

Dell[®] Latitude[®] XPi CD Service Manual Update

This document updates information contained in the *Dell Latitude XPi CD Service Manual* and in the *Dell Latitude XPi CD Parts Removal and Replacement Guide*.

New System Features

Additional system features include:

- Now available with a 166-MHz Intel[®] Pentium[®] microprocessor with MMX[™] technology in the Dell Latitude XPi CD M166ST, which otherwise has the same features as other models of the computer.
- Support for up to 80 MB of system memory on the Latitude XPi CD M166ST, by installing a combination of 8-, 16-, and 32-MB memory modules in the two sockets on the system board. (The standard minimum configuration is 16 MB of nonremovable EDO memory on the system board.)
- The Pentium microprocessor with MMX technology has twice the internal cache memory (32 KB) as the standard Pentium microprocessor.
- A Texas Instruments PCI 1131 CardBus controller.
- A NeoMagic 2093 video controller for a video subsystem that includes 1.1 MB of video memory.
- An ESS 1887 audio controller.
- 10X CD-ROM drive.

NOTE: Your computer may not appear exactly as shown in some of the figures in the Service Manual. EMI shields may have been changed or added.

Technical Specifications

The following information updates Table 1-2, "Technical Specifications," in Chapter 1 of the *Service Manual*.

Technical Specifications

Microprocessor

Microprocessor:

Latitude XPi CD M166ST	Intel Pentium microprocessor with MMX technology running at 166 MHz
-------------------------------------	--

Latitude XPi CD P150ST	Intel Pentium microprocessor running at 150 MHz
-------------------------------------	--

Internal cache:

Latitude XPi CD M166ST	32 KB
-------------------------------------	-------

Latitude XPi CD P150ST	16 KB
-------------------------------------	-------

External cache	256-KB pipelined burst SRAM
--------------------------	-----------------------------

Math coprocessor	internal to the microprocessor
----------------------------	--------------------------------

Chip Set and Bus

Local bus:

Latitude XPi CD M166ST	66 MHz
-------------------------------------	--------

Latitude XPi CD P150ST	60 MHz
-------------------------------------	--------

PCI bus:

Latitude XPi CD M166ST	33 MHz
-------------------------------------	--------

Latitude XPi CD P150ST	30 MHz
-------------------------------------	--------

Technical Specifications (continued)

PC Card

PC Card controller:¹

Latitude XPi CD M166ST	Texas Instruments PCI 1131 CardBus controller
Latitude XPi CD P150ST	Texas Instruments PCI 1130 CardBus controller

Data width (maximum):

PCMCIA	16 bits
CardBus	32 bits

Memory

Memory module capacities:

Latitude XPi CD M166ST	8-, 16-, and 32-MB fast-page mode
Latitude XPi CD P150ST	8- or 16-MB fast-page mode

Maximum RAM:

Latitude XPi CD M166ST	80 MB
Latitude XPi CD P150ST	48 MB

Connectors

IDE hard-disk drive one 40-pin connector

¹ The device driver for the PCI 1131 CardBus controller is compatible with the PCI 1130 CardBus controller. However, the device driver for the PCI 1130 CardBus controller is not compatible with the PCI 1131 CardBus controller.

Technical Specifications (continued)

Audio

Audio controller:²

Latitude XPI CD
M166ST ESS 1887;
ESS 690 wavetable music synthesizer;
ESS 938 3D audio spatializer (on systems using
Windows 95)

Latitude XPI CD
P150ST ESS 1888;
ESS 690 wavetable music synthesizer;
ESS 938 3D audio spatializer (on systems using
Windows 95)

Video

Video type. 128-bit hardware accelerated

Data bus PCI

Video controller:³

Latitude XPI CD
M166ST NeoMagic 2093

Latitude XPI CD
P150ST NeoMagic 2090

Video memory 1.1 MB (2.0-MB performance equivalent)

Display

Dimensions (active area):

Height 184.5 mm (7.26 inches)

Width 246.0 mm (9.68 inches)

Controls brightness can be controlled through a key
combination or the Display window in the Dell
Control Center

² The device driver for ESS 1887 audio controller is compatible with the ESS 1888 audio controller. However, the device driver for the ESS 1888 audio controller is not compatible with the ESS 1887 audio controller.

³ The device driver for NeoMagic 2093 video controller is compatible with the NeoMagic 2090 video controller. However, the device driver for the NeoMagic 2090 video controller is not compatible with the NeoMagic 2093 video controller.

Technical Specifications (continued)

CD-ROM Drive

Data transfer rate (minimum):⁴

Sustained 900 KB/sec (6X); 1500 KB/sec (10X)

Burst 14.4 MB/sec (6X and 10X)

Physical (Computer)

Weight:⁵

Latitude XPi CD
M166ST 3.4 kg (7.4 lb)

Latitude XPi CD
P150ST 3.3 kg (7.3 lb)

Power (Advanced Port Replicator)

Voltage requires 18.5 VDC from AC adapter

Amperage 3.5 A

Physical (Advanced Port Replicator)

Height 31.75 mm (1.25 inches)

Depth 76.20 mm (3.00 inches)

Width 266.7 mm (10.50 inches)

Weight 0.6 kg (1.3 lb)

SCSI Controller (Advanced Port Replicator)

Chip set AIC 6360; SCSI-2 compliant

Data bus width 16-bit ISA host bus interface

Data transfer rate 10.0 MB/sec

I/O address 140h

IRQ IRQ11

⁴ The data transfer rate of the CD-ROM drive in your system may be faster, depending on when you purchased the computer.

⁵ With battery and hard-disk drive.

Technical Specifications (continued)

Ethernet Network Controller (Advanced Port Replicator)

Chip set.	3Com® 3C913B; 10Base-T Ethernet
Data bus width	16-bit Plug and Play ISA host bus interface
I/O address	300h (default)
IRQ.	IRQ10

Token Ring Network Controller (Advanced Port Replicator)

Chip set.	IBM04H8297; 16/4 Mbps Token Ring (default ring speed is 16 Mbps)
Data bus width	16-bit ISA host bus interface
I/O address	A20h (default)
IRQ.	IRQ10

Removing and Replacing Parts Changes

The following information updates the removal and replacement procedures for some parts and assemblies as described in Chapter 4, “Removing and Replacing Parts,” of the *Service Manual* and in the *Parts Removal and Replacement Guide* (which is the same as Chapter 4 of the *Service Manual*). However, some of the parts and assemblies used are different.

Palmrest Assembly

Revise the Palmrest Assembly removal procedure to include the following:

Use a scribe to pry out the three screw covers for the palmrest-retaining screws A1, A2, and A3.

Disengage the palmrest assembly from the bottom case assembly by sliding the palmrest assembly about 1/8-inch toward the front of the computer. Then, gently lift the front of the palmrest assembly and pull it toward the front to release the back hooks.

Display Assembly Latch and Latch Spring

Your computer may have a plastic clip or mylar pad attached to the latch assembly.

LCD Panel

Your computer may have a metal spacer attached to the top of the LCD panel.

LCD Inverter Board

The inverter board assembly with order name SVC,LCD/INVTR,IBM,LXPiCD (see the “Factory Repair Parts and Assemblies” table found later in this document) is different from the inverter board assembly with order name SVC,LCD/INVTR,SMSNG,LXPiCDX.

If the back light on the LCD panel is not working, replace both the inverter board and the LCD panel.

Bottom Case Assembly Removal

The parts of your computer may be different from the parts shown in Figure 4-22, “Bottom Case Assembly Removal,” of the *Service Manual* (Figure 22 of the *Parts Removal and Replacement Guide*). The superpart docking EMI clip and superpart serial EMI clip may be smaller. The superpart assembly may also look different. The upper I/O bracket clip has been renamed the *deck buoy*.

Diskette/CD-ROM Drive Assembly

There may be a bracket spacer on the diskette/CD-ROM assembly in your computer.

Deck Buoy

The deck buoy in your computer may have an EMI clip attached to it.

System Board Assembly Removal

The parts of your computer may be different from the parts shown in Figure 4-27, “System Board Assembly Removal,” of the *Service Manual* (Figure 27 of the *Parts Removal and Replacement Guide*). The battery compartment may have a plastic cover.

Advanced Port Replicator Connector Dust Cover

The callout in Figure 4-31 (Figure 31 of the *Parts Removal and Replacement Guide*) refers to the Advanced Port Replicator connector dust cover.

Audio Board

The parts of your computer may be different from the parts shown in Figure 4-32, “Audio Board Removal,” of the *Service Manual* (Figure 32 of the *Parts Removal and Replacement Guide*). The hard-disk drive bracket and the audio board may have a shield, a clip, an insulator, and standoffs added.

Factory Repair Parts Changes

Removal and replacement procedures for all factory components and subassemblies are the same as those described in Appendix A, “Factory Repair Parts,” of

the *Service Manual*. However, some of the components and subassemblies used are different. The following information updates Table A-1, “Factory Repair Parts and Assemblies,” in Appendix A.

Factory Repair Parts and Assemblies

Part or Assembly Name	Order Name	Figure
CD-ROM Drive Assembly		
CD-ROM drive assembly service kit	SVC,ASSY,CD,INT,I,10X,LXPiCD	4-23
CD-ROM drive	CD,650M,I,INT,10X,LXPiCD M166ST	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	
Hard-Disk Drive Assemblies		
Hard-disk drive assembly service kit, 3-GB	CUS,HD,3.0G,17MM,IBM,NBK	4-6
Hard-disk drive, sub-assembly, 3-GB	SUBAS-SY,HD,3.0G,17MM,IBM,LXP	
Hard-disk drive	HD,3.0GB,I,F2,17MM,IBM	
LCD Assemblies		
LCD inverter board service kit	SVC,LCD/INVTR,SMSNG,LXPiCDX	
LCD panel	LCD,TFT,SVGA,12.1”,CISPR SMSNG	4-17
Cable/Bobbin assembly	ASSY,CBL/BBN,TFT,LXPiCD	4-20
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	
Cable/Bobbin service kit	SVC,ASSY,CBL/BBN,SMSNG,LXPiCD	
Cable/Bobbin assembly	ASSY,CBL/BBN,TFT,LXPiCD	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	

Factory Repair Parts and Assemblies (continued)

Part or Assembly Name	Order Name	Figure
LCD Assemblies (continued)		
LCD inverter board service kit	SVC,LCD/INVTR,IBM LXPiCD	
LCD panel	LCD,TFT,SVGA,12.1",IBM, CISPR	
Cable/Bobbin assembly	ASSY,CBL/BBN,TFT,IBM, LXPiCD	4-20
Spacer assembly, LCD panel	ASSY,LCD SPACER,IBM, LXPiCD	
Spacer	SPCR,LCD,12.1",LXPiCD,IBM	
Tape	TAPE,SPCR,LCD,12.1", LXPiCD,IBM	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	
Cable/Bobbin service kit	SVC,ASSY,CBL/BBN,IBM, LXPiCD	
Cable/Bobbin assembly	ASSY,CBL/BBN,TFT,IBM LXPiCD	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	
Memory		
Memory module, 32-MB, customer kit	CUS,MEM,32M,LXPiCD	4-8
Memory module, 32-MB	DIMM,32MB,70NS,8X32,NBK, G,72P	

Factory Repair Parts and Assemblies (continued)

Part or Assembly Name	Order Name	Figure
Miscellaneous Parts		
Left tilt-support foot service kit	SVC,FOOT,BACK,LF, LXPiCD	4-5
Right tilt-support foot service kit	SVC,FOOT,BACK,RT, LXPiCD	4-5
Keel plate assembly	ASSY,PLT,KEEL,CISPR, LXPiCD	A-12
Keel plate	PLT,KEEL,TIN PLATED, LXPiCD	
Clip, keel plate	CLP, KEEL BUOY,CISPR, LXPiCD	
Foam, keel plate	FOAM,BLCK,PORON,CNDCT COAT	
Thermal clamp assembly	ASSY,CLMP,THRM,CISPR, LXPiCD	
Thermal clamp	CLMP,THRM,TIN PLATED, LXPiCD	
Clip, thermal clamp	CLP, GND,CPU,CISPR, LXPiCD	
Fan/Speaker service kit	SVC,ASSY,PLN,FAN/SPKR LXPiCD	
Fan/Speaker board assembly	ASSY,PWA,FAN/SPKR,CISPRII, XPiCD	
Fan/Speaker board	PWA,FAN/SPKR,CISPRII, LXPiCD,NBK	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	

Factory Repair Parts and Assemblies (continued)

Part or Assembly Name	Order Name	Figure
System Board Assemblies		
System board assembly, LXPI CD, 166-MHz, service kit	SVC,PLN,LXPICD M166ST,WB,0M	4-27
System board sub-assembly with BIOS, LXPI CD, 166-MHz	SUBASSY,PLN,LXPICD-166ST, WB,0M	
Audio board assembly, MMX	ASSY,PWA,AUD,LXPICD M166ST,NBK	4-32
Audio board	PWA,AUD,LXPICD M166ST,NBK	
Clip, audio	CLP,AUDIO,HDD,CISPR, LXPICD	
Shield, audio	SHLD,AUDIO,HDD,CISPR, LXPICD	
Insulator, audio	INSUL,AUDIO,HDD,CISPR, LXPICD	
Speaker, audio jack	SPCR,AUDIO JACK,CISPR, LXPICD	
Screw	SCR,M2X14MM,PHH,MS,ZPS, W/WSHR	
Screw	SCR,M2X3MM,PHH,MS,BLO, W/WSHR	
Standoff	STDF,M2X5MM,FEM/FEM, NBK	
Cover, mylar	CVR,MYLAR,PCMCIA, CISPRII,XPICD	
Powersupply board	CRD,PWR SPLY,LXPICD, 2.5V	4-29
System board, 166-MHz	PWA,PLN,LXPICD 166ST, CISPRII	

Factory Repair Parts and Assemblies (continued)

Part or Assembly Name	Order Name	Figure
System Board Assemblies (continued)		
BIOS chip	IC,PROG,FLASH,28FO20,PRG 84719	
Spreader assembly	ASSY,PAN SPRDR,CISPR, LXPiCD	
Clip, spreader	CLP,EMI,PAN SPRDR,CISPR, LXPiCD	
Insulator, spreader	INSUL,PAN SPRDR,CISPR, LXPiCD	
Ground assembly	ASSY,LD GRD,CISPR,LXPiCD	
Clip, CPU	CLP,CPU,BTM,CISPR,LXPiCD	
Technical booklet, service manual update	TSH,SRV MNL UPD,LXPiCD M166ST	

Exploded Views of Components and Assemblies

The parts of your computer may be different from the parts shown in Figure A-3, “Exploded View—Bottom Case Assembly.” The superpart docking EMI clip and superpart serial EMI clip may be smaller. The superpart assembly may look different. The upper I/O bracket clip has been renamed the *deck buoy*.

Bottom-Case Assembly Components

The spreader plate in your computer may be different from that shown in Figure A-10, “Bottom-Case Assembly Components.”

Spreader and Keel Plates

The spreader plate in your computer may be different from that shown in Figure A-12, “Spreader and Keel Plate Removal.”