new failure occurs, the system error LED will turn on again.

LED	Description	Action
OVER SPEC	Power supplies are over their max rating.	Add power supply option if only one is installed. Replace failed power supply. Use 220V AC input power. Remove optional devices.
LOG	Information is present in the System Event Log.	Read information in the System Event Log and take appropriate action. The Remind Button also turns off the System Information LED and the LOG LED.
LINK	QPI Expansion port or cable fault, (scaled systems only)	Check QPI Expansion port link LEDs to identify failed port or cable (LED above QPI port off = problem). Reseat cable. Replace cable.
PS	Power supply has failed.	Check power supply AC, DC, and Error LEDs. Reseat installed power supplies. Replace failed power supply.
PCI	Error on indicated PCI bus.	Check system error log and I/O board LEDs to identify failing bus. Replace failed card.
SP	Service processor error.	Update firmware on uEFI and IMM. Power down, disconnect AC power, then restart system.
FAN	Fan failure.	Check LEDs on hot swap fans. Ensure indicated fan is seated properly. Replace indicated fan. Ensure all fans are installed. Have system serviced.
TEMP	Temperature threshold has been exceeded.	Ensure all fans are seated properly and replace any failed fans. Ensure that room temperature is not too high. Ensure that no air vents are blocked and system cover is installed.
MEM	Memory error has occurred.	Remove memory card with lit error LED on top of card. Press Light Path button on memory card to identify failed card or DIMM. Reseat DIMM(s) in slots with lit error LEDs. Replace DIMM(s) and/or replace memory card as indicated.
NMI	Machine check error occurred.	Check system error log. Reboot system.
CNFG	Hardware configuration error occurred.	Check other LEDs on lightpath panel and subsystem LEDs on or next to the devices that are configured incorrectly. Check that the microprocessors installed match each other in clock speed, cache size and type, and have identical internal and external clock frequencies. Check that adapter cards are only installed in slots 5-7 if no CPUs are in socket 3 or 4. Check system error log. Check memory configuration.
CPU	Microprocessor has failed.	Check microprocessor board LEDs to identify failed CPU. Reseat CPU. Replace failed CPU.
VRM	Reserved.	Reserved.
DASD	Hard disk drive error.	Replace drive with lit error LED. Drive is missing and should be reinserted in the same location. Replace DASD backplane.
RAID	Reserved.	Reserved.
BRD	Indicated board error detected.	Check system error log. Reboot system. Check PCIe and CPU board error LEDs. Replace indicated board.

NOTE: Light Path buttons on the memory cards will light LEDs for failed components after card is removed from the system.

Operator Information Panel

Power-control button/
power-on LED (green)

Ethernet port
activity LEDs

System information
LED (amber)

Sliding power
button cover

Ethernet
LED (green)

Locator button/
locator LED (blue)

System error
LED (amber)

Hot-Swap Power Supplies

Power Supply Indicators

AC	DC	!	Description and Action
On	On	Off	The power supply is on and operating correctly.
On	Off	---	There is a DC power problem. Possible causes: 1) The power supply has failed. Action: Replace the power supply. If the problem persists, have the system serviced.
Off	Off	---	There is an AC power problem. Possible causes: 1) There is no AC power to the power supply. Actions: Verify that: • The power cord is properly connected to the server. • The power outlet functions properly. 2) The power supply has failed. Action: Replace the power supply. If the problem persists, have the system serviced.
---	---	On	The power supply has failed. Action: Replace the power supply.

Release lever

Microprocessors

Socket dust cover

Microprocessor bracket frame

Microprocessor release lever

Alignment marks

Microprocessor install tool

Microprocessor

11 See label on top of heatsink for installation instructions.

Microprocessor Installation Order

Order	Microprocessor #
1st	1
2nd	4
3rd	2
4th	3

Memory Cards and Microprocessor Connections

Microprocessor #	Memory Cards
1	1 and 2
2	3 and 4
3	5 and 6
4	7 and 8

RAID Card

Release latch

1 Remove top cover bracket (See label on bracket)

2 Lift RAID card out of chassis

3 Disconnect cables (not shown)

4 Push release latch

5 Rotate card away from holder

Hot-Swap Fans

Release latch

Error LED

1

2

3

4

5

PCI Adapters

PCI Installation Order:
1, 5, 3, 6, 4, 7, 2

Adapter

Pin

Pin hole

Expansion slot cover

PCI error LEDs are located on the I/O board beside the connector

System Boards

I/O Board

Microprocessor Board

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

1 USB 6 & 7 Connectors

2 USB 4 & 5 Connectors

3 Serial Connector

4 Video Connector

5 IMM Ethernet Connector

6 Dual Ethernet Connectors

7 IMM Serial Debug

8 Slot 7, PCIe Error LED

9 I/O Board Error LED

10 Slot 6, PCIe Error LED

11 Slot 5, PCIe Error LED

12 Slot 4, PCIe Error LED

13 Slot 3, PCIe Error LED

14 Slot 2, PCIe Error LED

15 Slot 1, PCIe Error LED

16 3V Lithium Battery

17 PCIe Auxiliary Power

18 I/O Board Connectors

19 Microprocessor 3 Error LED

20 Microprocessor 4 Error LED

21 Fan 3 Connector

22 SAS Connector

23 SAS Backplane Power Connector

24 SAS Backplane Misc Data Connector

25 Fan 2 Connector

26 System Management Heartbeat LED

27 Microprocessor Board Error LED

28 Front Panel/Lightpath Connector

29 Scalability LED Connector

30 Fan 1 Connector

31 CD/DVD Power Connector

32 Microprocessor 1 Error LED

33 Microprocessor 2 Error LED

34 I/O Board Power Connectors

35 Main Power Request

36 Force Power Supply On

37 Power Fault

38 Internal USB Connectors

39 Wake-On-LAN Jumper (J31)

40 Power-On Password Jumper (J29)

41 Boot Recovery Jumper (J22)

42 Front USB Connector

43 SATA DVD Connector

44 Power Supply 2 Connector

45 Power Supply 1 Connector

QPI QPI Expansion port cable connectors and link LEDs (scalable systems only)

Hot-Swap Hard Disk Drives

Activity LED (green)

Error LED (amber)

Drive handle

Hard disk drive assembly

Filler panel

Red Outline is for Die Cut ONLY!

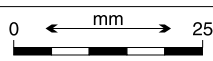
419.34 mm

Red Outline is for Die Cut ONLY!

- MANUFACTURING NOTES:**
- Graphics shall conform to the Artwork above.
 - Ink colors to match PMS Black, PMS 2718C, and PMS 1525C.
 - Refer to label print part number 59Y4648 for manufacturing and material notes.

Must conform to Eng. Spec: 80X2324
Tolerances unless noted: Linear \pm 0.3

SI
metric



IBM	Art Part number 46D3176	
EC number N24529G	Date 12/16/09	ID approval RA
Title Label, System Service		Eng approval SW

This document is the property of IBM. Its use is authorized only for responding to a request for quotation or for the performance of work for IBM. All questions must be referred to the IBM purchasing department.