### IBM 

#### Limited warranty

- **1 year** - carry-in or ThinkPad EasyServ™ depot repair service via courier or service provider, see IBM’s Limited Warranty.

#### Audio support
- Ethernet/modem
- Video in and out

#### Ethernet/modem
- PCI Card Std slots
- Ports
- USB: One (Version 1.1) / Serial: one 9 pin / Parallel: one / keyboard / mouse /...with CD drive and battery: 12.1 models: 6.3 lb (2.9 kg), 14.1 models: 6.6 lb (3.0 kg), 15.0: models: 6.9 lb (3.1 kg). IBM ThinkPad UltraCarbon™ case

#### Battery
- Type: Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay
- Models: 12.1 and 15.0: 3.5 hrs, 14.1: 3.7 hours
- Charge time: on/off 3 hrs to 1.5 to 2.5 hrs

#### Display
- Processor
- L2 cache
- Memory
- Diskette drive
- CD-ROM
- Ultrabay 2000
- Video support
- Dimensions
- Approximate weight

#### Graphics controller
- 12.1:...models: 14.1, 15.0: (381mm) XGA (1024x768) TFT color / Active Matrix 15.0: (312mm) XGA (1024x768) TFTP color / Active Matrix
- Graphics controller
- UltraPort® connect
- Video in and out
- Communnicats Bay
- Modem
- Ethernet/modem
- Audio support
- Security

#### Limited warranty
- Communications Bay
- IBM 10/100 Ethernet Mini PCI Adapter
- IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem
- IBM 100/100 EtherJet Mini PCI Adapter with 56K Modem
- Ultrabay 2000 interchangable accessories
- Zip 250MB USB UltraBay 2000 Drive
- SuperDisk (LS-120) UltraBay 2000 Drive
- Ultrabay 2000 Li-ion battery
- Wireless connectivity
- IBM 802.11b Wireless LAN PC Card
- IBM 802.11b Wireless LAN Access Point

## WINDOWS 98 PRELOAD
- Microsoft Windows 98 Second Edition
- Access ThinkPad II
- IBM Update Connector
- PC-Doctor
- IBM SystemXtra
- IBM PC Lifecycle Care

## WINDOWS 2000 PRELOAD
- Windows 2000 Professional
- PC-Doctor
- IBM Update Connector
- IBM SystemXtra

### All trademarks are the property of their respective owners

Models withdrawn from marketing effective February 2001

IBM Corp. January 2001
IBM ThinkPad A20m (Summer 2000) - withdrawn

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Processor</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>CD/DVD</th>
<th>CommunicBay</th>
<th>Preload</th>
<th>Availability</th>
</tr>
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<tbody>
<tr>
<td>2628-1AU</td>
<td>Celeron</td>
<td>64MB</td>
<td>42&quot; SVGA</td>
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<td>Jun 00</td>
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</table>

Processor: Intel Mobile Celeron® or Pentium® III 550MHz with 100MHz bus or Pentium® II 500MHz with 100MHz system bus or Pentium® III 600 or 700MHz with SpeedStep™ technology and 100MHz bus

Memory: 128MB standard / 512MB max / SDRAM / non-parity / 100MHz / PC 100 / two 144-pin SO-DIMM sockets / std memory in one socket / 1 socket available

Graphics controller: ATI Rage Mobility M / AGP 2X / 4MB SDRAM / DDC2B

Diskette drive: 3.5" 1.44MB / Intelligent / supports unique 2nd battery in Ultrabay 2000

CD or DVD-ROM Drive: 6 or 12GB / upgradeable / S.M.A.R.T. / supports 2nd disk in opt HDD adapter

Display: 12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix

Keyboard: ThinkPad Button / palm rest / TrackPoint®, Press-to-Select, Internet Scroll Bar

Power Management

- IBM 340MB Microdrive
- IBM 340MB Microdrive
- ThinkPad Assistant
- IBM Update Connector
- Universal Manageability Services
- Lotus® SmartSuite® Millennium CD
- Lotus® SmartSuite® Millennium CD
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)
- Recovery CD-ROM (Windows 95)

Specifications

Windows 2000 Professional

- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe®
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Universal Manageability Services
- Lotus® SmartSuite® Millennium CD
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

LINUX PRELOAD

- Caldera® OpenLinux eDesktop® 2.4
- Access ThinkPad II
- StarOffice
- NetManage Communicator
- OpenLinux eDesktop CD-ROM
- Recovery CD-ROM

Service options: Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

No warranties are expressed or implied in this summary (A20M) © IBM Corp. January 2001
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
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Processor: Intel Mobile Pentium III 700 or 750 MHz with Intel SpeedStep technology and 100 MHz system bus.

L2 cache: 256KB on board (at processor speed) / ECC.

Memory: 128MB standard / 512MB maximum / SDRAM / non-parity / 100MHz / PC 100 / 3.3v / two 144-pin SO-DIMM sockets / 128MB in one socket / 1 socket available.

Diskette drive: 3.5" x 1.44MB / non-removable.


Display: 15.0" (381mm) SXGA+ (1400x1050) TFT color / Active Matrix.

Graphics controller: ATI Rage Mobility 128 / AGP 2X / 16MB SDRAM / 128-bit path to memory.

Graphics - external: Supports external digital monitor via the Digital Video Interface (DVI) port on either of the optional docking solutions / DDC2B / external SVGA to 1024x768x16.7 million colors at 85Hz and up to 1600x1200.

Keyboard: ThinkPad Button / palm rest / TrackPoint, Press-to-Select, Internet Scroll Bar.

Dimensions: Approximately 13.2 x 10.7 x 1.5-1.8" / 332mm x 268mm x 38.1-44.7mm with DVD drive and battery: 7.6 lb (3.45 kg).

Weight: Ultrabay 2000 / 6X-2X DVD Ultrabay 2000 Drive / 05K9232 / 256MB SO DIMM 100MHz NP SDRAM / 20L0254

Battery: Lithium Ion 9-cell / intelligent / supports unique 2nd battery in Ultrabay 2000 / 4.3 hours.

Charging time: 2 to 3 hrs / 1.5 to 2.5 hrs.


Port replicator: ThinkPad Port Replicator.

Docking Station: ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot).

PC Card Std slots: 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video (accepts Ultrabay 2000 devices).


Other features: 72 watt AC Adapter.

Video in and out: S-video in and S-video out / two industry standard connectors / full MPEG-2 support / video out cable included (S-video to composite).

Communications Bay: Communications Bay with Mini PCI IIb slot / customer accessible.

Modem: IBM 56K V.90 Mini PCI Adapter / Lucent chip set.

Ethernet/Modem: IBM 10/100 Ethernet Mini PCI Adapter with 56K modem / Intel ethernet chipset / Lucent modem chip set.

Audio support: PCI audio / SoundBlaster Pro™ support / CS4624 with CS4297A AC97 codec / stereo speakers / .5 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack.


Limited warranty: 3 year - carry-in or ThinkPad EasyServ™ service / depot repair service via courier.

Service options: 1 year - carry-in or ThinkPad EasyServ™ service / upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period).

Communication Bay:
- IBM 10/100 Ethernet Mini PCI Adapter
- IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem by 3Com
- IBM UltraBay Adapter II
- IBM UltraBay Adapter I
- IBM UltraBay Adapter I with 56K Modem by 3Com
- IBM UltraBay Adapter I with 56K Modem by 3Com

USB 2.0 / 1.1 support / power over USB / 128MB 15" SXGA+ / 6X-2x / 128MB in one socket / 1 socket available.

Interchangeable storage: 6.0GB HDD / 12.0GB HDD / 18.0GB HDD.

Windows 98 Preload:
- Microsoft Windows 98 Second Edition
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor
- Universal Manageability Services
- Mediamatics DVD Express
- MGI VideoWave III (video editing)
- Lotus™ SmartSuite Millennium CD
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)
- Recovery CD-ROM (Windows 95)

Windows 2000 Preload:
- Windows 2000 Professional
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Mediamatics DVD Express
- MGI VideoWave III (video editing)
- Lotus™ SmartSuite Millennium CD
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

PC 99-compliant:
- CIM and DMI 2.0 compliant
- Wired for Management 2.0
- Local and remote asset management via the IBM Universal Manageability solutions

IBM PC Lifecycle Care provides proactive life cycle management and transition planning tools.

ENERGY STAR compliant:
- Asset ID™ wireless technology (via replacing HDD access door)
- IBM is planning to announce Bluetooth™ wireless technology communications devices including a Bluetooth PC Card option and Bluetooth option for the ThinkPad UltraPort connector in the second half of 2000.

Personalized Web-based support:
- International Warranty Service
- IBM SystemXtra™

24 hour x 7 day toll-free hardware support during the warranty
IBM® ThinkPad® A21e (2628) - withdrawn

No warranties are expressed or implied in this summary

Table: ThinkPad® A21e (2628)

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
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<td>Windows 98 SE</td>
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Processor:
- Intel® Mobile Celeron™ 600 or 700MHz with 100MHz system bus
- L2 cache 128KB / onboard (at processor speed) / ECC
- Memory 64MB standard / 256MB max / SDRAM / non-parity / 100MHz / PC 100 / two 144-pin SO-DIMM sockets

Diskette drive:
- 3.5" 1.44MB / not removable

CD or DVD-ROM:
- Bootable / removable from Ultrabay™ 2000
- Ultrabay 2000
- Modular bay for interchangeable devices

Display:
- 12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix
- 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix

Graphics controller:
- ATI Rage™ Mobility-M / PCI / 4MB SGRAM / DDC2B

Memory:
- Some models: 56K6 V.90 Mini PCI modem card / Lucent
- Intel 440MX
- 2 to 3 hrs / 1.5 to 2.5 hrs

Video in and out
- Video out 72 watt AC Adapter / no Asset ID

Communications Bay
- 3Com Ethernet PCI Card 10/100 Ethernet / NIC 10/100 Mbps / ISA (diskette, serial, parallel, ext exp)

Architecture
- Intel 440MX PCIset (82443MX) / combines Host Bridge and PCIe7 / 3Com/eth/mod

Modular bay:
- 3Com/eth/mod

Power:
- 2628-CSU Celeron™ 600 64MB 10.5" XGA 10GB 24X-10X CD modem: 26.7 watts / 7.4 lbs
- 2628-CYU Celeron™ 600 64MB 12.1" SVGA 10GB 24X-10X CD modem: 27.0 watts / 7.4 lbs
- 2628-J1U Celeron™ 600 15.0" XGA 10GB 24X-10X CD modem: 27.0 watts / 7.4 lbs
- 2628-JTU Celeron™ 600 15.0" XGA 10GB 24X-10X CD modem: 27.0 watts / 7.4 lbs
- 2628-JTU Celeron™ 600 15.0" XGA 10GB 24X-10X CD modem: 27.0 watts / 7.4 lbs

Security:
- ThinkLight illuminates the keyboard to improve visibility in low-light conditions

Wireless connectivity:
- IBM H Rate Wireless LAN PC Card 128 09N9904
- IBM Wireless LAN Access Point 500 09N9906

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Authorized February 6, 2001.

No warranties are expressed or implied in this summary.

#### IBM® Dimensions 3 Case material

Models withdrawn effective September 2001

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Limited warranty

Audio jacks

Audio support

Ethernet/modem

Communications Bay

Video in and out

Communications Bay

Modem

Ethernet/modem

Audio support

Audio jacks

Security

Limited warranty

Service options

Options

Processor

IBM® Mobile Celeron™ 650 or 700MHz with 100MHz system bus

L2 cache

Memory

64MB standard / 256MB max / SDRAM / non-parity / 100MHz / PC 100 / ECC

Diskette drive

None standard / optional USB Portable Diskette Drive or Ultrabay 2000 diskette drive available

CD or DVD-ROM

Booteable / removable from Ultrabay™ 2000

Ultrabay 2000

Modular bay for interchangeable devices / cold (system off) swap only

Disk (removable)

20GB / upgradeable / S.M.A.R.T. / supports 2nd disk in opt HDD adapter

Display

12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix

14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix

Graphics controller

ATI® Rage™ Mobility-M / PCI / 4MB SDRAM / DDC2B

Graphics - external

External SVGA to 1024x768x16.7 million colors at 85Hz and up to 1600x1200

Keyboard

ThinkPad Button / palm rest / TrackPoint™, Press-to-Select, Internet Scroll Bar

ThinkLight

Illuminates the keyboard to improve visibility in low-light conditions

UltraPort™ connection

None

Case material

Color: black / Top: ABS plastic / Bottom: glass-fiber reinforced plastic

Dimensions

Approximate weight

Battery - type

NIMH 7-cell / intelligent / supports optional Li-Ion battery / does not support any battery in Ultrabay 2000

Battery - life

2.5 hrs (NIMH 7-cell) / 3.0 hrs with optional Li-Ion

Charge time

3.2 to 6 hrs / 3.2 hrs

Architecture

Intel® Mobile Celeron™ 650 or 700MHz / with 100MHz system bus

Port replicator

Optional ThinkPad Port Replicator

Docking Station

No support for ThinkPad Dock

PC Card Std slots

1 Type I, 1 Type II, or 1 Type III / CardBus 2-bit / PCMCIA 2.1 / no Zoomed Video

Ports

One USB (Version 1.1) / one serial (9 pin) / parallel / external DB-15 monitor / RJ-11 (modem) / RJ-45 (ether) / RJ-45 (ether)

72 watt AC Adapter / no Asset ID

Other features

72 watt AC Adapter / no Asset ID™ wireless RF technology support

Video in and out

Communications Bay

Modem

Ethernet/modem

Audio support

PCE audio / SoundBlaster Pro™ support / Intel 440MX AC97 audio support with CS4299 AC97 codec / mono speaker / 1.5 watt / volume up, down, mute buttons above keyboard

Audio jacks

Input jack (3.5 mm) / output jack (3.5 mm) / line in jack / no internal microphone

Power-on password / hard disk password / supervisor password / security keyhole

Limited warranty

1 year - EasyServ™.15 onsite pickup and delivery courier service

Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

Options

64MB SO DIMM 100MHz NP SDRAM

20L0254

20L0255

20L0256

ThinkPad Removable Diskette Drive

08K6903

SuperDisk (LS-240) Ultrabay 2000 Drive

08K6916

Zip 250MB Ultrabay 2000 Drive

100N8253

24X-10X CD-ROM Ultrabay 2000 Drive

05K2933

8X/4X/24X CD-RW Ultrabay 2000 Drive

08K9659

8X-2X DVD Ultrabay 2000 Drive

27L3448

CD-RW/DVD Combo Ultrabay 2000 Drive

08K9572

Travel Bezel for Ultrabay 2000

08K6070

Second HDD Adapter for Ultrabay 2000

08K6068

15GB HDD

08K9588

32GB HDD

08K9593

32GB HDD*

08K9511

* Supported in Ultrabay 2000 only. Requires HDD adapter 08K6068

USB Portable Diskette Drive

05K9276

ThinkPad NiMH Battery (2655), 6 cell

02K6742

ThinkPad Li-Ion Battery (2655), 6 cell

02K6743

ThinkPad 72W AC Adapter

02K6699

Multiple Li-Ion/NIMH Battery Charger

02K6719

ThinkPad Port Replicator

02K6667

ThinkPad Monitor Stand 2001

22P5265

Portable Drive Bay 2000

19K4480

IBM ESS 1394 CardBus Card

19K5679

Intel Pro/100 SP Mini PCI

06P3801

ServicePac 3yr IOR 9x5 NBD

30L9195

ServicePac 3yr P&L P/U Depot

30L9192

WINDOWS 98 PRELOAD

- Microsoft Windows® 98 Second Edition
- ThinkPad Utilities
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Lotus® SmartSuite™ Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)
- Disk-to-Drive Recovery (in hidden Service Partition)

WINDOWS 2000 PRELOAD

- Windows 2000 Professional
- ThinkPad Utilities
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Lotus® SmartSuite™ Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)
- Disk-to-Drive Recovery (in hidden Service Partition)

The right bay (Ultrabay 2000) supports the following:

- standard or optional CD-ROM
- optional DVD drive
- optional ZIP drive
- optional SuperDisk (LS-240) drive
- optional CD-RW
- optional HDD adapter; for second disk
- optional ThinkPad Proven™ solutions™ (such as Travel Bezel)
- no support for battery on the A21e
- optional diskette

PC 99-compliant

PXE 2.0-compliant

Wired for Management (WIM) 2.0

Local and remote asset management

IBM® SystemXtra™ provides proactive life cycle management and transition planning tools

ENERGY STAR compliant


Personalized Web-based support

International Warranty Service

IBM SystemXtra™ supports the following:

- 24 hour x 7 toll-free hardware support during the warranty

No warranties are expressed or implied in this summary

(A21E55) © IBM Corp. August 2001
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
<th>Disk</th>
<th>CD or DVD</th>
<th>CommunicaBay</th>
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<tr>
<td>2628-D1U</td>
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<td>Linux Oct 00</td>
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</table>

**Processor**

- Intel Pentium III 700, 750, or 800Mhz with SpeedStep technology and 100MHz system bus
- or
- 256KB on-board (at processor speed) / ECC

**Memory**

- 64 or 128MB standard / 512MB max / SDRAM / non-parity / 100MHz / PC 100 / two 144-pin SO DIMM sockets / std memory in one socket / 1 socket available

**Diskette drive**

- 3.5" 1.44MB / non-removable

**CD or DVD-ROM Drive**

- Bootable / removable from Ultrabay 2000 (modular bay)

**Disk (removable)**

- 10 or 20GB
- Upgradeable / S.M.A.R.T. / supports 2nd disk in opt HDD adapter

**Display**

- 12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix
- 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix
- 15.0" (381mm) XGA (1280x800) TFT color

**Graphics controller**

- Dux/Exx models: ATI Rage Mobility M / AGP 2X / 4MB SDRAM / DDC2B
- Fxx/Gxx models: ATI Rage Mobility M1 / AGP 2X / 8MB SDRAM / DDC2B

**Graphics - external**

- External SVGA to 1024x768x16.7 million colors at 85Hz and up to 1600x1200

**Keyboard**

- ThinkPad Button / palm rest / TrackPoint®, Press-to-Select, Internet Scroll Bar

**ThinkLight**

- Illuminates the keyboard to improve visibility in low-light conditions

**UltraPort™ connect**

- Cover
- IBM ThinkPad UltraCarbon™ case

**Dimensions**

- Dux/Exx/Gxx: approximately 12.7 x 10.7 x 1.47-1.73"; 317 x 267.5 x 367-43.3mm

**Approximate weight**

- Battery - type
- 3.5 hrs

**Architecture**

- Intel 440BX AGPset / Intel IIX4M (EIDE with Ultra DMA/33 or PIO Mode support, ISA Bridge, USB) / TP / PCI1450 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansions) / PC97338 Super I/O / ISA (diskette, serial, parallel, infrared, ext exp)

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking station**

- ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slots**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video

**Ports**

- USB: One (Version 1.1) / Serial: one 9 pin / Parallel: one / keyboard / mouse
- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video

**Video in and out**

- Fxx/Gxx: S-Video out (no S-Video in)

**Communications Bay**

- IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem and Intel ethernet chipset / Lucent modem chip set

**Modem**

- IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem and Intel ethernet chipset / Lucent modem chip set

**Ethernet/Modem**

- Some models: 56K V.90 Mini PCI modem card / Lucent® chip set

**Audio support**

- PCM audio / SoundBlaster Pro™ support / CS4624 with CS4297A AC97 codec / stereo speakers / 5 watt / volume up, down, mute buttons / int microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in

**Limited warranty**

- 1 year - EasyServ/™ on-site pickup and delivery courier service

**Service options**

- Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Communication Bay**

- IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem and Intel ethernet chipset / Lucent modem chip set
- IBM 10/100 Ethernet/Modem by 3Com

**IBM Update Connector**

- IBM Update Connector
- IBM Update Connector

**Windows 98 Preload**

- Microsoft® Windows® 98 Second Edition
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector

**Windows 2000 Preload**

- Windows 2000 Professional
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector

**Linux Preload**

- Caldera® OpenLinux™ eDesktop 2.4
- Access ThinkPad II
- StarOffice
- Netscape Communicator®
- IBM ThinkPad UltraCarbon™ case

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Software Selections CD-ROM**

- IBM Software Selections CD-ROM

**CPU**

- Intel Pentium III 700, 750, or 800MHz with SpeedStep technology and 100MHz system bus
- 256KB on-board (at processor speed) / ECC

**Memory**

- 64 or 128MB standard / 512MB max / SDRAM / non-parity / 100MHz / PC 100 / two 144-pin SO DIMM sockets / std memory in one socket / 1 socket available

**Diskette drive**

- 3.5" 1.44MB / non-removable

**CD or DVD-ROM Drive**

- Bootable / removable from Ultrabay 2000 (modular bay)
<table>
<thead>
<tr>
<th>Type-model</th>
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<th>MHz</th>
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<th>Screen</th>
<th>Disk</th>
<th>CD or DVD</th>
<th>Communications Bay</th>
<th>Preload</th>
<th>Available</th>
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<td>8X-2X DVD</td>
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</tbody>
</table>

**Processor**

- IBM® Pentium™ III 700, 750, or 8000MHz with SpeedStep™ technology and 100MHz system bus
- L2 cache: 256KB, onboard (at processor speed) / ECC
- Memory: 64MB standard / 512MB max / SDRAM / non-parity / 100MHz / PC 100 / two 144-pin SO-DIMM sockets / std memory in one socket / 1 socket available

**Display**

- 12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix
- 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix
- 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix

**Graphics controller**

- Dxx/Exx models: ATI® Rage™ Mobility M / AGP 2X / 4MB SDRAM / DDC2B
- Fxx/Gxx models: ATI Rage Mobility M1 / AGP 2X / 8MB SDRAM / DDC2B
- External SVGA to 2048x1536 16.7 million colors at 85Hz up to 1600x1200

**Battery - type**

- Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000

**Dimensions**

- Dxx/Exx/Gxx: approximately 12.7 x 10.7 x 1.47-1.73"; 317 x 267.5 x 36.7-43.3mm
- Fxx/Gxx: approximately 13.2 x 10.7 x 1.5-1.79"; 329 x 267.5 x 38.1-44.7mm

**Video in and out**

- Fxx/Gxx/S-Video out (no S-Video in)
- Dxx/Gxx: approximately 12.7 x 10.7 x 1.47-1.73"; 317 x 267.5 x 36.7-43.3mm

**Audio support**

- PCl audio / SoundBlaster Pro™ support / CS4624 with CS4297A AC97 codec / PCI1450 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansion) / Enhanced Power Management

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

- 1 year - EasyServ™ service
- 1 year - Optional ThinkPad Proven™ solutions (such as Travel Bezel)

**Service options**

- Some models: Office 2000 Small
- Some models: Office 2000 Small Business (Word, Excel, Outlook, Publisher, Small Business Tools) preloaded and CD-ROM
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe™
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)

**Windows 98 preload**

- Microsoft® Windows® 98 Second Edition
- Some models: Office 2000 Small Business (Word, Excel, Outlook, Publisher, Small Business Tools) preloaded and CD-ROM
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe™
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

**Windows 2000 preload**

- Windows 2000 Professional
- Some models: Office 2000 Small Business (Word, Excel, Outlook, Publisher, Small Business Tools) preloaded and CD-ROM
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe™
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

**The right bay (Ultrabay 2000) supports the following:**

- standard or optional CD-ROM
- standard or optional DVD drive
- optional Zip drive
- optional second battery
- optional SuperDisk (LS-120) drive
- optional CD-RW
- optional HDD adapter; for second disk
- optional ThinkPad Proven™ solutions (such as Travel Bezel)
## IBM® ThinkPad® A21p - withdrawn

### Processor
- **Type-model:** Processor: 2629-HIU Pentium®III 850, 128MB 15" UXGA 32GB8/2X modem, 98 SE, Sept 00
- **Processor:** Intel® Mobile Pentium® III 850MHz, with Intel SpeedStep™ technology and 100MHz system bus
- **L2 cache:** 256KB / onboard (at processor speed) / ECC
- **Memory:** 128MB standard / 512MB maximum / SDRAM / non-parity / 100MHz / PC 100 / 3.3v / two 144-pin SO-DIMM sockets / 128MB in one socket / 1 socket available
- **Disk drive:** 3.5" 1.44MB / non removable
- **Video:** DVD-ROM / 8X-2X speed / bootable / removable from Ultrabay™ 2000
- **Battery:** 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)
- **Battery:** IBM 1GB Microdrive 07N5574
- **Battery:** IBM IEEE 1394 CardBus Card 19K5679
- **Battery:** UltraPort Array Microphone 09N9121
- **Battery:** 3Com SuperDisk (LS-120) drive 27L3451
- **Battery:** 24X-10X CD-ROM Ultrabay 2000 Drive 05K9233
- **Battery:** Ultrabay 2000 Li-Ion battery 02K6646
- **Battery:** 4X/4X/20X CD-Read/Write Ultrabay 2000 00N8252
- **Battery:** 250MB Zip Ultrabay 2000 Drive 08N253
- **Battery:** Ultrabay 2000 Li-Ion battery 02K6646
- **Battery:** Travel Bezel for Ultrabay 2000 06K6070
- **Battery:** IBM High Rate Wireless LAN PC Card A21P 09N9012
- **Battery:** IBM 340MB Microdrive 08N073
- **Battery:** Bluetooth PC Card (available 4Q 2000) 09N9812

### Windows 98 Preload
- Microsoft® Windows® 98 Second Edition™
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Mediamatics DVD Express
- MGI VideoWare III (video editing)
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)

### Windows 2000 Preload
- Windows 2000 Professional™
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor™
- Mediamatics DVD Express
- MGI VideoWare III (video editing)
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

### Audio support
- PCI audio / SoundBlaster Pro™ support
- CS4624 with CS4297A AC97 codec
- stereo speakers / .5 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack

### Security
- Power-on password / hard disk password / supervisor password / security keyhole

### Limited warranty
- 3 years - EasyServ™ on-site pickup and delivery courier service
- Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

### Service options
- UltraPort Array Microphone 09N4178
- UltraPort Compact Flash Reader 19K4510
- IBM EIDE CD-Rom Cartridge 19K5679
- IBM 1GB Microdrive 07N5574
- IBM UltraPort Camera II 04P5613
- Communication Bay 09N9774
- IBM 10/100 Ethernet Pentium®III Pentium®III 850, 128MB 15" UXGA 32GB8/2X modem, 98 SE, Sept 00
- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)
- IBM 10/100 Ethernet Pentium®III Pentium®III 850, 128MB 15" UXGA 32GB8/2X modem, 98 SE, Sept 00
- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)
- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)
- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)

### All trademarks are the property of their respective owners

### US models withdrawn from marketing effective May 2001

### No warranties are expressed or implied in this summary

### (A21P) © IBM Corp. April 2001

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#### Windows 98 Preload
- **- Microsoft® Windows® 98 Second Edition™**
- **- ThinkPad Utilities**
- **- ThinkPad Assistant™**
- **- ConfigSafe™**
- **- IBM Update Connector™**
- **- Access ThinkPad II**
- **- PC-Doctor™**
- **- Mediamatics DVD Express**
- **- MGI VideoWare III (video editing)**
- **- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license**
- **- Software Selections CD-ROM**
- **- Recovery CD-ROM (Windows 98 SE)**

#### Windows 2000 Preload
- **- Windows 2000 Professional™**
- **- ThinkPad Utilities**
- **- ThinkPad Assistant™**
- **- ConfigSafe™**
- **- IBM Update Connector**
- **- Access ThinkPad II**
- **- PC-Doctor™**
- **- Mediamatics DVD Express**
- **- MGI VideoWare III (video editing)**
- **- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license**
- **- Software Selections CD-ROM**
- **- Recovery CD-ROM (Windows NT)**

#### Audio support
- **- PCI audio / SoundBlaster Pro™ support**
- **- CS4624 with CS4297A AC97 codec**
- **- stereo speakers / .5 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack**

#### Security
- **- Power-on password / hard disk password / supervisor password / security keyhole**

#### Limited warranty
- **- 3 years - EasyServ™ on-site pickup and delivery courier service**
- **- Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)**

#### Service options
- **- UltraPort Array Microphone 09N4178**
- **- UltraPort Compact Flash Reader 19K4510**
- **- IBM EIDE CD-Rom Cartridge 19K5679**
- **- IBM 1GB Microdrive 07N5574**
- **- IBM UltraPort Camera II 04P5613**
- **- Communication Bay 09N9774**
- **- IBM 10/100 Ethernet Pentium®III Pentium®III 850, 128MB 15" UXGA 32GB8/2X modem, 98 SE, Sept 00**
- **- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)**
- **- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)**
- **- IBM 10/100/1000BaseT Ethernet (IEEE 802.3u) / 10/100/1000BaseT Ethernet Mini PCI Adapter with 56K Modem (3Com eth/modem 98 SE Sept 00)**

### All trademarks are the property of their respective owners

### US models withdrawn from marketing effective May 2001

### No warranties are expressed or implied in this summary

### (A21P) © IBM Corp. April 2001
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
<th>Graphics</th>
<th>Disk</th>
<th>CD</th>
<th>Comm Bay</th>
<th>Design</th>
<th>Modular bay</th>
<th>Preload</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>2655-95U</td>
<td>Pentium III</td>
<td>800</td>
<td>64MB</td>
<td>13.1&quot; XGA</td>
<td>S3</td>
<td>30GB</td>
<td>24X-10X</td>
<td>Modem</td>
<td>Two spindle</td>
<td>Ultrabay™ 2000</td>
<td>Windows 98 SE Jun 2001</td>
<td></td>
</tr>
</tbody>
</table>

**Processor**

- **Intel® Mobile Celeron™ 800 or 850MHz** with 100MHz Front Side Bus
- **Intel Mobile Pentium™ III 850MHz with SpeedStep™ Technology** with 100MHz Front Side Bus

**L2 cache**

- Celeron: 128KB / onboard (at processor speed) / ECC
- Pentium III: 256KB / onboard (at processor speed) / ECC

**Memory**

- Celeron: 64MB standard / 256MB max
- Pentium III: 64MB standard / 512MB max
- SDRAM / non-parity / 100MHz / PCI / 100 MHz / 128-bit / 164-pin SO-DIMM sockets / std memory in one socket / 1 socket available

**Diskette drive**

- None standard / optional USB Portable Diskette Drive or Ultrabay 2000 drive
- Bootable / removable from Ultrabay™ 2000

**CD or DVD-ROM**

- None standard / optional USB Portable Diskette Drive or Ultrabay 2000 drive
- Bootable / removable from Ultrabay™ 2000

**Ultrabay 2000**

- Modular bay for interchangeable devices / cold (system off) swap only
- 15GB or 30GB / 9.5mm / upgradeable / S.M.A.R.T. / 2nd disk support in Ultrabay

**Display**

- 13.1" (337.8mm) XGA (1024x768) TFT color / Active Matrix

**Graphics controller**

- 2x/4x/8x: AT® Rage™ Mobility-M / PCI / 4 MB SDRAM / DDC2B
- 4x/8x/9x: AGP / 64-bit AGP 8X / 8MB SGRAM / 64-bit AGP 8X / with memory

**Graphics - external**

- Ethernet/modem
- Communications Bay
- 8MB SGRAM / 64-bit AGP 8X / memory

**Keyboard**

- 85-key / ThinkPad Button / palm rest / TrackPoint®, Press-to-Select, Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm

**ThinkLight UltraPort® connect**

- Illuminates the keyboard to improve visibility in low-light conditions
- None

**Case material**

- Color: black; Top: ABS plastic; Bottom: glass-fiber reinforced plastic

**Dimensions**

- Approximately 12.0 x 10.0 x 1.4"; 305mm x 254mm x 35mm with battery and CD-ROM: 5.7 lbs / 2.1 kg

**Battery**

- NI-MH 7-cell / 8.4V 4.5AH / intelligent / supports optional Li-ion battery / no support for Ultrabay 2000 battery
- 3.0 hrs (Li-ion 6-cell) / optional NI-MH battery supported only on Celeron models
- 2.3 to 2.6 hrs / 3.2 hrs
- Universal 72 watt / 16VDC 4.5A

**Architecture**

- Intel® 440MX PCIset (824XM/3X3) / combines Host Bridge and PIIX4 in single chip / PCI
- Intel® PCI for CardBus / PCI 2.1 / 32-bit / 33MHz (graphics, IDE, CardBus, audio, USB, PC Card / ISA / no Zoomed Video)
- One USB (Version 1.1) / one serial (9 pin) / parallel / external DB-15 monitor / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or infrared

**AC adapter**

- Optional: ThinkPad Port Replicator

**Docking Station**

- No support for ThinkPad Dock

**PC Card Std slots**

- 1 Type I, Type II, or Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video

**Ports**

- None

**Limited warranty**

- 1 year - EasyServ™ 2655-25U / Ultrabay™ 2000 on-site pickup and delivery courier service
- Service upgrades: provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Service options**

- EasyServ™
- Travel Bezel for Ultrabay 2000
- ThinkPad Removable Diskette Drive
- SuperDisk (LS-240) UltraBay 2000 Drive
- Zip 250MB Ultrabay 2000 Drive
- CD-ROM / CD-RW Drive
- SuperDisk (LS-240) UltraBay 2000 Drive
- CD-RW / CD-RW Drive
- DVD Drive
- ThinkPad Port Replicator
- ThinkPad Monitor Stand
- ThinkPad 72W AC Adapter
- PC Card Std slots
- ThinkPad 72W AC Adapter
- USB Portable Diskette Drive
- ThinkPad Assistant
- ThinkPad Utilities
- ThinkPad Port Replicator
- ThinkPad ThinkVantage Tools
- ThinkPad Access IBM
- ThinkPad CD
- ThinkPad USB Drive

**Operating system preload**

- Windows 98 models:
  - Microsoft® Windows® 98 Second Edition
  - Disk-to-Drive Recovery (in hidden Service Partition)
- Windows 2000 models:
  - Windows 2000 Professional
  - Disk-to-Drive Recovery to Windows 2000 or Windows NT 4.0 (in hidden Service Partition)

**Additional preloaded software**

- Common to all models:
  - ThinkPad Utilities
  - ThinkPad Assistant
  - ConfigSafe®
  - IBM Update ConnectorTM
  - Easy Keys Utility
  - Access ThinkPad II
  - PC-DoctorTM
  - Lotus® SmartSuite™ Millennium and Lotus Notes™ Client 5.0 license

- The right bay (Ultrabay 2000) supports the following:
  - standard or optional CD-ROM
  - optional CD drive
  - optional Zip drive
  - optional SCSI disk drive
  - optional CD-RW
  - optional HDD adapter; for second disk
  - optional ThinkPad Proven™ solutions (such as Travel Bezel)
  - no support for battery on the A26e 2655

**Warranty**

- 1 year - EasyServ™
- 3yr IOR 9x5 NBD
- 3yr IOR 9x5 NBD
- 3yr IOR 9x5 NBD
- 3yr IOR 9x5 NBD
- 3yr IOR 9x5 NBD

**Support**


**Noteworthy**

- This ThinkPad model incorporates various ThinkPad technologies and is designed for use in a variety of environments.
- For information on ThinkPad accessories, please contact your local IBM reseller or visit the IBM ThinkPad website (www.lenovo.com/thinkpad).

**Service information**

- For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227
## ThinkPad A22m - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Spindles</th>
<th>Modular Bay</th>
<th>Comm Bay</th>
<th>Preload</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>2628-PTU</td>
<td>Pentium III 800</td>
<td>64MB</td>
<td>15.0&quot; XGA</td>
<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows® 2000</td>
<td>Apr 2001</td>
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<tr>
<td>2628-PSU</td>
<td>Pentium III 800</td>
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<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
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<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
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<tr>
<td>2628-PZU</td>
<td>Pentium III 800</td>
<td>64MB</td>
<td>15.0&quot; XGA</td>
<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
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<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
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<td>2628-QTU</td>
<td>Pentium III 800</td>
<td>64MB</td>
<td>15.0&quot; XGA</td>
<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
</tr>
<tr>
<td>2628-QVU</td>
<td>Pentium III 800</td>
<td>64MB</td>
<td>15.0&quot; XGA</td>
<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
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<td>10GB*</td>
<td>CD</td>
<td>3 spindle</td>
<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
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<tr>
<td>2628-RSU</td>
<td>Pentium III 850</td>
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<td>15.0&quot; XGA</td>
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<td>CD</td>
<td>3 spindle</td>
<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
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<td>15.0&quot; SXGA+</td>
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<td>DVD</td>
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<td>Ultrabay 2000</td>
<td>Intel®/eth/mod</td>
<td>Windows 98 SE</td>
<td>Apr 2001</td>
<td></td>
</tr>
</tbody>
</table>

**Processor**

- Pentium® III 800, 850, 900MHz or 1.0GHz
- With SpeedStep® technology and 100MHz system bus

**Memory**

- 64MB or 128MB standard / 512MB max. / SD-RAM / non-parity / 100MHz / PC 100 / two 144-pin SO-DIMM sockets / standard memory in one socket / 1 socket available

**Diskette drive**

- 3.5" 1.44MB / not removable

**CD**

- Some: EIDE / 4X-10X* speed / bootable / removable from Ultrabay™/2000

**DVD-ROM**

- Some: DVD-ROM / 2X-3.2X* speed / bootable / removable from Ultrabay 2000

**Display**

- 12.1" (307.3mm) SXGA Monitor (800x600, 65K Active Matrix) / XGA (1024x768) TFT color / Active Matrix
- 15.0" (381.0mm) XGA (1024x768) TFT color / Active Matrix

**Graphics controller**

- Pxx/Qxx/Rxx: ATI® Rage™ Mobility M / AGP 2X / 4MB SDRAM
- Sxx/Txx: ATI Rage Mobility M3 / AGP 2X / 8MB SDRAM

**Keyboard**

- Pitch: 19mm / stroke: 2.7mm / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scrolling
- ThinkLight Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions**

- Approximate weight:
  - 2628-PTU: 25.5lb + 5.0lb (optional HDD adapter, keyboard)
  - 2628-PSU: 25.0lb + 5.0lb (optional HDD adapter, keyboard)

**Architecture**

- 2628-PTU: Intel 440BX AGPset / Intel PIIX4M (EIDE with Ultra DMA/33 or PIO Mode 4 support, ISA Bridge, USB) / TI® PCI13540 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansion) / PC97338 Super I/O / ISA Bridge (diskette, serial, parallel, infrared, ext exp)

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking Station**

- Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slots**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video
- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video
- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PC 100

**Audio support**

- PCI audio / SoundBlaster Pro™ support / CS4264 with CS4297A AC97 codec / stereo speakers / 5 watt / volume up, down, mute buttons / input jack (3.5 mm) / output jack (3.5 mm) / line in

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

- 1 year - EasyServ™ onsite pickup and delivery courier service

**Service options**

- Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including 1 year period)

**Available**

- 2628-PTU
- 2628-PSU
- 2628-PZU
- 2628-QTU
- 2628-QVU
- 2628-RTU
- 2628-RSU
- 2628-TSU
- 2628-TTU
- 2628-TUU
- 2628-TWU
- 2628-TXU

* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

US models withdrawn effective July 2001 or November 2001 or April 2002

No warranties are expressed or implied in this summary (A22M) © IBM Corp. April 2002
### Processor
- **Model**: Lenovo A22m (Spring 2001) - withdrawn

<table>
<thead>
<tr>
<th>Processor Model</th>
<th>Frequency</th>
<th>RAM</th>
<th>Hard Drive</th>
<th>Optical</th>
<th>Spindles</th>
<th>Modular Bay</th>
<th>Comm Bay</th>
<th>Wireless</th>
<th>Preload</th>
<th>Availability</th>
</tr>
</thead>
</table>

### Operating System
- Windows 98 models
  - Microsoft Windows 98 Second Edition
  - Disk-to-Disk Recovery
    - (in hidden Service Partition)
- Windows 2000 models
  - Windows 2000 Professional
  - Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0
    - (in hidden Service Partition)

### Service Options
- **Limited warranty**: 1 year
- **Options**
  - ThinkPad A Series Battery
  - Ultrabay 2000 Li-ion battery
  - ThinkPad 72W AC Adapter
  - Multiple Li-ion/NiMH Battery Charger
  - ThinkPad Port Replicator
  - ThinkPad Dock
  - ThinkPad Monitor Stand 2001
  - Wireless LAN Access Point
  - IBM IEEE 1394 CardBus Card
  - ServicePac 3yr IOR 9x5 NBD
  - ServicePac 3yr P/L P/U Depot

### Common to most models
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe®

### Features
- **Processor**: Intel® Pentium™ III 900MHz or 1.0GHz with SpeedStep™ technology and 100MHz Front Side Bus
- **Memory**: 256KB / onboard (at processor speed) / ECC
- **Video in and out**: S-Video out (no S-Video in)
- **Audio support**: PCI audio / SoundBlaster Pro™ support / CS4624 with AC97 codec / stereo speakers / 5 watt / volume up, down, mute buttons / input jack (3.5mm) / output jack (3.5mm) / line in (3.5mm)
- **Security**: Power-on password / hard disk password / supervisor password / security keyhole

### Operating System Preload
- Windows 98 models
  - Microsoft Windows 98 Second Edition
  - Disk-to-Disk Recovery
    - (in hidden Service Partition)
- Windows 2000 models
  - Windows 2000 Professional
  - Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0
    - (in hidden Service Partition)

### Options
- **64MB SO DIMM 100MHz NP SDRAM**: 20L0254
- **256MB SO DIMM 100MHz NP SDRAM**: 20L0255
- **SuperDisk (LS-240) Ultrabay 2000 Drive**: 09K8616
- **2X-2X DVD Ultrabay 2000 Drive**: 27L3448
- **CD-RW/DVD Combo Ultrabay 2000 Drive**: 09K8617
- **Ultrabay 2000 Li-ion battery**: 02K6649
- **ThinkPad 72W AC Adapter**: 02K6648
- **Multiple Li-ion/NiMH Battery Charger**: 02K6647
- **ThinkPad Port Replicator**: 02K6646
- **ThinkPad Dock**: 263120U
- **ThinkPad Monitor Stand 2001**: 22FS265
- **Portable Drive Bay 2000**: 19K4480
- **Wireless LAN Access Point**: 09N9906
- **IBM IEEE 1394 CardBus Card**: 19K5679
- **ServicePac 3yr IOR 9x5 NBD**: 30L9195
- **ServicePac 3yr P/L P/U Depot**: 30L9192
- **PC 99-compliant**: IBM ImageUltra Services available
- **CIM and DMI 2.0 compliant**: Wired for Management 2.0
- **Local and remote asset manage ment via the IBM Universal Manageability solutions**: IBM ImageUltra Services available
- **IBM Rapid Restore PC available to protect software image and data**: Setup Guide, User’s Reference, Windows manual
- **Asset ID™ wireless RF technology via replacing HDD access door**: Personalized Web-based support
- **IBM Personal Systems Reference (PSREF)**: 24 hour x 7 day toll-free hardware support during the warranty

*For a copy of IBM’s Statement of Limited Warranty, call 1-800-772-2227

*No warranties are expressed or implied in this summary

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## IBM® ThinkPad® A22m Small Business - withdrawn

### Type-model | Processor | MHz | Mem | Screen | Disk | Optical | Spindles | Modular Bay | Comm Bay | Wireless | Preload | Available
---|---|---|---|---|---|---|---|---|---|---|---|---|---
2628-QUU | Pentium III | 800 | 64MB | 12.1" | SVGA | 20G | CD | 3 spindle | Ultrabay 2000 | modern | Windows® | 98 SE SB | Apr 2001

### Positioning Processor
Desktop alternatives covering a range of performance and functionalities:

- **Intel® Pentium® III 800MHz**, 900MHz, or 1GHz with SpeedStep technology and 100MHz front side bus
- **256KB** on-board (at processor speed) / ECC
- **128MB or 256MB standard** / SDRAM - non-parity / 100MHz / PC 100 / two 144-pin SO-DIMM sockets / std memory in one socket / one socket available

### Diskette drive
- **3.5" 1.44MB** / removable
- **30GB / upgradeable** / S.M.A.R.T. / supports 2nd disk in opt HDD adapter

### Display
- **Qxx**: 12.1" (307.3mm) SVGA (800x600) TFT color / Active Matrix
- **Txx/Vxx**: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix

### Graphics controller
- **Qxx**: ATI® Rage Mobility M / AGP 2X / 4MB SDRAM
- **Txx/Vxx**: ATI® Rage Mobility M3 / AGP / 8MB SDRAM

### Architecture
- **Intel 440BX AGPset** / Intel PIIX4M (EIDE with Ultra DMA/33 or PIO Mode 4 support, ISA Bridge, USB) / TI® PCI1450 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext extension) / PC97338 Super I/O / ISA (diskette, serial, parallel, infrared, ext exp)

### Port replicator
- Optional **ThinkPad Port Replicator**

### Audio support
- **PCI audio / SoundBlaster Pro** support / CS4624 with CS4297A AC97 codec / stereo speakers / .5 watt / volume up, down, mute buttons / active D5-15 monitor / infradir (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet)

### Security
- **Power-on password / hard disk password / supervisor password / security keyhole**

### Limited warranty
- **1 year** - EasyServ™ on-site pickup and delivery courier service
- **Service upgrades** provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

### Options
- **64MB SO DIMM 100MHz NP SDRAM**
- **128MB SO DIMM 100MHz NP SDRAM**
- **256MB SO DIMM 100MHz NP SDRAM**
- **SuperDisk (LS-240) Ultrabay 2000 Drive**
- **Zip 250MB Ultrabay 2000 Drive**
- **24X-10X CD-ROM Ultrabay 2000 Drive**
- **8X/4X/24X CD-RW Ultrabay 2000 Drive**
- **CD-RW/DVD Combo Ultrabay 2000 Drive**
- **Travel Bezel for Ultrabay 2000**
- **Second HDD Adapter for Ultrabay 2000**
- **15GB HDD**
- **30GB HDD**
- **32GB HDD**
- **48GB HDD (5400 rpm)**

### Software
- **Windows 98 models**
  - **Microsoft® Windows 98 Second Edition**
  - **Disk-to-Disk Recovery** / (in hiddenService Partition)

### ADDITIONAL PRELOADED SOFTWARE
- **Office 2000 SB models (SB)**
  - **Microsoft Office 2000 Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)**
  - **Office 2000 Small Business CD**

### Common to all models
- **ThinkPad Utilities**
- **ThinkPad Assistant™**
- **ConfiSafe™**
- **IBM Update Connector™**
- **Easy Keys Utility**
- **Access ThinkPad II**
- **PC-Doctor™**
- **Mediamatics™ DVD (DVD models)**
  - **License for Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0**

### OPERATING SYSTEM PRELOAD
- **Windows 98 models**
  - **Windows 98 Professional 13**
  - **Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0**
  - **(in hidden Service Partition)**

### ADDITIONAL PRELOADED SOFTWARE
- **Office XP SB models (XP)**
  - **Microsoft Office XP Small Business**
  - **Microsoft Office Small Business CD**
  - **Office XP Small Business CD**

### The right bay (Ultrabay 2000) supports:
- **standard or optional CD-ROM**
- **standard or optional DVD drive**
- **optional SuperDisk (LS-120) drive**
- **optional Zip drive**
- **optional CD-RW**
- **optional CD-RW/DVD Combo**
- **optional HDD adapter**
- **optional second battery**
- **optional ThinkPadProven™ solutions** (such as Travel Bezel)

72 watt AC Adapter
PC99-compliant
CIM and DMI 2.0 compliant
Wired for Management 2.0
Local and remote asset manage ment via the IBM Universal
Manageability solutions
IBM ImageUltra Services available
IBM Rapid Power PC available to protect software image and data
AsISTRAD™ and IEEE 802.11a wireless RF technology via replacing HDD access door
Personalized Web-based support
International Warranty Service
24 hour x 7 day toll-free hardware support during the warranty

* For a copy of IBM’s Statement of Limited Warranty, call 1-800-772-2227

US models announced July 31, 2001
US models withdrawn effective July 2001 or April 2002

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IBM® ThinkPad™ A22p - withdrawn

Created by IBM PC Institute
Personal Systems Reference (PSREF)

OPERATING SYSTEM PRELOAD ¹⁴, ¹⁷

Windows 98 models
- Microsoft® Windows® 98 Second Edition
  ◊ Disk-to-Disk Recovery
  (in hidden Service Partition)

Windows 2000 models
- Windows 2000 Professional
  ◊ Disk-to-Disk Recovery to
  Windows 2000 or Windows NT 4.0
  (in hidden Service Partition)

ADDITIONAL PRELOADED SOFTWARE

Office 2000 SB models (SB)
- Microsoft Office 2000 Small Business
- Office 2000 Small Business CD

Office XP SB models (XP)
- Microsoft Office XP Small Business™ (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

Common to all models
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector™ ¹⁵
- Easy Keys Utility
- Access ThinkPad II
- PC-Doctor™
- Mediamatics™ DVD (DVD models)
- License for Lotus® SmartSuite® Millenium and Lotus Notes® Client 5.0

PC 99-compliant
CIM and DMI 2.0 compliant
Wired for Managed 2.0
Local and remote asset manage- ment via the IBM Universal Manageability solutions
IBM ImageUltra Services available
IBM Rapid Restore PC available to protect software image and data
Asset ID™ wireless RF technology
Via replaceable HDD access door
Personalized Web-based support
International Warranty Service¹⁷
24 hour x 7 days toll-free hardware support during the warranty

Type-model Processor MHz Memory Screen Disk Optical Spindles Modular Bay Comm Bay preorder

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Spindles</th>
<th>Modular Bay</th>
<th>Comm Bay</th>
<th>Preload</th>
<th>Available</th>
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<tbody>
<tr>
<td>2629-U1U</td>
<td>Pentium III 1GHz²</td>
<td>128MB</td>
<td>15.0” UXGA</td>
<td>32GB</td>
<td>CD-RW</td>
<td>3 spindle</td>
<td>Ultrabay2000</td>
<td>Modern</td>
<td>Windows® 98 SE</td>
<td>Apr 2001</td>
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<tr>
<td>2629-YYT</td>
<td>Pentium III 900MHz</td>
<td>128MB</td>
<td>15.0” UXGA</td>
<td>32GB</td>
<td>DVD</td>
<td>3 spindle</td>
<td>Ultrabay2000</td>
<td>Intel®</td>
<td>Windows 98 SE</td>
<td>May 2001</td>
<td></td>
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</tbody>
</table>

Positioning
Processor
L2 cache
Memory
Display
Graphics controller
Graphics - external
Architecture
Port replicator
Docking Station
PC Card Std slots
Ports
Video in and output
Communications Bay
Modem
Ethernet/modem
Audio support
Security
Limited warranty¹²
Service options

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¹ For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227
² US models withdrawn effective July 2001 or November 2001 or April 2002

No warranties are expressed or implied in this summary

(A22P) © IBM Corp. April 2002
## IBM ThinkPad® A30 (Windows 98) - withdrawn

**Positioning**

- High-performance desktop alternatives with exceptional versatility: three spindle Mobile Intel® Pentium III Processor-M 933MHz, 1.0GHz, or 1.13GHz with enhanced Intel SpeedStep™ technology and 133MHz front side bus

**Processor**

- 2652-1B-U Pentium® III-M 933MHz 128MB 14.1" XGA 20GB CD-ROM and 10/100 Modem
- 2652-1A-U Pentium® III-M 933MHz 128MB 14.1" XGA 20GB CD-ROM and 10/100 Modem
- 2652-3C-U Pentium® III-M 1.0GHz 128MB 15" SXGA+ 30GB DVD-ROM and 802.11b/modem
- 2652-4B-U Pentium® III-M 1.13GHz 128MB 15" XGA 30GB DVD-ROM and 10/100 Modem
- 2652-1B-U Pentium® III-M 933MHz 128MB 15" XGA 30GB DVD-ROM and 10/100 Modem
- 2652-4Q-U Pentium® III-M 1.13GHz 128MB 15" XGA 30GB DVD-ROM and 10/100 Modem

**Diskette drive**

- None standard / use optional Ultrabay™-based or USB-based diskette drive

**DVD-ROM**

- Some: DVD-ROM / 8X-2.3X speed / bootable / removable from Ultrabay Plus

**Modular bays**

- Two modular bays for interchangeable devices / Ultrabay (left side) and Ultrabay Plus (right side) / Ultrabay 2000 left bay empty at ship (uses Travel Bezel) / 20 or 30GB / upgradeable / S.M.A.R.T. / supports two additional disks with optional HDD adapter in each modular bay

**Display**

- 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 200:1 contrast

**Graphics controller**

- ATI® Mobility Radeon™ 7000 / AGP 4X / 16MB DDR-SDRAM 18MHz

**Graphics**

- ATI® Mobility Radeon™ 7000 / AGP 4X / 16MB DDR-SDRAM 18MHz

**Keyboard**

- 87-key / Web navigation keys (6 total, 3 customizable) / ThinkPad Button / palm rest / TrackPoint®, *Press-to-Select,* Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm

**ThinkPad™ UltraPort™**

- UltraPort™ enhances the keyboard to improve visibility in low-light conditions

**Case material**

- Color: black; Top: ABS plastic; Bottom: glass-fiber reinforced plastic

**Dimensions**

- Approximately 13 x 10.7 x 1.8"; 330mm x 272mm x 45.8mm

**Battery type**

- Lithium ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000 (left)

**Battery - life**

- 3.2 hours / universal 72 watt AC adapter

**Architecture**

- Intel 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 8281CAM ICH3-M / I/O Controller Hub (ATA-100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB) / Intel 82802AB Firmware Hub / PCI bus 2.2 32-bit, 33MHz

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking Station**

- Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**Ports**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video

**Video in and out**

- S-video out / industry standard connector / no cable ships standard

**Audio support**

- SoundBlaster Pro™-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / mic input jack / output jack / line in jack

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

- 1 year - EasyServ™ on site pickup and delivery service

**Service options**

- Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

---

**Type-model**

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Ultrabay/CD-ROM</th>
<th>Mini PCI Comm Bay</th>
<th>CDC eehernet</th>
<th>CDC Modem</th>
<th>Preload</th>
<th>Workhorse (W)</th>
<th>Global (G)</th>
<th>Model</th>
<th>Avail date</th>
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</thead>
<tbody>
<tr>
<td>2652-3C-U</td>
<td>Pentium® III-M 1.0GHz</td>
<td>128MB 15&quot; SXGA+</td>
<td>30GB DVD-ROM</td>
<td>802.11b/modem</td>
<td>10/100</td>
<td>Modem Windows® 98 SE</td>
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<td>Oct 2001</td>
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</tr>
</tbody>
</table>

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**SOFTWARE**

- IBM Windows 98 models
  - Microsoft® Windows® 98 Second Edition
  - Disk-to-Disk Recovery (in hidden Service Partition)

**INCLUDED SOFTWARE**

- Preloaded
  - Access ThinkPad
  - ConfigSafe®
  - Mediamatics™ DVD (DVD models)
  - PC-Doctor™
  - ThinkPad Utilities
  - IBM Update Connector™

**Downloadable**

- IBM Rapid Restore
- IBM Data Transfer
- Universal Manageability Services
- License
  - Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

**Ultrabay Plus integrated modular bay**

- supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or zip drive, the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the Workpad® c500 Series

**PC 2001-compliant**

- ACPI 1.0b and 2.0 support
- CIM and DMI 2.0 compliant

**Wired for Management 2.0**

- IBM Universal Manageability solutions
- IBM ImageUltra Services available
- IBM Rapid Restore PC available to protect software image and data

**ServicePac 2 year**

- IBM Personalized Web-based support
- International Warranty Service: 24 hour x 7 day toll-free hardware support during the warranty

---

* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227
** Special ordering only

US models announced October 9 or November 27, 2001

US models withdrawn effective April 2002

(A3098) © IBM Corp. April 2002
<table>
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<tr>
<th>Type-model</th>
<th>Processor Speed</th>
<th>Memory</th>
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<th>Disk</th>
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<th>CDC Modem</th>
<th>CDC Modem ethernet</th>
<th>Preload</th>
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<th>Workhorse or Global model</th>
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<td>30GB</td>
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<td>10/100</td>
<td>Windows XP Professional</td>
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<td>Open</td>
<td>Mod</td>
<td>10/100</td>
<td>Windows XP Professional</td>
<td>No</td>
<td>Nov 2001</td>
<td></td>
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</tbody>
</table>

**Positioning**

High-performance desktop alternatives with exceptional versatility; three spindle

**Processor**

Mobile Intel® Pentium® III Processor-M 933MHz, 1.0GHz, or 1.13GHz with enhanced Intel SpeedStep® technology and 133MHz frontside bus

**L2 cache**

512KB / on die (at processor speed) / ECC

**Memory**

128MB or 256MB std / 1GB max / SDRAM / non-parity / 133MHz / PC 133 / 3.3V / two 144-pin SO-DIMM sockets / std memory in one socket / 1 socket available

**Diskette drive**

None standard / use optional Ultrabay™-based or USB-based diskette drive

**CD-ROM**

Some: CD-ROM / 2X-10X speed / bootable / removable from Ultrabay Plus

**DVD-ROM**

Some: DVD-ROM / 8X-2.3X speed / bootable / removable from Ultrabay Plus

**Modular bays**

Two modular bays for interchangeable devices / Ultrabay 2000 (left side) and Ultrabay Plus (right side) / Ultrabay 2000 left bay empty at ship (uses Travel Bezel) 20 or 30GB / upgradeable / S/M.A.R.T.

**Disk (removable)**

Supports two additional disks with optional HDD adapter in each modular bay

**Display**

14.1" (358,1mm) XGA (1024x768) TFT color / Active Matrix / 200:1 contrast 15.0" (381mm) XGA (1024x768) TFT color / Active Matrix / 200:1 contrast 15.0" (381mm) SXGA+ (1400x1050) TFT color / Active Matrix / 200:1 contrast

**Graphics controller**

ATI® Mobility Radeon™ 7000 / AGP 4X / 16MB DDR-SGRAM 188MHz

**Graphics - external**

Supports external digital monitor via the Digital Video Interface (DVI) port either on the optional docking solutions / DDC/2B / 1600x1200x16.7M colors at 85Hz

**Keyboard**

87-key / Web navigation keys / 6 total, 3 customizable ThinkPad Button / palm rest / Trackpoint® / Press-to-Select®, Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm

**ThinkLight™ UltraPort™**

None

**Case material**

Color: black / Top: ABS plastic / Bottom: glass-fiber reinforced plastic

**Dimensions**

Approximately 13 x 10.7 x 1.8" / 330mm x 272mm x 45.8mm

**Approximate weight**

Battrey: Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000 (left) 3.2 hours / universal 72 watt AC adapter

**Architecture**

Intel 830MP chipset / 82801AM ICH-M I/O Controller Hub (GMCH-M) / 82801CAM ICHS-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, Low Pin Count (LPC) interface, USB) / Inel 82802AB Firmware Hub / PCI bus 2.2 32-bit, 33MHz

**Port replicher**

Optional ThinkPad Port Replicator

**Docking Station**

Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slots**

2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video

**Ports**

Two USB (version 1.1) / one 9-pin serial / parallel / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse

**Video out**

Microsoft® Windows® 2000 / XP

**CDD**

Two Communications Daughter Card (CDC) sockets / customer accessible

**Modern**

Some: 56K/ V.90-capable® CDC modem card / Lucent® chip set

**Wi-Fi/modem**

Some: Mini PCI Wi-Fi® wireless / Interni® Prism 2.5 chipset, diversity antennas in display cover, Wi-Fi-certified / 56K V.90 modem combo, Lucent® chip set

**Ethernet**

10/100 ethernet on Communications Daughter Card / Intel® 82562ET chipset

**Audio support**

SoundBlaster Pro™-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / mic input jack / output jack / line in jack

**Security**

Power-on password / hard disk password / supervisor password / security keyhole /

**Limited warranty**

1 year / EasyServ® on-site pickup and delivery courier service

**Service options**

Service upgrades™ provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**SOFTWARE**

Windows XP Pro models

- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models

- Microsoft Windows 2000 Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE® (all)

**Preloaded**

- Access ThinkPad
- Access Connections
- Access Help
- ConfigSafe
- Mediamatics™ DVD
- PC-Doctor™
- ThinkPad Utilities

**Downloadable**

- IBM Rapid Restore™ PC
- IBM Data Transfer
- Universal Manageability Services™
- IBM Update Connector™

License

- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Office XP Small Business models

- Microsoft Office XP Small Business® (Word, Excel, Outlook, Publisher, Small Business Tools)
- OfficeXP Small Business CD

Ultrasound Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad c500 Series

PC 2001-compliant

ACPI 1.0b and 2.0 support

CIM and DMI 2.0 compliant

Winfors Management 2.0

Local and remote asset manage-ment via the IBM Universal Manageability solutions

IBM ImageUltra Services available

IBM Rapid Restore PC available to protect software image and data


Personalized Web-based support

24 hour x 7 day toll-free hardware support during the warranty

See footnotes for important warranty information; ** Special ordering only

US models announced October 9 or November 27, 2001; US models withdrawn effective August 2002

(A30) IBM Corp. July 2002
<table>
<thead>
<tr>
<th>Positioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
</tr>
<tr>
<td>L2 cache</td>
</tr>
<tr>
<td>Memory</td>
</tr>
<tr>
<td>Diskette drive</td>
</tr>
<tr>
<td>CD-ROM drive</td>
</tr>
<tr>
<td>Modular bays</td>
</tr>
<tr>
<td>Disk (removable)</td>
</tr>
<tr>
<td>Display</td>
</tr>
<tr>
<td>Graphics controller</td>
</tr>
<tr>
<td>Graphics - external</td>
</tr>
<tr>
<td>Keyboard</td>
</tr>
<tr>
<td>ThinkLight UltraPort™</td>
</tr>
<tr>
<td>Case material</td>
</tr>
<tr>
<td>Dimensions</td>
</tr>
<tr>
<td>Approximate weight</td>
</tr>
<tr>
<td>Battery - type</td>
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<tr>
<td>Battery - life</td>
</tr>
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</tr>
<tr>
<td>Service options</td>
</tr>
<tr>
<td>Service upgrades**</td>
</tr>
<tr>
<td>Ultrabay Plus</td>
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</table>

**Preloaded**
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

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See footnotes for important warranty information

US models announced April 30, 2002

US models withdrawn effective October 2002

(A30E) © IBM Corp. October 2002

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*) IBM® ThinkPad® A30 - Education - withdrawn

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SOFTWARE**

Windows XP Pro models
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE (all)

Preloaded
- Access ThinkPad
- Access Connections
- Access Support
- Access Help
- ConfigSafe™
- Mediamatics™ DVD PC-Dock
- Microsoft® Windows® Media Player
- IBM Update ConnectorTM
- ThinkPad Utilities

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent

License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

See footnotes for important warranty information

US models announced April 30, 2002

US models withdrawn effective October 2002

(A30E) © IBM Corp. October 2002

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See footnotes for important warranty information

US models announced April 30, 2002

US models withdrawn effective October 2002

(A30E) © IBM Corp. October 2002

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These educational models of the ThinkPad A30 notebook must be sold only to qualified education customers. Qualified institution/customer is a public or private K-12 (or higher) accredited school organized and operated exclusively for educational purposes for use by Qualified Students and/or Qualified Teachers.

This model for education is for sale direct from IBM or through an Authorized Education Reseller. The model or models for education are not available for resale to any other organization or individual.

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<thead>
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<th>Processor</th>
<th>GHZ</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Ultrabay optical</th>
<th>Mini PCI Comm Bay</th>
<th>CDC ethernet</th>
<th>CDC Bluetooth</th>
<th>Security Chip</th>
<th>Preload</th>
<th>Small business Workhorse software</th>
<th>Avail date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2653-6TU</td>
<td>Pentium III-M 1.2</td>
<td>128MB</td>
<td>15&quot; UXGA</td>
<td>48GB Combo 11b Wi-Fi/802.11b/g</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>Office XP SP2/No Nov 2001</td>
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</table>

**Positioning Processor**
- High-performance desktop alternatives with exceptional versatility; three spindle L2 cache
- 512KB / on die (at processor speed) / ECC
- 3.3v / two 144-pin SO-DIMM sockets / 128MB in one socket / 1 socket available

**Memory**
- 128MB standard / 1GB maximum / SDRAM / non-parity / 133MHz / PC 133 / 3.3v

**Disk drive**
- None standard / use optional Ultrabay+-based or USB-based diskette drive
- Combo drive / CD-ROM / removable from Ultrabay Plus (right side)
- Two modular bays for interchangeable devices / Ultrabay 2000 (left side) and Ultrabay 2000 (right side) / Ultrabay 2000 left bay empty at ship (uses Travel Bezel)
- 48GB / high-speed 5400 rpm / upgradable / S.M.A.R.T. / supports additional two disks with optional HDD adapter in each modular bay

**Display**
- 15.0" (381mm) UXGA-IPS (1600x1200) TFT color / Active Matrix / 400:1 contrast / FlexView display with wide viewing angle and high density using in plane switching (IPS) technology

**Graphics controller**
- ATI Mobility Radeon 7000 / AGP 4X / 32MB DDR-SDRAM 188MHz
- Supports external digital monitor via the Digital Video Interface (DVI) port on either of the optional docking solutions / DDC2B / 1600x1200x1616.7m colors at 85Hz

**Keyboard**
- 87-key / Web navigation keys (6 total, 3 customizable) / ThinkPad Button / palm rest / TrackPoint / 3-Press-to-Select, Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm
- Illuminates the keyboard to improve visibility in low-light conditions

**ThinkLightTM**
- Optional
- Some: Bluetooth wireless technology / on CDC / power button on display
- Some: Mini PCI 11b Wi-Fi wireless / Prism 2.5 chipset, diversity antennas

**ThinkPad Ultrabay Plus**
- Connector on top of display for options such as digital UltraPort Camera
- Color: Black / Top: ABS plastic / Bottom: glass-fiber reinforced plastic

**Dimensions**
- Approximate 13 x 10.7 x 1.8"; 330mm x 272mm x 45.8mm
- with battery and optical drive: 7.6 lb (3.45kg)

**Battery**
- Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000 (left)
- 2.5 hours / universal 72W AC adapter

**Architecture**
- Intel 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M / I/O Controller Hub (ATA-100/66 EIDE, PCI bus, Low Pin Count (LPC) interface, USB [Bluetooth]) / Intel 82802AB Firmware Hub / PCI bus 2.2 32-bit, 33MHz / Intel 810R / Intel 852C52 combo controller, Mini PCI ext expansion) / LPC bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

**Docking Station**
- Optional
- ThinkPad Port Replicator

**PC Card Std slots**
- Optional
- ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)
- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1

**Ports**
- Two USB (version 1.1) / one 9-pin serial / parallel / IEEE 1394 / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ether) / no keyboard/mouse

**Audio support**
- SoundBlaster ProTM-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / input jack (3.5mm) / output jack (3.5mm) / line in jack

**Security**
- Power-on password / hard disk password / supervisor password / security keyhole / Security chip / IBM Embedded Security Subsystem / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security

**Limited warranty**
- 3 years / year battery - EasyServTM onsite pickup and delivery courier service - Service upgrades provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Service options**
- 3 years / year battery - EasyServTM onsite pickup and delivery courier service - Service upgrades provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Included Software**
- IBM Update Connector / 15
- Veritas RecordNOW
- Lotus SmartSuite Millennium and Lotus Notes Client 5.0
- Office XP Small Business models only - Microsoft Office XP Small Business Edition: Word, Excel, Outlook, Publisher, Small Business Tools - Office XP Small Business CD

**Software**
- Windows XP Professional
- IBM Data Transfer
- Universal Manageability Services
- Client Security Software (for security chip)

**License**
- Lotus SmartSuite Millennium and Lotus Notes Client 5.0
- Office XP Small Business models only - Microsoft Office XP Small Business Edition: Word, Excel, Outlook, Publisher, Small Business Tools - Office XP Small Business CD

**Ultrabay Plus**
- Integrated modular bay supports most Ultrabay 2000 devices including CD-ROM/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad c500 Series

**PC 2001-compliant**
- ACPI 1.0b and 2.0 support
- CIM and DMI 2.0 compliant
- Wired for Managed Device
- Local and remote asset management
- Available as IBM Universal Management solutions
- IBM ImageUltra Services available
- IBM Rapid Restore PC available to protect software image and data
- Internal Warranty Service
- 24 hour x 7 day toll-free hardware support during the warranty

**See footnotes for important warranty information**
- US models announced October 9, 2001
- US models withdrawn effective July 2003
IBM UltraPort
ThinkLight
Modular bays
DVD-ROM/CD-RW
Memory
L2 cache
Processor
Positioning
Case material
US models withdrawn effective July 2002
US models announced March 5, 2002
See footnotes for important warranty information

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<th>Memory</th>
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<th>Workhorse or Global model</th>
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<td>IBM Embedded Security Subsystem</td>
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<td>Limited warranty</td>
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SOFTWARE

| Windows XP Pro models | - Microsoft® Windows® XP Professional
| | - Disk-to-Disk Recovery |
| Windows 2000 models | - Microsoft Windows 2000 Professional
| | - ConfigureSafe® |

INCLUDED SOFTWARE (all)

- Preloaded
- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- InterVideo® Win DVD
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™,15
- Veritas RecordNOW

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- Client Security Software (for third-party devices)
- IBM Director Agent

License
- Lotus® SmartSuite® Millennium
- Lotus Notes® Client 5.0

See notes for important warranty information
US models announced March 5, 2002
US models withdrawn effective July 2002

(A31) © IBM Corp. July 2002
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<th>Type-model</th>
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<th>Screen</th>
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</table>

**Positioning Processor**

**Mobile Intel® Pentium® 4 Processor-M 1.6GHz** with enhanced Intel SpeedStep™ technology and 400MHz frontside bus

**L2 cache**

512KB / on die (at processor speed) / ECC

**Memory**

256MB std / 1GB max / PC2100 266Mhz™ DDR-SRAM / non-parity / 2.5v / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Diskette drive**

None standard / use optional Ultrabay™-based or USB-based diskette drive

**CD-ROM drive**

None standard / use optional Ultrabay™-based or USB-based CD-ROM drive

**Modular bays**

(both 12.7mm)

**Display**

15.0" (381mm) XGA (1024x768) TFT color / Active Matrix / 200:1 contrast

**Graphics controller**

ATI Mobility™ RADEON™ 7500 / AGP 4X / 16MB DDR-SRAM 16Mhz

**Memory**

256MB std / 1GB max / PC2100 266Mhz™ DDR-SRAM / non-parity / 2.5v / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Processor**

Pentium® 4-M 1.6GHz

**Case material**

Lithium Ion 6-cell 10.8v 4.0Ah / intelligent battery / supports 2 battery in Ultrabay 2000 2.5 hours / universal 72 watt AC adapter (162Vdc 4.5A)

**Architecture**

Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801AM (ICH-3-M / I/O Controller Hub (ATA-100 IDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (Ricoh R5C552 CardBus/1394 combo controller, Mini PCI, ext expansion) / LPC bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

**Port replicator**

ThinkPad® ThinkPad Port Replicator

**Docking Station**

Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**Battery type**

Lithium Ion 6-cell 10.8v 4.0Ah / intelligent battery / supports 2 battery in Ultrabay 2000 2.5 hours / universal 72 watt AC adapter (162Vdc 4.5A)

**Audio support**

SoundBlaster Pro®-compatible / AD1818 1AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / mic input jack / output jack / line in jack

**Security chip**

ThinkPad® EPP (Enhanced Password Protection) / 87-key / Web navigation keys (6 total, 3 customizable) / ThinkPad Button / palm rest / TrackPoint® / Press-to-Select, Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm / illuminates the keyboard to improve visibility in low-light conditions

**Limited warranty**

1 year - EasyServ®/US, 1st year onsite pickup and delivery courier service

**Software**

Windows XP Pro models
- Microsoft® Windows® XP Professional
  - Disk-to-Disk Recovery (in hidden Service Partition)
Windows 2000 models
- Microsoft Windows 2000 Professional
  - ConfigSafe®
  - Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE (all)

Preloaded
- IBM Rapid Restore™ PC
- IBM Data Transfer
- Client Security Software (for security chip)
- IBM Embedded Security Subsystem

License (CD not included)
- Lotus® SmartSuite® Millennium and Lotus Notes®: Stand-alone Client

Office XP Small Business model only (2652-CTU)
- Microsoft Office XP Small Business® (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo II drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad™ c500 Series

See footnotes for important warranty information

US models announced April 23, 2002

US models withdrawn effective August 2003

(A31A) © IBM Corp. January 2004
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### Software

- **Windows 2000 models**: Microsoft Windows 2000 Professional™
- **ConfigSafe™**: Disk-to-Disk Recovery in (hidden Service Partition)
- **Windows XP Pro models**: Microsoft Windows XP Professional™
- **Disk-to-Disk Recovery in (hidden Service Partition)

### Windows XP Home models

- **Microsoft Windows XP Home Edition™**: Disk-to-Disk Recovery in (hidden Service Partition)

### Included Software

- **Preloaded**
- Access ThinkPad
- Connections Access
- Adobe Acrobat Reader
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™, IBM Veritas® Backup Exec® and DLA (combo models)

### Downloadable

- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent
- Client Security Software (security chip models)

### License (CD not included)

- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

### Office XP Small Business model only (2652-JTU)

- Microsoft Office XP Small Business® (Word, Excel, Outlook, Publisher, Small Business Tools)

### Office XP Small Business CD

- Includes Ultrasound Numeric Keypad and Cradle for the WorkPad® c500 Series

### Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD

- Comb 2 drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

### Additional Notes

- **Limited warranty**: 1 year - EasyServ® onsite pickup and delivery / service upgrades available

### See footnotes for important warranty information

**US models announced March 12, 2003; previous models on June 4, 2002**

**US models withdrawn effective April or October 2003**

(A31J) © IBM Corp. January 2004
### IBM® ThinkPad® A31 (August 2002) - withdrawn

#### Type-model Processor Speed Memory Screen Disk Ultrabay optical Mini PCI wireless/modem CDC ethernet CDC modem Security chip

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#### Operating System

- Windows 2000 Professional
- Windows XP Professional

#### Software

**Windows 2000 models**
- Microsoft® Windows® 2000 Professional
- ConfigSafe
- Disk-To-Disk Recovery

**Windows XP Pro models**
- Microsoft Windows XP Professional
- Disk-To-Disk Recovery

### INCLUDED SOFTWARE® (all)

**Preloaded**
- Access ThinkPad
- Access Connections
- Access Support
- Access Help
- Adobe Acrobat Reader
- e-Doc-Doctor
- ThinkPad Utilities
- IBM Update Connector®
- IBM Veritas® RecordNOW and DLA (combo models)

### Downloadable

- IBM Rapid Restore™ PC
- Software Delivery Assistant
- System Migration Assistant
- IBM Director Agent
- Client Security Software (security chip models)

### License (CD not included)

- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

### Online PC Small Business model only (2652-PTU)

- Microsoft Office XP Small Business Edition® (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

### Limited warranty 1 year - EasyServ® 19 onsite pickup and delivery courier service

#### Service Options

- Service upgrades 2 provide up to five years of onsite or depot repair service

### Preload

- Small Business
- Workhorse or Global model
- Availability

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<th>Preload</th>
<th>Small Business</th>
<th>Workhorse or Global model</th>
<th>Availability</th>
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<td>W G</td>
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<td>Office XP</td>
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**IBM® ThinkPad® A31 (A31G) © IBM Corp. October 2003**

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See footnotes for important warranty information

US models announced August 27, 2002

US models withdrawn effective October 2003

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IBM High Rate Wireless LAN PC Card 128 09N9904

Other options at ibm.com/us/pc/accessories

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Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-R/RW/DVD Combo II drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

PC 2001-compliant

ACPI 1.0b and 2.0 support

CIM and DMI 2.0-compliant

IBM ImageUltra® Services available IBM Rapid Restore PC available to protect software image and data


International Warranty Service 24 hour x 7 days toll-free hardware support during the warranty 2003

---

**SOFTWARE**

### Windows 2000 models

#### Preloaded

- Access ThinkPad
- Access Connections
- Access Support
- Access Help
- Adobe Acrobat Reader
- e-Doc-Doctor
- ThinkPad Utilities
- IBM Update Connector®
- IBM Veritas® RecordNOW and DLA (combo models)

### Downloadable

- IBM Rapid Restore™ PC
- Software Delivery Assistant
- System Migration Assistant
- IBM Director Agent
- Client Security Software (security chip models)

### License (CD not included)

- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

### Online PC Small Business model only (2652-PTU)

- Microsoft Office XP Small Business Edition® (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>Memory</th>
<th>Screen</th>
<th>Graphics</th>
<th>Memory</th>
<th>Ultrabay</th>
<th>Mini PCI</th>
<th>CDC</th>
<th>Security chip</th>
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<td>2652-P6U</td>
<td>Pentium® 4-M 2.0GHz</td>
<td>128MB</td>
<td>14.1&quot; XGA</td>
<td>16MB</td>
<td>20GB²</td>
<td>CD</td>
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<td>Combo</td>
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**Positioning Processor**

- High-performance desktop alternatives with exceptional versatility; three spindle Mobile Intel® Pentium® 4 Processor-M GHz with enhanced Intel SpeedStep™ technology and 400MHz frontside bus

**L2 cache**

- 512KB (on die, at processor speed) / ECC

**Memory**

- 128 or 256MB std, 1GB max / PC2100 DDR-SDRAM / non-paity / 266MHz² / 2.5v / two 200-pin SO-DIMM sockets / std memory in one socket / one slot available

**Diskette drive**

- None standard / use optional UltraBay*-based or USB-based diskette drive

**CD-ROM**

- Some: CD-ROM / 24X-10X speed / bootable / removable from UltraBay Plus

**Modular bays**

- Some: Combo / 16X/8X/24X/8X³ speed / bootable / removable from UltraBay Plus

**Display**

- Supports two additional disks with optional HDD adapter in each modular bay

**Graphics controller**

- ATI Mobility™ RADEON™ 7500 / AGP 4X / DDR-SDRAM 166MHz / 16 or 32MB

**Keyboard**

- 87-key / Web navigation keys (6 total, 3 customizable) / TrackPoint® / "Press-to-Select," Internet Scroll Bar® / pitch: 19mm; stroke: 2.7mm

**ThinkLight™**

- Illuminates the keyboard to improve visibility in low-light conditions / no UltraPort²

**Dimensions**

- Approximately 13.0 x 10.7 x 1.8" / 329mm x 272.5mm x 45.8mm

**Battery - type**

- Lithium ion 6-cell 10.8V 4.0Ah / intelligent / supports 2nd battery in UltraBay 2000

**Docking Station**

- Optional ThinkPad Dock (includes UltraBay and half-size floppy slot)

**PC Card Std slots**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door

**Audio support**

- SoundBlaster Pro™-compatible / AD18811 AC97 codec / stereo speakers / 1 watt / volume, up, down, mute buttons / mic input jack / output jack / line in jack

**Limited warranty²**

- 1 year - EasyServ™¹ / onsite pickup and delivery courier service

**Software**

- Windows XP Pro models
  - Microsoft Windows XP Professional
  - Disk-to-Disk Recovery (in hidden Service Partition)

**Windows XP Home models**

- Microsoft Windows XP Home Edition²
  - ConfigSafe²
  - Disk-to-Disk Recovery (in hidden Service Partition)

**Included Software**

- Preloaded
  - Access ThinkPad
  - Access Connections
  - Access Support
  - Access Help
  - Adobe Acrobat Reader
  - PC-Doctor³
  - ThinkPad Utilities
  - IBM Update Connector¹,¹¹
  - IBM Veritas® RecordNOW and DLA (combo models)

**Downloadable**

- IBM Rapid Restore⁴ PC
  - Software Delivery Assistant
  - System Migration Assistant
  - IBM Director Agent
  - Client Security Software (security chip models)

**License**

- (CD not included)
  - Lotus® SmartSuite™ Millennium and Lotus Notes® Stand-alone Client

See footnotes for important warranty information

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### Positioning Processor
- High-performance desktop alternatives with exceptional versatility; three spindle

### Graphics
- Mobile Intel® Pentium® 4 Processor-M 1.6, 1.8 or 2.0GHz with enhanced Intel SpeedStep® technology and 400MHz frontside bus

### L2 cache
- 312KB / on die (at processor speed)

### Memory
- 128 or 256MB STD / 1GB max / 7200 DDR-SDRAM / non-parity / 266MHz/2.5v / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

### Diskette drive
- CD-ROM
- Compaq
- Dual density
- 1.44MB diskette

### Modular bays
- Both 12.7mm

### Disk (removable)
- 20 or 40GB
- 4200 rpm, 9.5mm / upgradeable / 5.25 M.A.T. / 12.7mm bay

### Display
- 14.1" (358.1mm) XGA (1024x768) TFF color / Matrix / 16MB memory
- Some: 15.0" (381mm) SXGA+ (1400x1050) TFF color / Matrix / 32MB memory / FlexView display with wide viewing angle and high density in plane switching (IPS) technology

### Graphics controller
- ATI Mobility™ RADEON™ 7500 / AGP4X / 16 or 32MB DDR-SGRAM / 166MHz

### Audio support
- CD-ROH
- CDC

### Video out
- Some: 1400x1050 / XGA (1024x768) TFT color / using in plane switching (IPS) technology

### Security
- Power-on password / hard disk password / supervisor password / security keyhole

### Processor
- IBM ImageUltra
- CIM and DMI 2.0-compliant
- ACPI 1.0b and 2.0 support

### Setup Guide, Windows manual

### Access Help

### Access Support

### IBM Director Agent

### Client Security Software (security chip model)

### License (CD not included)
- IBM Director Agent
- Client Security Software (security chip model)

### Optical drives
- Travel Bezel for Ultrabay 2000
- DVD/CD-RW Combo IV Ultrabay 2000
- ThinkPad Multi-Burner Ultrabay 2000 Drive
- IBM USB Portable Diskette Drive
- IBM 256MB USB 2.0 Memory Key
- 20GB Hard Disk Drive
- Second HDD Adapter for Ultrabay 2000
- Dock II
- Mini Dock
- IBM TravelBezel (right side) and Ultrabay 2000 left bay empty at ship (uses Travel Bezel)

### DVD/CD-RW Combo
- Ultrabay 2000 Li-Ion battery
- IBM 256MB USB 2.0 Memory Key
- IBM USB Portable Diskette Drive
- IBM USB Diskette Drive
- IBM High Rate Wireless LAN PC Card
- Bluetooth PC Card from IBM

**SOFTWARE**
- Windows XP Pro models
- Acrobat Reader
- PC-Doctor
- ThinkPad Utilities
- IBM Update Connector

**INCLUDED SOFTWARE**
- Preloaded
  - Access ThinkPad
  - Access Connections
  - Access Support
  - Access Help
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- IBM Data Transfer
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**License (CD not included)**
- Lotus “SmartSuite” Millennium and Lotus Notes® Stand-alone Client

**Limited warranty**
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Positioning

Processor: High-performance desktop alternatives with exceptional versatility; three spindle

L2 cache: 512KB on die (at processor speed)

Memory: 256MB std / 1GB max / PC2100 266MHz DDR SDRAM / non-parity / 2.5V / 2

Disk drive: None standard / use optional Ultrabay™-based or USB-based diskette drive

Modular bays: Two modular bays for interchangeable devices / Ultrabay 2000 (left side) / Ultrabay Plus (right side) / Ultrabay 2000 left bay empty at ship (uses Travel Bezel)

Disk (removable): Supports two additional disk slots with optional HDD adapter in each modular bay

Display: 15.0" (381mm) UXGA-IPS (1600x1200) TFT color / Active Matrix / 40/1 contrast / FlexView display with wide viewing angle and high density using in plane switching (IPS) technology

Graphics controller: ATI Mobility™ FireGL™ 7800 / AGP 4X / 64MB DDR SDRAM 183MHz / supports OpenGL technology for 3D applications

Audio support: Microphone with volume up, down, mute buttons / mic input jack / output jack / line in jack

Security chip: IBM Embedded Security Subsystem

Software


Downloadable: - IBM Rapid Restore® PC - IBM Data Transfer - Client Security Software (models with security chip) - IBM Director Agent License

License: - Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

Office XP Small Business models only: - Microsoft Office XP Small Business® (Word, Excel, Outlook, Publisher, Small Business Tools) - Office XP Small Business CD

Ultrasbay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrasbay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Limited warranty

3 years / 1 year battery - EasyServ™/on-site pickup and delivery service / Ultrasbay Plus service upgrade provides up to three years of onsite depot repair service coverage from date of ThinkPad purchase (including warranty period)

See footnotes for important warranty information

A31P © IBM Corp. July 2002

US models announced March 5, 2002

US models withdrawn effective July 2002
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Ultrabay</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>CDC Ethernet</th>
<th>CDC Mod/Blu</th>
<th>Security Chip</th>
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<th>Small bus</th>
<th>Workhorse</th>
<th>Global model</th>
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<td>Pentium™ 4-M 1.8</td>
<td>533 MHz</td>
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<td>June 2002</td>
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**Positioning**

- High-performance desktop alternatives with exceptional versatility; three spindle Mobile Intel® Pentium™ 4 Processor-M 1.8 GHz with enhanced Intel SpeedStep™ technology and 400 MHz front side bus
- 512 KB / on die (at processor speed) / 128 KB / write-back cache
- 256 MB std / 1GB max / PC2100 DDR-SDRAM / 266 MHz (non-parity) / 2.5 V / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Diskette drive**

- None standard / use optional Ultrabay™-based or USB-based diskette drive
- Combo / hard disk drive removal / bootable / non-removable from Ultrabay Plus
- Two modular bays for interchangeable devices / Ultrabay 2000 (left side) and Ultrabay Plus (right side) / Ultrabay 2000 left bay empty at ship (uses Travel Bezel)
- 60 GB / high-speed 5400 rpm / upgradeable / FRU 5072 A35
- Supports two additional disks with optional HDD adapter in each modular bay

**Display**

- 15.0" (381 mm) UXGA-IPS (1600x1200) TFT color / Active Matrix / 400:1 contrast / FlexView display with wide viewing angle and high density using in plane switching (IPS) technology

**Graphics controller**

- ATI™ Mobility™ FireGL™ 7800 / AGP 4X / 64 MB DDR-SDRAM 183 MHz / supports OpenGL technology for 3D applications

**Graphics - external**

- External monitor support via analog DB-15 connector / up to 2048x1536x16.7M colors at 75 Hz / DDC2B / supports external digital monitor via the Digital Video Interface (DVI) port on either of the optional docking solutions

**Keyboard**

- 87-key / Web navigation keys (6 total, 3 customizable) / ThinkPad Button / palm rest / TrackPoint® / 8 Press-to-Select, Internet Scroll Bar 3+ / pitch: 19mm; stroke: 2.7mm

**ThinkLight™ UltraPort™**

- UltrabrightPlus uses 15% more power to improve visibility in low-light conditions

**Case material**

- Color: black, Top: ABS plastic, Bottom: rubber reinforced plastic

**Dimensions**

- Approximate 13.0 x 10.7 x 1.8" / 329 mm x 272.5 mm x 45.8 mm

**Approximate weight**

- Lithium Ion-6 cell 10.8 V 4.0 Ah / intelligent / supports 2nd battery in Ultrabay 2000
- 2.0 hours with optical drive / 3.1 hours with two 888-MB DVD drives / 267.2 grams / 930 g

**Architecture**

- Intel 4865 MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801CM ICH-3 I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Ethernet, Firmware Hub / PCI bus 2.2-3.2 bit, 33 MHz / Ricoh® R-SC552 CardBus/1394 combo controller, Mini PCI, ext expansion) / PCI bus 33 MHz (PCI87379 Super I / for diskette, serial, parallel, infrared)

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking Station**

- Two Type I, Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / 16-socket Zoom Video (version 1.1) / 1-pin serial / parallel / external DB-15 monitor / infrared (IR) / RJ-45 (ethernet) / IEEE 1394 / keyboard/mouse

**Video in and out**

- S-video in and out ports / industry standard connectors / cable ships standard
- IEEE 1394 Firewire port

**Mini PCI**

- One Mini PCI type III slot (Communications Bay) / upgradeable
- Some: Mini PCI Wi-Fi™ wireless, Intersil® Prism 2.5 chip, dual antennas in display cover(s) (standard), modern combiner, 56K V.92 (V.292) modem, ultrabay 2000 (right side)

**CDC**

- Two Communications Daughter Card (CDC) sockets / customer accessible
- Some: 56K V.92 (V.292) modem, CDC modem / Lucent® chip set

**Ethernet**

- 10/100 ethernet on CDC / Intel 82562ET (physical layer)
- Some: Bluetooth wireless technology / on CDC / power button on display

**Audio support**

- SoundBlaster Pro / compatible / AD1819 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / mic input jack / output jack / line in jack

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole / IBM Embedded Security Subsystem™ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security

**Limited warranty**

- 3 years / 1 year battery / EasyServ® 13 on-site pickup and delivery courier service / Service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Certified software**

- Full list of applications certified to run on the ThinkPad A31p

**Support offered systems**

- Microsoft Windows XP Professional
- Microsoft Windows 98 Second Edition
- Microsoft Windows 98
- Microsoft Windows Millennium Edition
- Microsoft Windows NT® 4.0 SP6a
- Red Hat Linux®
- SuSE Linux

**Downloadable**

- IBM Rapid Restore™
- IBM Data Transfer
- IBM Director Agent
- Client Security Software (security chip models)

**License (CD not included)**

- Lotus® SmartSuite® Millennium and Lotus Notes® Standalone Client

**Office XP Small Business models only**

- License / IBM Director Agent
- IBM Data Transfer
- IBM Director Agent
- Client Security Software (security chip models)
- Office XP Small Business CD

**Supported operating systems**

- Microsoft Windows XP Professional
- Microsoft Windows 2000 Professional
- Microsoft Windows 98 Second Edition
- Microsoft Windows 98
- Microsoft Windows Millennium Edition
- Microsoft Windows NT® 4.0 SP6a
- Red Hat Linux®
- SuSE Linux

**Preloaded software**

- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- InterVideo® Win DVD
- MCI VideoWave 4
- PC-Doctor®
- ThinkPad Utilities
- IBM Update Connector™
- Veritas RecordNOW and DLA

See footnotes for important warranty information

US models announced June 4, 2002
US models withdrawn effective October 2002

(A31PJ) © IBM Corp. October 2002
<table>
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<th>Processor</th>
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<th>Memory</th>
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<th>Workhorse or Avail date</th>
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</table>

**Positioning**

- High-performance desktop alternatives with exceptional versatility; three spindle

**Processor**

- Mobile Intel® Pentium® 4 Processor-M 2.0GHz with enhanced Intel SpeedStep™ technology and 400MHz system bus

**L2 cache**

- 512KB (on die / processor speed) / 8KB (in hidden Service Partition)

**Memory**

- 265MB std / 1GB max / PC2100 DDR-SDRAM / 266MHz non-parity / 2.5V / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Diskette drive**

- No standard / use optional Ultrabay™-based or USB-based diskette drive

**Combo**

- Multiple bays

**Disk (removable)**

- 40GB (9.5mm, 5400 rpm), 60GB (12.5mm, 5400rpm), or 80GB (9.5mm, 4200rpm) / upgradeable and removable / 12.5mm bay / supports two additional disks with optional HDD adapter in each modular bay

**Display**

- 15.0” (381mm) UXGA-IPS (1600x1200) TFT color / Active Matrix / 400:1 contrast / FlexView display with wide viewing angle and high density using IPS technology

**Graphics controller**

- ATI Mobility™ FireGL™ 7800 / AGP 4X / 64MB DDR-SDRAM 183MHz

**Graphics / external**

- Supports OpenGL technology for 3D applications

**Keyboard**

- 87-key / Web navigation keys (6 total, 3 customizable) / ThinkPad Button / palm rest / TrackPoint™, “Press-to-Select,” Internet Scroll Bar™ / pitch: 19mm; stroke: 2.7mm

**ThinkLight™ UltraPort™**

- Illuminates the keyboard to improve visibility in low-light conditions

**Case material**

- Top: ABS plastic; Bottom: glassfiber reinforced plastic

**Dimensions**

- Approximately 13.0 x 10.7 x 1.8”; 329mm x 272.5mm x 45.8mm

**Battery type**

- Lithium Ion 6-cell 10.8V 4.0Ah / intelligent / supports 2nd battery in Ultrabay 2000

**Battery - life**

- 2.0 hours / universal 72 watt acid adapter (16vDC 4.5A)

**Architecture**

- Intel 845MP chipset / 82845MP Memory Controller Hub

**Port replicator**

- Optional ThinkPad Port Replicator or Port Replicator II

**Docking Station**

- Optional ThinkPad Dock or Dock II (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slots**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door latch

**Ports**

- Two USB versions 1.1 or 1.2 / one 9-pin serial / parallel / external DB-15 monitor - infrared (IR) interface / PC Card - IR interface / LAN (in hidden Service Partition) / 19 hotswap bays / 1280x1024 resolution / 32-bit true color

**Audio support**

- SoundBlaster Pro™-compatible / AD1881A 48K 16-bit / stereo speakers / 1 watt / volume up, down, mute buttons / mic input jack / output jack / line in jack

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole / IBM Embedded Security Subsystem™ / hardware key storage / multi-factor authentication / local file encryption / key vault /价值链/ TCG-compliant

**Limited warranty**

- 3 years / 1 year battery - EasyServ™ on-site pickup and delivery courier service

**Software**

- Windows XP Pro models
  - Microsoft® Windows® XP Professional
  - Disk-to-Drive Recovery (in hidden Service Partition)

**Windows 2000 models**

- Microsoft Windows 2000 Professional
  - ConfigSafe™
  - Disk-to-Drive Recovery (in hidden Service Partition)

**Included software**

- Microsoft® Windows® 2000 Professional

**Downloadable**

- IBM Rapid Restore™ PC

**License**

- IBM Update Connector™

**Office XP Small Business models**

- IBM Office XP Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)

**Certified software**

- IBM™, IBM Corp. January 2004

See footnotes for important warranty information
IBM ThinkPad T20 - withdrawn

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<th>Processor</th>
<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
<th>Disk</th>
<th>CD or DVD</th>
<th>Communica Bay</th>
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**Processor**

Intel Mobile Pentium III 650, 700, or 750MHz with Intel SpeedStep technology.

**L2 cache**

128MB standard / 512MB maximum / SDRAM / non-parity / 100MHz / PC 100 / 3.3v / two 144-pin SO-DIMM sockets / 128MB in one socket / 1 socket available

**Diskette drive**

3.5¨ 1.44MB (use in UltraBay 2000 or attach externally with optional cable via parallel/ port)

**CD-ROM**

Some: CD-ROM / 24X-10X speed / bootable / removable from UltraBay2000

**DVD-ROM**

Some: DVD-ROM / 6X-2.3X speed / bootable / removable from UltraBay 2000

**UltraBay 2000**

Modular bay for interchangeable devices / on all A and T Series, ThinkPad Dock

**Disk**

UltraBay 2000

**Display**

13.3¨ (337.8mm) XGA (1024x768) TFT color / Active Matrix

**Graphics controller**

S3 Savage IIX / AGP 2X / 8MB SGRAM / 64-bit path to memory

**Graphics - external**

External SVGA to 1024x768x16.7 million colors at 85Hz and up to 1600x1200

**Keyboard**

ThinkPad Button / palm rest / TrackPoint®, Press-to-Select, Internet Scroll Bar

**Dimensions**

12 x 9.8 x 1.3; 304mm x 250mm x 33.1mm

**Approximate weight**

With CD-ROM drive and battery: 5.0 lbs / with DVD drive and battery: 5.3 lb

**Case material**

Titanium Composite in the top and bottom covers for enhanced strength

**Battery - type**

Lithium Ion 6-cell / intelligent / supports unique 2nd battery in UltraBay 2000

**Battery - life**

4 hours (3.75 hours for Pentium II) 750MHz models

**Charge time**

6.0 hrs / 2.5 hrs

**Architecture**

Intel 440BX AGPset / Intel PIIX4XM (EIDE with Ultra DMA 33 or PIO Mode 4 support, ISA Bridge, USB) / T™ PI1450 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansion) / PC97338 Super I/O / ISA (diskette, serial, parallel, infrared, ext exp)

**Port replicator**

ThinkPad Port Replicator UltraPort connector on top of display for options such as UltraPort Camera

**Docking Station**

ThinkPad Dock (includes UltraBay 2000 and half-size PCI slot)

**PC Card Std slots**

2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video

**Ports**

USB: One (Version 1.1) / Serial: one 9 pin / Parallel: one / keyboard / mouse / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet)

**Other features**

72 watt AC Adapter

**Video out**

S-video out / one industry standard connector / full MPEG-2 support / optional cable for S-video to composite conversion available

**Communications Bay**

Communications Bay with Mini PCI II slot / customer accessible

**Modem**

Some models: 56K V.90 / 56K baud / 28.8K bps / ATA video conversion device

**Ethernet/modem**

Some models: IBM 10/100 Ethernet Min™ PCI Mini Adapter with 56K Modem / Intel or 3Com ethernet chipset / Lucent modem chip set

**Audio support**

PC audio / SoundBlaster Pro™ support / CS4624 with CS497A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack

**Security**

Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

3 year - carry-in or ThinkPad EasyServ™-19 depot repair service via courier

**Service options**

Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Communication Bay**

- IBM 10/100 EtherJet Mini PCI Adapter with 56K Modem by 3Com 09N7774
- IBM 10/100 EtherJet Mini PCI Adapter with 56K Modem 09N3124
- UltraBay 2000 interchangeable accessories 05K9232
- SuperDisk (LS-120) UltraBay 2000 Drive 05K9236
- 24X-10X CD-ROM UltraBay 2000 Drive 05K9233
- 2GB/4GB/8GB/16GB/32GB USB Drive 08K6522
- Zip 250MB UltraBay 2000 Drive 08N8523
- UltraBay 2000 Li-ion battery 02K6646
- Travel Bezel for UltraBay 2000 08K6670

**Wireless connectivity**

- IBM 802.11b Wireless LAN PC Card 09N9863
- IBM 802.11b Wireless LAN Access Point 09N9865

**Software**

- Microsoft Windows 98 Second Edition
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Mediamics DVD Express (if DVD)
- Lotus SmartSuite Millennium and Lotus Notes Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 98 SE)
- Recovery CD-ROM (Windows 95)

**Windows 2000**

- Windows 2000 Professional
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Mediamics DVD Express (if DVD)
- Lotus SmartSuite Millennium and Lotus Notes Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

**Linux**

- Caldera OpenLinux eDesktop™ 2.4
- Access ThinkPad II
- StarOffice
- Netscape Communicator
- OpenLinux eDesktop CD-ROM
- Recovery CD-ROM

**ENERGY STAR**

All trademarks are the property of their respective owners.

* Linux preloaded model does not support most options and has other limitations.

**Models withdrawn from marketing effective February 2001**

No warranties are expressed or implied in this summary.

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IBM ThinkPad T21 - withdrawn

Processor
- Intel® Mobile Pentium™ III 750, 800, or 850MHz with Intel® SpeedStep™ technology and 100MHz system bus
- 2647-27U: 750 MHz, 128MB, 13.3" XGA, 10GB, 24X-10X CD, modem, Win 98SE, Oct 00
- 2647-2BU: 750 MHz, 128MB, 13.3" XGA, 10GB, 24X-10X CD, modem, Win 98SE, Oct 00
- 2647-6U: 800 MHz, 128MB, 14.1" SXGA+, 32GB, 8X-2.3X DVD, modem, Win 98SE, Oct 00
- 2647-4SU: 800 MHz, 128MB, 14.1" SXGA+, 32GB, 8X-2.3X DVD, modem, Win 98SE, Oct 00
- 2647-7U: 800 MHz, 128MB, 14.1" SXGA+, 32GB, 8X-2.3X DVD, modem, Linux®, Oct 00
- 2647-9BU: 850 MHz, 128MB, 14.1" SXGA+, 32GB, 8X-2.3X DVD, modem, Win 98SE, Oct 00

L2 cache: 3.5" x 1.44MB (in UltraBay 2000)
Memory: 256MB / on-board (at processor speed)

Diskette drive: 3.5" x 1.44MB
CD-ROM: Some: CD-ROM / 24X-10X speed / bootable / removable from UltraBay™
- DVD-ROM: Some: DVD-ROM / 8X-2.3X speed / bootable from UltraBay
- UltraBay 2000: Modular bay for interchangeable devices / on all A and T Series, ThinkPad Dock

Display: 13.3" (337.8mm) XGA (1024x768)
- 14.1" (358.1mm) SXGA+ (1280x1024)
- 14.1" (358.1mm) SXGA+ (1280x1024)

Graphics controller: Others: S3® Savage IX8 / AGP 2X / 8MB SGRAM

Keyboard: ThinkPad Button / palm rest / TrackPoint®

Communications Bay
- Modem: 56Kbps / Ethernet Mini PCI adapter with 56K modem (3Com®

Audio support: RCA video conversion cable

Video out: S-video out / one industry standard connector / full MPEG-2 support / optional cable for S-video to composite conversion available

Password: Power-on password / hard disk password / supervisor password / security keyhole

Limited warranty 3 year - EasyServ™ on-site pickup and delivery service courier

Windows 98 Professional
- Microsoft® Windows® 98 Second Edition
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Mediamatics DVD Express (if DVD)
- Lotus® SmartSuite Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Win 98 SE)

Windows 2000 Professional
- Windows 2000 Professional
- ThinkPad Utilities
- ThinkPad Assistant
- ConfigSafe
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
- Mediamatics DVD Express (if DVD)
- Lotus® SmartSuite Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000)
- Recovery CD-ROM (Windows NT)

Linux Preload
- Caldera® OpenLinux™
- eDesktop 2.4
- Access ThinkPad II
- StarOffice
- Netscape Communicator
- IBM Ultraport Camera II
- ThinkPad 72W AC Adapter
- Multiple Li-Ion/NiMH Battery Charger
- ThinkPad T Series Battery
- ThinkPad Dock (A and T Series)
- IBM SystemXtra
ded
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor
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Windows 2000 Professional
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<table>
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<th>Processor</th>
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<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>CD or DVD</th>
<th>Communications Bay</th>
<th>Preload</th>
<th>Available</th>
</tr>
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<tbody>
<tr>
<td>2647-7AU</td>
<td>Pentium III 750</td>
<td>128MB</td>
<td>14.1&quot; XGA</td>
<td>2GB</td>
<td>8X-2.3X DVD</td>
<td>Intel ethernet/modem</td>
<td>Windows 98 SE</td>
<td>Nov 2000</td>
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</table>

**Processor**

- IBM Mobile Pentium III 750, 800, or 850MHz with Intel SpeedStep technology and 100MHz system bus

**L2 cache**

- 256KB / onboard (at processor speed) / ECC

**Memory**

- 128MB standard / 512MB maximum / SDRAM / non-parity / 100MHz / PC 100 / 3.3V / two 144-pin SO-DIMM sockets / 128MB in one socket / 1 socket available

**Diskette drive**

- 3.5".144 MB (use in UltraBay 2000 or attach external with optional cable via parallel port)

**DVD-ROM**

- Some: DVD-ROM / 8X-2.3X speed / bootable / removable from UltraBay 2000

**UltraBay 2000**

- Modular bay for interchangeable devices / on all A and T Series, ThinkPad Dock

**Disk**

- 10GB, 20GB (4200 rpm) or 32GB (High speed 5400 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in UltraBay 2000

**Display**

- 13.3" (337.8mm) XGA (1024x768) TFT color / Active Matrix
- 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix
- 14.1" (358.1mm) SXGA+ (1400x1050) TFT color / Active Matrix

**Graphics controller**

- 750/800MHz: S3 Savage IXB / AGP 2X / 8MB SGRAM / 64-bit path to memory
- Others: S3 SAVAGE IXB+/ AGP 2X / 8MB SGRAM / 64-bit path to memory

**Graphics - external**

- External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

**Keyboard**

- ThinkPad Button

**ThinkLight™**

- Illuminates the keyboard to improve visibility in low-light conditions

**Dimension**

- 12" x 9.8" x 1.3"; 304mm x 250mm x 33.1mm

**Approximate weight**

- with CD or DVD drive and battery: 750MHz: 5.2 lb; 800MHz: 5.3 lb; 850MHz: 5.5 lb

**Case material**

- Titanium Composite in the top and bottom covers for enhanced strength

**Battery - type**

- Lithium Ion (Versel) / intelligent / supports unique 2nd battery in UltraBay 2000

**Battery - life**

- 750MHz: 3.7hr; 800MHz: 3.5hr; 850MHz: 3.2hr

**Architecture**

- Intel 440BX AGPset / Intel PRO/1000 for CardBus / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansion)

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking Station**

- Optional ThinkPad Dock (includes UltraBay 2000 and half-size PCI slot)

**PC Card Std slots**

- 2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed Video

**Ports**

- USB: One (Versel); one 9 pin / Parallel: one / keyboard / mouse / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet)

**Other features**

- 72 watt AC Adapter

**Video output**

- S-video output / one industry standard connector / full MPEG-2 support / optional cable

**Communications Bay**

- Communications Bay with Mini PCI IIb slot / customer accessible

**Modem**

- Some models: 56K V.90 Mini PCI modem card / Lucent chip set

**Ethernet/Modem**

- Some models: IBM 10/100 Ethernet™ Mini PCI Adapter with 56K Modem / IBM Ultraport

**Audio support**

- PCI audio / SoundBlaster Pro™ support / CS4264 / CS4247A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / input jack (3.5mm) / output jack (3.5mm) / line in / jack

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**, Service options**

- EasyServ™ on-site pickup and delivery courier service / Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**UltraBay 2000 interchangeable accessories**

- 8X-2X DVD UltraBay 2000 Drive
- 2X SuperDisk (LS-120) UltraBay 2000
- 20X CD-ROM UltraBay 2000 Drive
- 4X/4X/20X CD-Read/WriteUltraBay 2000 Drive
- Zip 250MB UltraBay 2000 Drive
- UltraBay 2000 Li-ion battery
- Travel Bezel for UltraBay

**WIRELESS connectivity**

- IBM 802.11b Wireless LAN PC Card
- IBM 802.11b Wireless LAN Access Point
- Bluetooth™ PC Card (avail 4Q 2000)

**Other**

- IBM 1394 CardBus Card
- IBM 1GB Microdrive™
- T Series FDD External Cable Kit

**HARDWARE-upgradeable**

- IBM Update Connector
- Optional ThinkPad II
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor™
- Media未必 DVD Express (if DVD)
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Win 98 SE)

**WINDOWS 98 PRELOAD**

- Microsoft® Windows® 98 Second Edition
- Some models: Office 2000 Small Business (Word, Excel, Outlook, Publisher, Small Business Tools) preloaded and CD-ROM
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector™
- Access ThinkPad II
- PC-Doctor™
- Mediamatics DVD Express (if DVD)
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Win 2000 and Windows NT)

**WINDOWS 2000 PRELOAD**

- Windows 2000 Professional
- Some models: Office 2000 Small Business preloaded and CD-ROM
- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector
- Access ThinkPad II
- PC-Doctor™
- Mediamatics DVD Express (if DVD)
- Lotus SmartSuite® Millennium and Lotus Notes® Client 5.0 license
- Software Selections CD-ROM
- Recovery CD-ROM (Windows 2000 and Windows NT)

The right bay (UltraBay 2000) supports the following:

- optional or standard CD-ROM
- optional or standard DVD drive
- optional Zip drive
- optional second battery
- optional SuperDisk (LS-120) drive
- optional CD-RW
- optional HDD adapter: for 2nd disk
- optional travel bezel
- optional ThinkPad Proven™ solutions®

**PC99-compliant**

- CIM and DMI 2.0 compliant
- Wired for Management 2.0

**Local and remote asset management**

- via the IBM Universal Manageability solutions
- IBM Image/eaUltra Services available
- IBM Rapid Restore PC available to protect software image and data
- Asset ID™ wireless RF technology (via installing into disk cover)
- Personalized Web-based support
- International Warranty Service
- 24 hour x 7 day toll-free hardware support during the warranty

**Communication Bay Options**

- IBM 10/100 Ethernet™ Mini PCI Adapter with 56K Modem by 3Com
- IBM 10/100 Ethernet™ Mini PCI Adapter w/ 56K Modem 08K3124

**No warranties are expressed or implied in this summary (T21F) © IBM Corp. April 2002**
**IBM® ThinkPad® T22 - withdrawn**

<table>
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<th>MHz</th>
<th>Mem</th>
<th>Screen</th>
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<td>10G CD-ROM</td>
<td>modem</td>
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<td>10G CD-ROM</td>
<td>Intel/eth/mod</td>
<td>98 SE</td>
<td>Mar 2001</td>
</tr>
</tbody>
</table>

**Processor**

Intel® Mobile Pentium™ III 800, 900MHz± or 1GHz± with Intel SpeedStep™

**Technology and 100MHz system bus**

256KB / onboard (at processor speed) / ECC

**Operating System**

- Windows 98 models
  - Microsoft® Windows® 98 Second Edition
  - Disk-to-Disk Recovery
  - (in hidden Service Partition)

- Windows 2000 models
  - Windows 2000 Professional
  - PC Card Wizard
  - Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0
  - (in hidden Service Partition)

- Linux models
  - Caldera® OpenLinux™
  - eDesktop 2.4
  - StarOffice™
  - Netscape® Communicator
  - OpenLinux eDesktop CD-ROM
  - Recovery CD-ROM

**Hard Drive Options**

- UltraBay 2000
- 30GB HDD
- 15GB HDD
- Travel Bezel for Ultrabay 2000
- CD-RW/DVD Combo Ultrabay 2000 Drive
- 24X-10X CD-ROM Ultrabay 2000 Drive

**Memory Options**

- 64MB SO DIMM
- 128MB SO DIMM
- 256MB SO DIMM
- 512MB SO DIMM
- 1GB/2GB SO DIMM

**Video controller**

- S-video out / one industry standard connector
- full MPEG-2 support / optional cable for S-video to composite conversion available

**Communications Bay**

- Modem options
  - Some: Intel PRO/100 SP Mini PCI Adapter / Mini PCI ethernet with 56K Modem
  - Some: IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem
  - Some: Intel PRO/100 SP Mini PCI Adapter with 56K Modem / Intel 82550GEY ethernet chipset / Lucent modem chipsets

**Audio controller**

- PCI audio / SoundBlaster Pro™ support / CS4624 with CS4297A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

- 3 year - EasyServ™ onsite pick up and delivery courier service

- 24 hour x 7 day toll-free hardware support during the warranty

**Service options**

- Optional service upgrades

**Personal Systems Reference (PSREF)**

IBM Corp. April 2002

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± Windows NT 4.0, Windows 2000

- Caldera® OpenLinux™
- eDesktop 2.4
- StarOffice™
- Netscape® Communicator
- OpenLinux eDesktop CD-ROM
- Recovery CD-ROM

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± Windows NT 4.0, Windows 2000

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- StarOffice™
- Netscape® Communicator
- OpenLinux eDesktop CD-ROM
- Recovery CD-ROM

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### IBM® ThinkPad® T22 Small Business - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>MHz</th>
<th>Memory</th>
<th>Screen</th>
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<th>Optical</th>
<th>Modular Bay</th>
<th>Comm Bay</th>
<th>Preload</th>
<th>Available</th>
</tr>
</thead>
</table>

### Operating System Preload

- **Windows 98 models**
  - Microsoft Windows® 98 Second Edition
  - Disk-to-Disk Recovery (in hidden Service Partition)

- **Windows 2000 models**
  - Windows 2000 Professional
  - Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0 (in hidden Service Partition)

### Additional Preloaded Software

- **Office 2000 SB models (SB)**
  - Microsoft Office 2000 Small Business
  - **Office 2000 Small Business CD

- **Office XP SB models (XP)**
  - Microsoft Office XP Small Business
  - Microsoft Office XP Small Business CD (Word, Excel, Outlook, Publisher, Small Business Tools)
  - **Office XP Small Business CD

### Common to all models

- ThinkPad Utilities
- ThinkPad Assistant™
- ConfigSafe™
- IBM Update Connector™
- Microsoft® Windows®
- ThinkPad® Dock (includes Ultrabay 2000 and half-size PCI slot)
- ThinkPad Port Replicator

### видеоплаты

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ThinkPad Port Replicator</td>
<td>Optional ThinkPad Port Replicator (includes Ultrabay 2000 and half-size PCI slot)</td>
</tr>
</tbody>
</table>

### Графика и видео

- Displays
  - 14.1" (355.1mm) XGA (1024x768) TFT color / Active Matrix
  - 14.1" (355.1mm) SXGA+ (1400x1050) TFT color / Active Matrix
- Graphics controller
  - S3 Savage iX+ / AGP 2X / 8MB SGRAM / 64-bit path to memory
- Graphics - external
  - External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

### Network

- Ethernet
  - IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus
  - IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus

### Power

- Batteries
  - IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus
  - IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus

### Security

- Power-on password
- Hard disk password
- Supervisor password
- Security keyhole

### Warranty

- 3 year - EasyServ™ on-site pickup and delivery river service
- Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period) / visit ibm.com/services/its/us/spawarm.html or call your authorized reseller

### Additional Information

- IBM® ThinkPad® T22 Small Business - withdrawn
- IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus
- IBM® Mobile Pentium® III 900MHz* or 1GHz with Intel SpeedStep™ technology and 100MHz system bus

* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227
* No warranties are expressed or implied in this summary (T22SB) © IBM Corp. April 2002

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**No models withdrawn effective November 2001 or April 2002**
### IBM ThinkPad T23 - withdrawn

#### Specifications

**Type-model** | **Processor** | **Speed** | **Memory** | **Screen** | **Disk** | **Optical** | **Mini PCI** | **Security Chip** | **Communications Daughter Card** | **Preload** | **Available**
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2647-6KU | Pentium III-M 1.3GHz | 128MB | 13.3" XGA | 250GB Hard Disk Drive | 512KB | CD-ROM | Modem | Ethernet | Windows 98 SE | Jul 2001

**Positioning**

*The perfect balance of performance and portability*

**Processor**

Mobile Intel Pentium III Processor-M 866MHz or 1.13GHz with enhanced Intel SpeedStep technology and 133MHz front side bus

**L2 cache**

512KB / on die (at processor speed) / ECC

**Memory**

128MB standard / 1GB maximum / SDRAM / non-parity / 133MHz / PC 133 / 3.3v / two 144-pin SO-DIMM sockets / 128MB in one socket / one socket available

**Diskette drive**

3.5" 1.44MB (use in Ultrabay 2000 or attach ext with optional cable via parallel port)

**CD-ROM**

Some: CD-ROM / 2X/10X speed / bootable / removable from Ultrabay

**DVD-ROM**

Some: DVD-ROM / 8X-3.3X speed / bootable / removable from Ultrabay 2000

**Ultrabay2000**

Modular bay for interchangeable devices

**Disk**

15GB* (4200 rpm) or 48GB (5400 rpm) / upgradable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay 2000

**Display**

Some: 13.3" (337.8mm) XGA (1024x768) TFT color / Active Matrix
Some: 14.1" (358.1mm) SXGA+ (1400x1050) TFT color / Active Matrix
All: Easy-open cover to unlatch and open with one hand

**Graphics controller**

S3® SuperSavage/IXC16 / AGP 4X / 16MB SDRAM

**Graphics - external**

External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

**Keyboard**

85-key / ThinkPad Button / palm rest / TrackPoint® / Select-to-Senset

**ThinkLight**

Illuminates the keyboard to improve visibility in low-light conditions

**UltraPort™**

UltraPort connector on top of display for options such as digital UltraPort Camera

**Dimensions**

xKx: 12.0" x 9.8" x 1.3"; xLx: 12.1" x 9.8" x 1.3"

**Approximate weight**

With optical drive and battery: 2Kx/6Kx: 5.4 lbs; 5Kx/9Kx: 5.45 lbs; 5Lx/9Lx: 5.5 lbs

**Battery - type**

Titanium Composite in the top and bottom covers for enhanced strength

**Battery - life**

Lithium Ion 6-cell / 10.8V 3.6AH / intelligent / supports unique 2nd battery in Ultrabay

**AC adapter**

Universal 72 watt / 16VDC 4.5A

**Architecture**

Intel 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82810AM CHIP-M I/O Controller Hub (ATA-100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB) / E82802AC Firmware Hub / PCI bus 2.2 32-bit, 33MHz (T1 PCl1420 CardBus, Mini PCI, external expansion) / PCI bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

**Docking Station**

2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video

**PC Card Std slots**

Two Type I, Type II, or Type III / CardBus 32-bit / PCMCIA 2.1 / 1 no Zoomed Video

**Ports**

Wired for Management 2.0 / CIM and DMI 2.0-compliant / PC 99-compliant

**Video out**

S-video out / one industry standard connector / full MPEG-2 support / optional cable for S-video to composite conversion available

**Mini PCI**

Mini PCI llb slot / customer accessible

**CDC**

One Communications Daughter Card socket (used by ethernet)

**Modem**

xKx: Mini PCI 56K V.90 modem card / Lucent chipset

**802.11b/modem**

xLx: Mini PCI 802.11b wireless, Intel 82112.5 chipset, diversity antennas in display cover, Wi-Fi-certified / 56K V.90 modem combo, Lucent chipset

**Ethernet**

10/100 ethernet on Communications Daughter Card / Intel® 82562ET chipset

**Audio support**

Soft audio / ICH AC97 controller / SoundBlaster compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / line in jack (3.5 mm)

**Security**

Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**

3 year - EasyServ® onsite pickup and delivery courier service

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* For a copy of IBM’s Statement of Limited Warranty, call 1-800-772-2227

**SOFTWARE**

**Windows 98 models**

- Microsoft® Windows® 98 Second Edition
- Disk-to-Disk Recovery (in hidden Service Partition)

**Windows 2000 models**

- Windows 2000 Professional
- PC Card Wizard
- Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0 (in hidden Service Partition)

**INCLUDED SOFTWARE**

- IBM Backup and Restore
- IBM Data Transfer
- Universal Manageability Services
- IBM Update Connector™
- Client Security Software 2.0 (models with security chip)
- License
- Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

**Office XP Small Business models**

- Microsoft Office XP Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business

---

*No warranties are expressed or implied in this summary*

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*IBM T23 - April 2002*
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>Preload</th>
<th>Small business software</th>
<th>Workhorse (W) or Global (G) (model)</th>
<th>Avail date</th>
</tr>
</thead>
</table>

### Positioning

The perfect balance of performance and portability; two-spindle system

### Processor

Mobile Intel® Pentium® III Processor-1.13 or 1.2GHz with enhanced Intel SpeedStep technology and 133MHz frontside bus

### L2 cache

512KB / on (at processor speed) / ECC

### Memory

128MB standard / 1GB maximum / SDRAM / non-parity / 133MHz / PC 133 / 3.3v / two 14-pin SO-DIMM sockets / 128MB in one socket / one socket available

### Diskette drive

3.5” 1.44MB (use in either Ulitabay® or attach with express cable via parallel port)

### CD-ROM

Some: CD-ROM / 8X/4X/2X Max / removable from Ulitabay 2000

### DVD-ROM

Some: DVD-ROM / 8X/3X-3X Max / removable from Ulitabay 2000

### Ultrabay 2000

One modular bay for interchangeable devices (right side) / Ultrabay Plus-compatible

### Disk

30GB (4200 rpm) or 48GB (5400 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay 2000

### Display

14.1” (358.14 mm) XGA (1024x768) TFT color / Active Matrix

### Graphics controller

S3 Graphics® SuperSavage / IX16 / AGP 4X / 16MB SDRAM

### Keyboard

85-key / ThinkPad Button / palm rest / TrackPoint®, “Press-to-Select,” Internet Scroll Bar® / pitch: 19mm; stroke: 2.7mm

### ThinkLight™ UltraPort™

UltraPort connector on top of display for options such as digital UltraPort Camera

### Dimensions

Wi-Fi® models: 12.1” x 9.8” x 1.3”; Others: 12.0” x 9.8” x 1.3”

### Approximate weight

with optical drive and battery: Gxx/8xx/4xx: 5.2 lbs; Hxx/9xx/5xx: 5.5 lbs

### Case material

Lithium Ion-6 cell / intelligent / supports unique 2nd battery in Ultrabay 2000

### Battery - type

Li-ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000

### Battery - life

3 hrs 11 minutes to 3 hrs 30 minutes depending on model

### AC adapter

Universal 72 watt / 16/DC 4.5A

### Architecture

Intel 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82801AM Chipset M / I/O Controller Hub (ATA-100/133 / IDE, PCI bus, Low Pin Count (LPC) interface, USB) / E82802AC Firmware Hub / PCI bus 2.32-bit, 33MHz (T1® PCI1420 CardBus, Mini PCI, external expansion) / LPC bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

### Docking Station

Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

### PC Card Std slots

2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1

### Ports

Two USB (Version 1.1) / 9-pin serial / parallel / keyboard / mouse / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / some: RJ-45 (ethernet)

### Video out

Mini PCI

One Mini PCI type III slot (Communications Daughter Card (CDC) socket / customer accessible

### Modem

Some: Mini PCI 56K V.90 (9.2-designed)® modem card / Lucent® chipset

### Case material

Some: Mini PCI 11b Wi-Fi®/modem

### Audio support

Some: 10/100 ethernet on Communications Daughter Card / Intel® 82562ETchipset

### Security

Power-on password / hard disk password / supervisor password / security keyhole

### Security chip

IBM Embedded Security Subsystem® / hardware key storage / multi-factor authentication / local file encryption / enhances VPD security

### Limited warranty

3 years / 1 year battery - EasyServ®

### Software

- **Windows XP Pro models**
  - Microsoft Windows XP Professional
  - Disk-to-Disk Recovery (in hidden Service Partition)

- **Windows 2000 models**
  - Microsoft Windows 2000 Professional
  - Disk-to-Disk Recovery to Windows 2000 or Windows NT 4.0 (in hidden Service Partition)

### Downloadable

- **IBM Rapid Restore**
- **IBM Data Transfer**
  - Universal Manageability Services
  - IBM Update Connector
  - Client Security Software (models with security chip)

### License

- **Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0**

### Office XP Small Business models only

- **Microsoft Office XP Small Business** (Word, Excel, Outlook, Publisher, Small Business Tools)
  - **Office XP Small Business CD**

### Ultrabay Plus

Integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the Workpad® c500 Series

### ServicePac

19 onsite pickup and delivery service

### International Warranty Service

- Access Connections
- Access Help
- ConfigureSafe
- Microsoft Windows 2000
- IBM Update Connector
- Client Security Software (models with security chip)

### IBM Data Transfer

- Microsoft Windows XP
- Microsoft Windows 2000
- Microsoft Windows 98

### IBM Rapid Restore

- Universal Manageability Services
- IBM Update Connector
- Client Security Software (models with security chip)

### Client Security Software

- IBM Rapid Restore PC available to...
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>CDD</th>
<th>Security Chip</th>
<th>Small business software</th>
<th>Workhorse (Global)</th>
<th>Avail Date</th>
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</thead>
<tbody>
<tr>
<td>2647-6RU</td>
<td>Pentium III-M</td>
<td>1.0</td>
<td>128MB</td>
<td>14.1&quot; XGA</td>
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<td>CD-ROM</td>
<td>Modem</td>
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<td>XP Pro</td>
<td>2002</td>
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<td>2647-9RU</td>
<td>Pentium III-M</td>
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<td>256MB</td>
<td>14.1&quot; SXGA+</td>
<td>60GB</td>
<td>CD/CD-RW</td>
<td>Modem</td>
<td>Ethernet</td>
<td>XP Pro</td>
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<td>CD/CD-RW</td>
<td>Ethernet</td>
<td>XP Pro</td>
<td>Office XP SP8®</td>
<td></td>
<td>2002</td>
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</tr>
</tbody>
</table>

**Positioning**

Mobile Intel® Pentium III Processor M 1.0 or 1.2GHz with enhanced Intel SpeedStep™ technology and 133MHz frontside bus

**L2 cache**

512KB / on die (at processor speed) / EC

**Memory**

128MB or 256MB standard / 1GB max / SDRAM / non-parity / 133MHz / PC 133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available

**Diskette drive**

3.5" 1.44MB (use in either Ultrabay™ or attach ext with optional cable via parallel port) / Some: CD-ROM / 2x/4x/10x / removable from Ultrabay 2000

**CD-ROM/DVD-ROM/CD-/DVD-RW**


**Ultrabay 2000**

One modular bay for interchangeable devices (right side) / Ultrabay Plus-compatible

**Disk**

20GB® (4200 rpm) or 60GB (5400 rpm) / upgradable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay 2000

**Dimensions**

Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix

Some: 14.1" (358.1mm) SXGA+ (1400x1050) TFT color / Active Matrix

All: Easy-open cover to unlatch and open with one hand (two latches)

**Graphics controller**

S3 Graphics™ SuperSavage / IXC16 / AGP 4X / 1MB SDRAM

**Graphics - external**

External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

**Keyboard**

55-key / ThinkPad Button / palm rest / TrackPoint® / "Press-to-Select" / Internet Scroll Bar® / pitch: 19mm; stroke: 2.7mm (standard-size keys)

ThinkLight™

UltraPort™

**UltraPort**

Connector on top of display for options such as digital UltraPort Camera

**Dimensions²**

Wi-Fi®/modem: 12.1" x 9.8" x 1.3"; Others: 12.0" x 9.8" x 1.3"

**Approximate weight³**

with optical drive and battery: 2Rx/6Rx: 5.05 lbs (2.29kg); 26Rx/9Rx: 5.58 lbs (2.53kg)

**Case material**

Titanium Composite in bottom cover for enhanced strength

**Battery - type**

Lithium Ion 6-cell / intelligent / supports 2nd battery in Ultrabay 2000

**Battery - life**

3.1 hrs to 3.5 hours depending on model

**Architecture**

Intel 830MP chipset / 82803MP Graphics Memory Controller Hub (GMCH-M) / 82801AM ICH3-M-I/Controller Hub (ATA/100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB) / EB8202AC Firmware Hub / PCI bus 2.2/3.3 MHz (TI® PCI1420 CardBus, Mini PCI, external expansion) / LPC bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

**Docking Station**

Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slots**

2 Type I, 2 Type II, or 1 Type III / Card Bus 32-bit / PCMCIA 2.1

**Ports**


**Video out**

S-video out port (TV out) / one industry standard connector

**Mini PCI**

One Mini PCI type III slot (Communications Bay) / customer upgradable

**Cam**

One Communications Daughter Card / customer accessible

**Modem**

Some: Mini PCI 56K V.90 (92-designed™) modem card / Lucent® chip

Some: Mini PCI 11b Wi-Fi®/modem

**Ethernet**

10/100 Ethernet or 100/100 Ethernet Communications Daughter Card / Intel® 82562ET/Chipset

**Audio support**

Soft audio / ICH AC97 controller / SoundBlaster-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5mm) / headphone jack (3.5mm) / line in (jack 3.5mm)

**Security**


**Limited warranty”²”

3 years / 1 year battery / EasyServ™ on site pickup and delivery courier service

**Software**

- Windows XP Pro models
  - Microsoft Windows XP Professional
  - Disk-to-Disk Recovery
  - (in hidden Service Partition)

- Windows 2000 models
  - Microsoft Windows 2000 Professional
  - ConfigSafe™
  - Disk-to-Disk Recovery to Windows 2000 and Windows NT 4.0
  - (in hidden Service Partition)

**Included Software**

- Access ThinkPad
  - Access Connections
  - Access Help
  - Access Support

- MediaPac™ DVD (DVD models)

- PC-Doctor™

- ThinkPad Utilities

- Veritas Registry Now (CD-RW mod)

- IBM Software Installer

- IBM Update Connector™

**Downloadable**

- IBM Rapid Restore™ PC

- IBM Data Transfers

- Universal Manageability Services™

- Client Security Software (models with security chip)

**License**

Lotus SmartSuite® Millennium and Lotus Notes® Client 5.0

**Office XP Small Business models only**

- Microsoft Office XP Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)

- Office XP Small Business CD

**Ultrasound Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD

**Comodo drive, diskette drive, Zip drive:**

- the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

**Universal 72 watt AC adapter**

- PC 99-compliant

- CIM and DMI 2.0-compliant

- PXE 2.0-compliant

- Wired for Management 2.0

- Local and remote asset manage

- ment via the IBM Universal Manageability solutions

- IBM ImageUltra™ Services available

- IBM Rapid Restore PC available to protect software image and data

- Asset ID™ wireless RF technology (via installing into disk cover)

- International Warranty Service

- 24 hour / 7 day toll-free support during the warranty

See footnotes for important warranty information

US models announced January 22 or February 7, 2002

US models withdrawn effective July 2002 or July 2003

(T23J) © IBM Corp. July 2003
This educational model of the ThinkPad T23 notebook must be sold only to qualified education customers. Qualified institution/customer is a public or private K-12 (or higher) accredited school organized and operated exclusively for educational purposes for use by Qualified Students and/or Qualified Teachers.

This model for education is for sale direct from IBM or through an Authorized Education Reseller. The model or models for education are not available for resale to any other organization or individual.

**SOFTWARE**

- Windows XP Pro models
  - Microsoft® Windows® XP Professional®
  - Disk-to-Disk Recovery
    - (in hidden Service Partition)

**INCLUDED SOFTWARE**

- IBM Rapid Restore™
- IBM Data Transfer
- IBM Director Agent

**License**

- Lotus® SmartSuite®
- Lotus Notes®
- Client 5.0

**Television**

- MONITOR: 14.1” (356.8mm) XGA (1024x768) TFT color / Active Matrix / easy-open cover to unlatch and open with one hand (two latches)

**Graphics controller**

- S3 Graphics® SuperSavage / IXC16 / AGP 4X / 16MB SDRAM

**Graphics - external**

- External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

**Keyboard**

- 85-key / ThinkPad Button / palm rest / TrackPoint®, “Press-to-Select,”
- Internet Scroll Bar® / pitch: 19mm; stroke: 2.7mm (standard-size keys)

**ThinkLight™**

- Illuminates the keyboard to improve visibility in low-light conditions

**UltraPort™**

- UltraPort connector on top of display for options such as digital UltraPort Camera

**Dimensions**

- 12.1” x 9.8” x 1.3” (305 mm x 250 mm x 33.1 mm)

**Approximate weight**

- 3.1 lbs (2.4kg)

**Battery - life**

- 3 years / 1 year battery - EasyServ™ / on-site pickup and delivery courier service

**Limited warranty**

- 3 years / 1 year battery - EasyServ™ / on-site pickup and delivery courier service

**Service options**

- Service upgrades provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Type-model**

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>CDC</th>
<th>Security Chip</th>
<th>Preload</th>
<th>Workhorse (W) or Global (G) model</th>
<th>Avail date</th>
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</thead>
<tbody>
<tr>
<td>2647-GGU Pentium® III-M 1.0 256MB</td>
<td>14.1” XGA 20GB®</td>
<td>DVD/CD-RW 11b-Wi-Fi®/mod</td>
<td>Ethernet</td>
<td>No</td>
<td>Windows® XP Pro</td>
<td>No Apr 2002</td>
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<td>No Apr 2002</td>
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<td>No Apr 2002</td>
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See footnotes for important warranty information

US model announced April 30, 2002
US model withdrawn effective July 2003
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<th>Type-model</th>
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<td>Office XP SB®</td>
<td>W Apr 2002</td>
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</table>

Positioning Processor
Mobile Intel® Pentium® III Processor-M 1.2GHz with enhanced Intel SpeedStep™ technology and 133MHz frontside bus

L2 cache 512KB / on die (at processor speed) / ECC

Memory 256MB standard / 1GB max / SDRAM / non-parity / 133MHz / PC 133 / 3.3V / two 144-pin SO-DIMM sockets / 256MB in one socket / one socket available

Diskette drive One modular bay for interchangeable devices (right side) / Ultrabay Plus-compatible


Display 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / easy-open cover to unlatch and open with one hand

Graphics controller S3 Graphics® SuperSavage / XC16 / AGP 4X / 16MB SDRAM

Graphics - external External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

Keyboard 85-key / ThinkPad Button / palm rest / TrackPoint® / "Press-to-Select," Internet Scroll Bar® / pitch: 19mm; stroke: 2.7mm (standard-size keys)

ThinkLight™ / UltraPort™ Illuminates the keyboard to improve visibility in low-light conditions

Dimensions³ Wi-Fi®/models: 12.1" x 9.8" x 1.3"; Other (4RU/8RU): 12.0" x 9.8" x 1.3"; with optical drive and battery: 5.17 lbs (2.34kg)

Approximate weight²

Case material Titanium Composite in the top and bottom covers for enhanced strength

Battery - type Lithium ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000

Battery - life¹ ±3.5 hrs; ±3.5 hrs / ±4.3 hrs / ±4.3 hrs

Architecture Intel® 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82801 CAM ICH3-M/I Controller Hub (ATA-100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB) / E82802AC Firmware Hub / PCI bus 2.2 32-bit, 33MHz (T1 PCI14420 CardBus, Mini PCI, external expansion) / LPC bus 33MHz (PCI7392 Super I/O for diskette, serial, parallel, infrared)

Docking Station Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

PC Card Std slots Type II, 1 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1

Ports Two USB (Version 1.1) / 9-pin serial / parallel / keyboard / mouse / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet)

Video out S-video out port (TV out) / one industry standard connector

Mini PCI One Mini PCI type III slot (Communications Bay) / customer upgradeable

Codec One Communications Daughter Card (CDC) socket / customer accessible

Some: Mini PCI 11b Wi-Fi®/modem / 2.4GHz wireless LAN in display cover, Wi-Fi-certified / 56K V.90 modem combo, Lucent® chipset

Ultrabay Plus integrated modular bay supports most Ultrabay 2000 devices including CD-ROM/DVD/CD combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

Audio support Soft audio / ICH AC97 controller / SoundBlaster-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5mm) / headphone jack (3.5mm) / line in jack (3.5mm) / line out jack (3.5mm)

Security Power-on password / hard disk password / supervisor password / security keyhole

Limited warranty²

Service options 3 years / 1 year battery - EasyServ™ on-site pickup and delivery service coverage from date of ThinkPad purchase (including warranty period)

Service upgrade² provides up to five years of onsite or depot repair service coverage

SOFTWARE²

Windows XP Pro models
- Microsoft® Windows™ XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional
- ConfigSafe™
- Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE² (all)

Preloaded
- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe® Acrobat Reader
- Mediaimatics™ DVD (DVD models)
- PC-Doctor™
- ThinkPad Utilities
- Veritas RecordNOW (CD-ROM mod)
- IBM Software Installer
- IBM Update Connector™,™,™

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- IBM Director Agent

License (CD not included)
- Lotus™ SmartSuite™ Millennium and Lotus Notes® Client 5.0

Office XP Small Business mode only (2647-4RU)
- Microsoft Office XP Small Business™ (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

Universal 72 watt AC adapter

PC 99-compliant

CIM and DMI 2.0-compliant

PXE 2.0-compliant

Local and remote asset management

Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the WorkPad® c500 Series

See footnotes for important warranty information

US models announced April 23, 2002

US models withdrawn effective July 2003

(T23S) © IBM Corp. July 2003
## IBM ThinkPad T23 (June 2002) - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>Cache</th>
<th>Memory</th>
<th>Disk</th>
<th>Optical</th>
<th>Diskette Drive</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>CDC</th>
<th>Preload</th>
<th>Workhorse (W) or Global (G) model</th>
<th>Avail date</th>
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<tbody>
<tr>
<td>2647-7GU</td>
<td>Pentium® III-M</td>
<td>450 Mhz</td>
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<td>10 GB</td>
<td>DVD/CD-RW</td>
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**Positioning**
The perfect balance of performance and portability: two-sindle system

**Processor**
Mobile Intel® Pentium® III Processor-M 1.0 or 1.13GHz with enhanced Intel SpeedStep™ technology and 133MHz frontside bus

**L2 cache**
512 KB / on die (at processor speed) / ECC

**Memory**
256 MB standard / 512 MB max / SDRAM / non-parity / 133MHz / PC133-compliant / 3.3V / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available

**Diskette drive**
Some: 3.5” 1.44MB (use in Ultrabay™ or attach ext with optional cable via parallel port)

**CD-ROM**
Some: CD-ROM / 24x-10x* / removable from Ultrabay 2000

**DVD-ROM/CD-RW**
Some: Combo / DVD-ROM/CD-RW / 8x/8x/24x/8x* speed / removable from Ultrabay 2000

**Disk**
One modular bay for interchangeable devices (right side) / Ultrabay Plus-compatible

**Display**
Some: 14.1” (358.1mm) XGA (1024x768) TFT color / Active Matrix
Some: 14.1” (358.1mm) SXGA+(1400x1050) TFT color / Active Matrix
All: Easy-open cover to unlatch and open with one hand (two latches)

**Graphics controller**
S3 Graphics® SuperSavage / IX16 / AGP 4X / 16MB SDRAM

**Graphics - external**
External SVGA to various modes such as 16.7 million colors, 85Hz, 1600X1200

**Keyboard**
5-key / ThinkPad Button / palm rest / TrackPoint®; *Press-to-Select,* Internet Scroll Bar®; *pitch: 19mm; stroke: 2.7mm (standard-size keys)

**ThinkLight™**
Illuminates the keyboard to improve visibility in low-light conditions

**ThinkPad UltraPort™**
UltraPort connector on top of display for options such as digital UltraPort Camera

**Dimensions**
12.1” x 9.8” x 1.3”; Others: 12.0” x 9.8” x 1.3”

**Approximate weight**
With optical drive and battery: T44 (CD-ROM model): 5.13 lbs (2.3kg);
74U/2NU (Wi-Fi model): 5.42 lbs (2.46kg); 4U2/4U3 (SXGA+ models): 5.45 (2.47kg);
Others: 5.37 lbs (2.43kg)

**Case material**
Titanium Composite in the top and bottom covers for enhanced strength

**Battery - type**
Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000

**Battery - life**
3.1 hrs to 3.5 hrs depending on model

**Architecture**
Intel® 830MP chipset / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB / E82802AC Firmware Hub / PCI bus 2.232-bit, 33MHz (TI® PCI1420 CardBus, Mini PCI, external expansion) / LPC bus 33MHz (PC87392 Super I/O for diskette, serial, parallel, infrared)

**Docking Station**
Optional ThinkPad Dock

**PC Card Std slots**
Typical: 1 Type II, 2 Type II, or 1 Type III CardBus 32-bit / PCI-Express A.2

**Ports**
Two USB (Version 1.1) / 9-pin serial / parallel / keyboard / mouse / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / some: RJ-45 (ethernet)

**Video out**
S-video out port (TV out) / one industry standard connector

**Modem**
One Mini PCI type III slot (Communications Bay) / customer upgradeable

**Audio support**
Soft audio / ICH AC97 controller / SoundBlaster-compatible / CS4299 AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / line in jack (3.5 mm)

**Security**
Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**
3 years / 1 year battery - EasyServ™ onsite pickup and delivery courier service

**See footnotes for important warranty information**

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*T23N © IBM Corp. July 2003*
**Type-model** | **Processor** | **Speed** | **Memory** | **Screen** | **Disk** | **Mini PCI Comm Bay** | **CDC** | **Security Chip** | **Preload** | **Small business software** | **Avail date**
---|---|---|---|---|---|---|---|---|---|---|---

**Positioning**
Processor: The perfect balance of performance and portability; two-spindle system
Mobile Intel Pentium III Processor 1.0 or 1.13GHz with enhanced Intel SpeedStep technology and 133MHz frontside bus

**L2 cache**: 512KB on die (at processor speed) / ECC

**Memory**: 128MB standard / 1GB max / SDRAM - non-parity / 133MHz / PC 133 / 3.3v / two 144-pin SO-DIMM sockets / std mem in one socket / one socket available

**Diskette drive**: 3.5" 1.44MB (use in either Ultrabay or attach ext with optional cable via parallel port)

**Disk-ROM**: DVD-ROM / 8X-3.3X speed / bootable / removable from Ultrabay 2000

**Ultrabay 2000**: One modular bay for interchangeable devices (right side) / Ultrabay Plus-compatible

**Drive**: 20GB or 30GB (4200 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay 2000

**Display**: 14.1" (385.8mm) XGA (1024x768) TFT color / Active Matrix / easy-open cover to unlatch and open with one hand

**Graphics controller**

**Graphics - external**

S3 Graphics SuperSavage / IXC16 / AGP 4X / 16MB SDRAM

External SVGA to various modes such as 16.7 million colors, 85Hz, 1600x1200

**Keyboard**: 85-key / ThinkPad Button / palm rest / TrackPoint / "Press-to-Select," Internet Scroll Bar / pitch: 19mm; stroke: 2.7mm (standard-size keys)

**ThinkLight UltraPort**: Illuminates the keyboard to improve visibility in low-light conditions

**ThinkPad Port Replicator (includes Ultrabay 2000 and half-size PCI slot)**

**Video out**

S-video out port (TV out) / one industry standard connector

**Audio out**

Soft audio / ICH AC97 controller / SoundBlaster-compatible / CS4299 AC97 codec / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / line in jack (3.5 mm)

**Security chip**

Power-on password / hard disk password / supervisor password / security keyhole:

**Limited warranty**

3 years / 1 year battery - EasyServ on-site pickup and delivery courier service

Service upgrades provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Software**

Windows XP Pro models
- Microsoft Windows XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional
- ConfigSafe
- Disk-to-Disk Recovery (in hidden Service Partition)

INCLUDED SOFTWARE (all)

Preloaded
- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Mediamatics DVD (DVD models)
- PC-Doctor
- ThinkPad Utilities
- IBM Software Installer
- IBM Update Connector

Downloadable
- IBM Rapid Restore PC
- IBM Data Transfer
- Universal Manageability Services

License
- Lotus SmartSuite Millennium and Lotus Notes Client 5.0

Office XP Small Business
- Microsoft Office XP Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

Ultraport Plus integrated modular bay supports most Ultrabay 2000 devices including CD-RW/DVD Combo drive, diskette drive, or Zip drive; the optional Ultrabay Plus Device Carrier adds potential functionality by supporting the Ultrabay Plus Numeric Keypad and Cradle for the Workpad c500 Series

Universal 72 watt AC adapter

PC 99-compliant

CIM and DMI 2.0-compliant

PXE 2.0-compliant

Wired for Management 2.0

Local and remote asset management via the IBM Universal Manageability solutions

IBM ImageUltra Services available

IBM Rapid Restore PC available to protect software image and data

Asset ID wireless rf technology (via installing into disk cover)

Personalized Web-based support

International Warranty Service

24 hour 7 days a week free hardware support during the warranty

See footnotes for important warranty information

US models announced August 13, 2002

US models withdrawn effective April 2003
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**Positioning**

The perfect balance of performance and portability; two-spindle system

**Dimensions**

12.0” x 9.8” x 1.4”; 304mm x 250mm x 36.6mm

**Weight**

3.5 lbs; 1590g

**Battery**

Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay 2000

**Security**

IBM Embedded Security Subsystem 2.0

**Lithium Ion 6-cell / intelligent** / supports unique 2nd battery in Ultrabay 2000

**Security Chip**

HDD Shock Absorber

**Hard Disk**

80GB Hard Disk 9.5mm (4200 rpm) or 5400 rpm)

**Video out**

- S-video out port (TV out)
- industry standard connector

**Audio**

Soft audio / ICH AC97 controller / SoundBlaster Pro®-compatible / AD1811A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / line in jack (3.5 mm)

**Power**

Power-on password / hard disk password / password lock / security keyhole

**Software**

- IBM Rapid Restore PC available to Windows XP Pro models
- Microsoft Office XP Small Business
- IBM Rapid Restore PC available to IBM Personal Systems Reference (PSREF)
- IBM PC Institute

**Operating System**

Windows XP Professional

**Security Features**

- System-specific info in Personal Systems Reference (PSREF)
- IBM Personal Systems Security Reference (PSREF)
- IBM Rapid Restore PC available to Windows XP Pro models
- IBM Personal Systems Reference (PSREF)

**Retail Price**

3 years/1 year battery - EasyServ® onsite pickup and delivery service
### IBM ThinkPad T30 (Windows 2000) - withdrawn

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<td>40G</td>
<td>Yes 11b Wi-Fi/</td>
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<td>W2000</td>
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<td>W2000</td>
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<td>Modern</td>
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<td>W2000</td>
<td>W G</td>
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<td>Modern</td>
<td>10/100</td>
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<td>10/100</td>
<td>W2000</td>
<td>W G</td>
<td>May 2002</td>
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</table>

#### Software

- **Windows 2000 models**
  - Microsoft Windows® 2000 Professional
  - ConfigSafe
  - Disk-to-Disk Recovery
  - (in hidden Service Partition)

- **Included Software** (all)
  - Preloaded
    - Access ThinkPad
    - Access Connections
    - Access Help
    - Access Support
    - Adobe Acrobat Reader
    - Inteview DVD/WinDVD (DVD models)
    - PC-Doctor
    - ThinkPad Utilities
    - Veritas RecordNOW (CD-ROM model)
    - IBM Update Connector

- **Downloadable**
  - IBM Rapid Restore PC
  - IBM Data Transfer
  - IBM Director Agent
  - Client Security Software (models with security chip)

- **License** (CD not included)
  - Lotus® SmarSuite® Millennium and Lotus Notes® Stand-alone Client

- **Office XP Small Business model only**
  - Microsoft Office XP Small Business
  - Office XP Stand-alone Client

- **UltraBay Plus integrated modular bay supports most UltraBay 2000 devices including CD-ROM/DVD Combo drive, diskette drive, or Zip drive; the optional UltraBay Plus Device Carrier adds potential functionality by supporting the UltraBay Plus Numeric Keypad and External Wireless Device Slot**

- **Universal 72 watt AC adapter**

#### Limited warranty

- **3 years**
- **1 year battery** - EasyServ
  - onsite pickup and delivery service

#### See footnotes for important warranty information

* UltraNav-based systems have 9.5mm bay

(© IBM Corporation 2000)
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk GB</th>
<th>UltraNav™</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>Comm Bay</th>
<th>LCD</th>
<th>Battery - life</th>
<th>Preload</th>
<th>Small business or Global software</th>
<th>Workbench (W)</th>
<th>Avail date</th>
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<tr>
<td>2366-66U</td>
<td>Pentium®-M 2.0 256MB 14.1&quot; XGA 40GB SODIMM 256MB in one socket / one socket available</td>
<td>256MB standard dual AGB max / PCI100 266MHz SDR-DDRAM - non-parity / CL2.5 / two 200-pin SO-DIMM sockets / 256MB in one socket / one socket available</td>
<td>None standard / use optional UltraBT™-based or USB-based diskette drive</td>
<td>40GB SODIMM</td>
<td>Yes</td>
<td>Open (wireless upg)</td>
<td>11b/W-FI™/modem</td>
<td>Open</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>W G</td>
<td>Aug 2002</td>
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<tr>
<td>2366-68U</td>
<td>Pentium®-M 2.0 256MB 14.1&quot; XGA 40GB SODIMM 256MB in one socket / one socket available</td>
<td>256MB standard dual AGB max / PCI100 266MHz SDR-DDRAM - non-parity / CL2.5 / two 200-pin SO-DIMM sockets / 256MB in one socket / one socket available</td>
<td>None standard / use optional UltraBT™-based or USB-based diskette drive</td>
<td>40GB SODIMM</td>
<td>Yes</td>
<td>Open (wireless upg)</td>
<td>11b/W-Fi™</td>
<td>Open</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>W G</td>
<td>Aug 2002</td>
<td></td>
</tr>
<tr>
<td>2366-69U</td>
<td>Pentium®-M 1.9 256MB 14.1&quot; XGA 40GB SODIMM 256MB in one socket / one socket available</td>
<td>256MB standard dual AGB max / PCI100 266MHz SDR-DDRAM - non-parity / CL2.5 / two 200-pin SO-DIMM sockets / 256MB in one socket / one socket available</td>
<td>None standard / use optional UltraBT™-based or USB-based diskette drive</td>
<td>40GB SODIMM</td>
<td>Yes</td>
<td>Open (wireless upg)</td>
<td>11b/W-Fi™</td>
<td>Open</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>W G</td>
<td>Aug 2002</td>
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<tr>
<td>2366-86U</td>
<td>Pentium®-M 2.0 256MB 14.1&quot; XGA 40GB SODIMM 256MB in one socket / one socket available</td>
<td>256MB standard dual AGB max / PCI100 266MHz SDR-DDRAM - non-parity / CL2.5 / two 200-pin SO-DIMM sockets / 256MB in one socket / one socket available</td>
<td>None standard / use optional UltraBT™-based or USB-based diskette drive</td>
<td>40GB SODIMM</td>
<td>Yes</td>
<td>Open (wireless upg)</td>
<td>11b/W-FI™/modem</td>
<td>Open</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>W G</td>
<td>Aug 2002</td>
<td></td>
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<tr>
<td>2366-94U</td>
<td>Pentium®-M 2.0 256MB 14.1&quot; XGA 40GB SODIMM 256MB in one socket / one socket available</td>
<td>256MB standard dual AGB max / PCI100 266MHz SDR-DDRAM - non-parity / CL2.5 / two 200-pin SO-DIMM sockets / 256MB in one socket / one socket available</td>
<td>None standard / use optional UltraBT™-based or USB-based diskette drive</td>
<td>40GB SODIMM</td>
<td>Yes</td>
<td>Open (wireless upg)</td>
<td>11b/W-FI™/modem</td>
<td>Open</td>
<td>10/100</td>
<td>Yes</td>
<td>XP Pro</td>
<td>W G</td>
<td>Aug 2002</td>
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</table>

**Software**

- Windows XP Pro models
  - Microsoft® Windows® XP Preface
  - Disk-to-Desk Recovery

**Included Software (all)**

**Preloaded**

- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- IBM Rapid Restore™ PC
- InterVideo WinDVD (DVD models)
- PC-Doctor™
- ThinkPad Utilities
- Veritas RecordNOW (Commodities mod)
- IBM Update Connector™

- Downloadable
  - IBM Director Agent
  - Software Delivery Assistant
  - System Migration Assistant
  - Client Security Software (models with security chip)

**License (CD not included)**

- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

**Office XP Small Business model only (2366-C6U)**

- Microsoft Office XP Small Business™ (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

**Universal 72 watt AC adapter**

**Asset ID (system-specific info in chip accessed over network)**

**PC-2001-compliant**

**ACPI 1.0b and 2.0-compliant**

**CDM and DMI 2.0-compliant**

**FXE 2.0-compliant**

**IBM ImageUltra™ Services available**

IBM Rapid Restore PC available to support software image and data International Warranty Service™

**4 hour x 7 day toll-free hardware support during the warranty**

**Limited warranty**

3 years/1 year battery - EasyServ™ onsite pickup and delivery courier service

See footnotes for important warranty information

* UltraNav-based systems have 9cm 5mm bay

**T30 (August 2002) - withdrawn**

US models announced August 27, 2002

US models withdrawn effective April 2003, October 2003, or January 2004

(370A) © IBM Corp. January 2004
IBM Security chip
Audio support
Dimensions
CDC
Video out
Battery - type
Touch pad
Graphics controller
Disk
Display
Graphics controller - external
Keyboard
Trackpoint
Touch pad
ThinkLight
Dimensions
Approximate weight
Case material
Battery - type
Battery - life
Architecture
Docking Station
PC Card Std slots
Video out
Mini PCI
Wireless upg
CPU
Modem
Bluetooth
Audio support
Security
Security chip
Limited warranty
Service options
128 MB PC2100 DDR-SDRAM CL2.5 SOD 10K0028
Portable Drive Bay 2000 (accepts Ultrabay 2000) 2000 media and storage devices 19K4480
ThinkPad T30 Series Li-ion battery 02K7050
ThinkPad TravelMate Plus Carrier 22P5737
ThinkPad Ultrabay Plus Numeric Keypad 22P5730
SuperDisk (LS-240) Ultrabay 2000 08K9616
ThinkPad 72W 72D AC Adapter 02K6699
ThinkPad 2000 Drive 09K8253
24X-10X CD-ROM Ultrabay 2000 Drive 09K5293
Ultralight 8X Max DVD Ultrabay 2000 22P9102
CD-RW/DVD Combo IV Ultrabay 2000 Drive 08K6689
Second HDD Adapter for Ultrabay 2000 09K5293
ThinkPad Removable Diskette Drive 08K9363
IBM USB Portable Diskette Drive 05K9276
IBM 11a/b/g Wireless CardBus Adapter 31P9101
IBM 128 MB USB 2.0 Memory Key 22P9092
IBM 256 MB USB 2.0 Memory Key 22P9092
IBM Portable USB 2.0 CD Writer Adaptor 22P5297
ThinkPad USB 2.0 PC CardBus Adapter 33L3245
Other options at ibm.com/pc/us/accessories
Universal 72 watt ac adapter
Asset ID™ (system-specific info in chip accessed over network)
PC 2001-compliant
ACPI 1.0b and 2.0-compliant
CIM and DMI 2.0-compliant
PXE 2.0-compliant
IBM ImageUltra™ Services available
IBM Rapid Restore PC available to protect software image and data
International Warranty Service™
24 hour x 7 day toll-free hardware support during the warranty

IBM ThinkPad T30 (January 2003) - withdrawn

Type-model
2366-FBU Pentium® 4-M 2.2 256MB 14.1” XGA 40HS
2366-JBU Pentium® 4-M 2.4 256MB 14.1” SXGA+ 40G
2366-JCU Pentium® 4-M 2.2 256MB 14.1” SXGA+ 40HS

Speed GHz Memory Screen
2.2 256MB 14.1” XGA 40HS
2.4 256MB 14.1” SXGA+ 40G
2.2 256MB 14.1” SXGA+ 40HS

Disk Optical Comm Bay Comm Bus/write wireless/modem

UltrNav™ touch pad

Mini PCI Comm Bay Modem

CDC modem or Bluetooth

Ethernet on planar

Security chip

Preload

Workhorse (W) or Global (G) or Entry (E)

Avail date

10/100
Yes
XP Pro
W G
Jan 2003

10/100
Yes
XP Pro
W G
Jan 2003

10/100
Yes
XP Pro
Jan 2003

10/100
Yes
XP Pro
Sept 2003

- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- IBM Rapid Restore™
- InterVideo WinDVD
- PC-Doctor™
- ThinkPad Utilities
- Veritas RescueNOW
- IBM Update Connector™

License (CD not included)
- Lotus® SmartSuite® Millennium and Lotus® Notes® Stand-alone Client

Preload

- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- IBM Rapid Restore™
- InterVideo WinDVD
- PC-Doctor™
- ThinkPad Utilities
- Veritas RescueNOW
- IBM Update Connector™

Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Management Assistant
- Client Security Software

Software

Windows XP Pro models
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery (in hidden Service Partition)

ServicePac

- 5yr P&L P/U Depot
- Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/massplug.pdf

ServicePac

- 2yir IOR 9x5 NBD 30L190
- 3yr IOR 9x5 NBD 30L197
- 4yr IOR 9x5 NBD 69P198
- 5yr IOR 9x5 NBD 69P200
- 4yr P&L P/U Depot 69P199
- 5yr P&L P/U Depot 69P201

Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/massplug.pdf

See footnotes for important warranty information
US models announced on January 28 or September 17, 2003
US models withdrawn effective January 2004

(T30J) © IBM Corp. January 2004

IBM® ThinkPad® T30 (January 2003) - withdrawn

Created by IBM PC Institute
Personal Systems Reference (PSREF)
**Type-model** | **Processor** | **Speed/GHz** | **Memory** | **Screen** | **Disk GB** | **Optical** | **UltraNav™ touch pad** | **Mini PCI** | **CDC modem or Bluetooth** | **Ethernet** | **Security Chip** | **Preload** | **Small business or Global (G) Software** | **Workhorse (W)** | **Availability**
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
2366-56U Pentium® 4-M 2.0 256MB 14.1" SXGA+ 60GB Combo Yes Open (wireless upg) Modern 10/100 Yes W2000 None No Aug 2002
2366-57U Pentium® 4-M 2.0 256MB 14.1" SXGA+ 60GB Combo Yes 11b Wi-Fi/modem Bluetooth 10/100 Yes W2000 None No Aug 2002

### Positioning
- **Mobile Intel® Pentium® 4 Processor**
- 2.0 GHz with enhanced Intel SpeedStep® technology
- 400MHz front-side bus
- 512KB on die (at processor speed)
- **256MB standard** / 1GB max / **PC2100 266MHz DDR**-non-parity / **CL2.5** / two 20-pin SO-DIMM sockets / 256MB in one socket / one available

### Diskette drive
- **Combi Ultrabay 2000**
- None standard / use optional Ultrabay™-based or USB-based diskette drive
- **60GB** (4200 rpm) 9.5mm high (not high speed 5400 rpm) / upgradeable / S.M.A.R.T. / supports 2nd disk with optional HDD Adapter in Ultrabay 2000 / HDD Shock Absorber

### Display
- 14.1" (358.1mm) SXGA+ (1400x1050) TFT color / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand

### Graphics controller
- ATi Mobility™ RADEON™ 7500 / AGP 4X / 16MB DDR-SDRAM 364MHz
- **56K** V.90 V.92-designed modem in CDC / Agere
- **UltraNav** multi-pointing system / trackpoint button below keyboard / Tap Zones illuminates the keyboard to improve visibility in low-light conditions / no UltraPort™

### Dimensions
- 12.0" x 9.8" x 1.4": 304mm x 250mm x 36.6mm with optical drive and battery: 5.33 to 5.67 lbs (2.42 to 2.57 kg) depending on model

### Architecture
- Intel 845MP chipset / 82845MP Memory Controller Hub (MCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100 EIDE, Pcie bus, ethernet MAC, Low Pin Count (LPC) interface, USB [Bluetooth]. Firmware Hub) / Pci bus 2.2 32-bit, 33MHz (T1: PCI 150Mbps CardBus controller, Mini PCI, extended bus)
- **LPC bus 33MHz (security chip): PC78392 Super I/O for diskette, serial, par, infrared**

### Docking Station
- Optional **ThinkPad Dock** (includes Ultrabay 2000 and half-size PCI slot)
- **CardBus** 32-bit / PCMCIA 2.1
- **Two USB** (Version 1.1) / 9-pin serial / parallel / external DB-15 monitor / infrared

### Video out
- **8-viewport** output (TV out) / one industry standard connector
- Mini PCI 11b Wi-Fi modem

### Wireless
- **60GB** - 56K V.90 V.92-designed modem in CDC
- **Intel PRO/Wireless LAN with Intermec® Prism 2.5 chipset, dual antennas in display cover, Wi-Fi certified**
- **S-video out port** (TV out) / one industry standard connector

### Security
- IBM Embedded Security Subsystem 2.0 / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security / TCG-compliant

### Limited warranty
- **3 years / 1 year battery** - easyServ™ onsite pickup and delivery courier service
- Service upgrades provide up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

### SOFTWARE
**Windows 2000 models**
- Microsoft® Windows® 2000 Professional
- **ConfigSafe**
- **Disk-to-Disk Recovery** (in hidden Service Partition)

### INCLUDED SOFTWARE** (all)
**Preloaded**
- Access ThinkPad
- Access Connections
- Access Help
- Access Support
- Adobe Acrobat Reader
- IBM Rapid Restore™ PC
- InterVideo WinDVD (DVD models)
- **PC-Doctor**
- ThinkPad Utilities
- Veritas RecordNOW (Combo mod)
- IBM Update Connector™

**Downloadable**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (models with security chip)

### License
- **CD not included**
- Lotus® SmartSuite® Millennium and Workstation Suite with Microsoft® Office
- IBM Director Agent
- IBM Port Replicator
- Intel® PRO/Wireless 3000 series network adapter
- UltraNav drive device carrier

**Universal 72 watt AC adapter**
- **Asset ID** and **Client Security Software** (models with security chip)
- **Proactive e-mail updates**
- 24 hour / 7 day** toll-free hardware support during the warranty**

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*See footnotes for important warranty information*

US models announced August 27, 2002

US models withdrawn effective April 2003

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(T30W2KA) © IBM Corp. March 2003
<table>
<thead>
<tr>
<th>Positioning</th>
<th>Processor</th>
<th>Speed</th>
<th>Memory</th>
<th>Screen</th>
<th>Diskette drive</th>
<th>Mini PCI</th>
<th>Support</th>
<th>Ethernet</th>
<th>Security Chip</th>
<th>Workhorse (W)</th>
<th>Warranty (Y)</th>
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<td>2366-B1U</td>
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<td>40G</td>
<td>Combo</td>
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<td>11b-Wi-Fi</td>
<td>Bluetooth</td>
<td>No</td>
<td>Windows XP</td>
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<td>256MB</td>
<td>14&quot;, XGA</td>
<td>40HS</td>
<td>Combo</td>
<td>Yes</td>
<td>11b-Wi-Fi</td>
<td>Open</td>
<td>10/100</td>
<td>No</td>
<td>Windows XP</td>
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This educational model of the ThinkPad T30 notebook must be sold only to qualified education customers. Quality authorization/certification is a customer or a public K-12 (or higher) accredited school organized and operated exclusively for educational use by Qualified Students and/or Qualified Teachers.

This model for education is for sale direct from IBM or through an Authorized Education Reseller. The model or models for education are not available for resale to any other organization or individual.

### SOFTWARE

- Window XP Pro Multi
  - Microsoft Windows XP Professional
  - Disk-to-Desk Recovery (in hidden Service Partition)

### INCLUDED SOFTWARE

- IBM Applications
- Access Connections
- Access Help
- Acrobat Reader
- Intervideo WinDVD
- IBM Rapid Restore
- PC Doctor
- ThinkPad Utilities
- Veritas RecordNow
- IBM Update Connector

### Downloadable

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- IBM Client Security Software (for security chip)

### License

- Lotus SmartSuite Millennium and Lotus Notes Stand-alone Client

### Mobility

- 14.1" (356mm) XGA (1024x768) TFT color | Active Matrix | 150 nits

### Display

- ATI Mobility Radeon 7500 | AGP 4X | 16MB DDR SDRAM 166MHz

### Graphics controller

- External monitor support via analog DB-15 connector / up to 2048x1536x16.7 colors at 75Hz / DDC2B / supports external digital monitor via the Digital Video Interface (DVI) port on either of the optional docking solutions

### Keyboard

- TrackPoint pointing device | "Press-to-Select", Internet Scroll Bar
- UltraNav multi-pointing system / touchpad below keyboard / Tap Zones

### Dimensions

- 12.0" x 9.8" x 1.4"; 304mm x 250mm x 36.6mm

### Video out

- S-video out port (TV out) / industry standard connector
- One Mini PCI type III slot (Communications Bay) / customer upgradable to Mini PCI II 11b-Wi-Fi wireless
- IBM PRO/Wireless LAN with Intel 82562 Chipset

### Docking Station

- Optional ThinkPad Dock (includes UltraBay 2000 and half-size PCI slot)
- Two Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1

### Audio support

- Soft audio / ICH AC97 controller / SoundBlaster Pro-compatible / AD1881A AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / line in jack (3.5 mm)

### Security

- Power-on password / hard disk password / supervisor password / security keyhole
- B2U: IBM Embedded Security Subsystem 2.0 / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security / TCG-compliant

### Limited warranty

- 3 years / 1 year battery - EasyServ™ onsite pickup and delivery service

### Service options

- Service upgrade provides up to five years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

### Models

- 128 MB PCI2100 DDR SDRAM CL2.5 SOD 10K0028
- 256 MB PCI2100 DDR SDRAM CL2.5 SOD 10K0029
- 512 MB PCI2100 DDR SDRAM CL2.5 SOD 10K0032
- IBM ThinkPad Ultrabay Plus Laptop Carrier 22P5737
- ThinkPad Ultrabay Plus Numeric Keypad 22P7330
- SuperDisk (LS-240) 08K9616
- Zip 250MB Ultrabay 2000 00N8253
- 24X-10X CD-ROM Ultrabay 2000 Drive 05K9233
- Ultrabay 8X Max DVD Ultrabay 2000 02P9102
- CD-RW/DVD Combo IV Ultrabay 2000 22P6991
- Second HDD Adapter for Ultrabay 2000 08K6068
- Other options at ibm.com/pu/pc/us/accessories

### See footnotes for important warranty information

US models announced on April 30 or November 19, 2002
US models withdrawn effective October 2003
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Graphics controller</th>
<th>Disk</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>Battery</th>
<th>Workhorse (W)</th>
<th>Availability</th>
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<td>14.1&quot; SXGA+</td>
<td>80 GB</td>
<td>11a/b Wi-Fi²</td>
<td>Mod/Blue</td>
<td>Gigabit</td>
<td>Yes</td>
<td>9</td>
<td>XP Pro</td>
<td>Mar 2003</td>
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<td>Pentium M 1.6 512MB 14.1&quot; SXGA+</td>
<td>1.6</td>
<td>14.1&quot; SXGA+</td>
<td>80 GB</td>
<td>11a/b Wi-Fi²</td>
<td>Mod/Blue</td>
<td>Gigabit</td>
<td>Yes</td>
<td>9</td>
<td>XP Pro</td>
<td>Mar 2003</td>
<td></td>
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</tr>
</tbody>
</table>

**Positioning**

- **Processor**
  - Perfect balance of performance and portability; two-symple system
- **Locks**
  - Enhanced security for increased protection
- **Diskette drive**
  - None standard; upgradable to a 80 MB drive
- **Display**
  - 14.1" (358.1mm) XGA (1024x768) TFT color
- **Graphics controller**
  - ATI Mobility RADEON 7500 40GB DDSR-DRAM

**Architecture**

- **Intel 855PM chipset**
- **Intel PRO/Wireless 2100, 82531 chipset**
- **IEEE 802.11a/b/g wireless**

**Ports**

- **2 USB (Version 2.0) / Ethernet 2.0 / 3 Com/Modem (8Mbps) / RJ-11 (modem) / RJ-45 (ethernet)**
- **2 Slot/1 Card slot**

**Security**

- **ThinkPad Security Key**
- **ThinkPad Port Replicator II**

**Limited warranty**

- **3 years/1 year battery** - EasyServ

**SOFTWARE**

- **Windows XP Professional**
- **Microsoft Windows XP Professional**
- **Disk to Disk Recovery** (in hidden protected area)

**Downloadable**

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software

**License**

- **Universal 72 watt AC adapter**
- **ServicePac 5yr P&L P/U Depot**
- **ServicePac 4yr IOR 9x5 NBD**
- **ServicePac 3yr IOR 9x5 NBD**
- **ServicePac 2yr IOR 9x5 NBD**

**See footnotes for important warranty information**
## ThinkPad T40 (March 2003) - withdrawn

### Personal Systems Reference (PSREF)

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Memory</th>
<th>Graphics</th>
<th>Disk controller</th>
<th>Diskette drive</th>
<th>DVD</th>
<th>SCSI UltraBay</th>
<th>Disk</th>
<th>ThinkLight</th>
<th>Graphics controller</th>
<th>Dimensions</th>
<th>Approx weight</th>
<th>Case material</th>
<th>Battery type</th>
<th>Battery life (hr)</th>
<th>Display</th>
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<tbody>
<tr>
<td>2373-7AU</td>
<td>Pentium M</td>
<td>1.5 GHz</td>
<td>128MB</td>
<td>GMA XVA</td>
<td>1.0/256MB</td>
<td>IBM MicroPort/</td>
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<td></td>
<td></td>
<td>100G</td>
<td></td>
<td>ATI Mobility RADEON 7500</td>
<td>12.2 x 10.0 x 1.2</td>
<td>3.9 lbs (2.2 kg)</td>
<td>magnesium composite</td>
<td>Lithium Ion</td>
<td>6-cell: 5.5 hr; 9-cell: 9.5 hr</td>
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</tbody>
</table>

### Software

#### Windows XP Pro models
- Microsoft Windows XP Professional
- Disk-to-Disk Recovery (in hidden protected area)

#### Windows 2000 models
- Microsoft Windows 2000 Professional
- ConfiqSafe™
- Disk-to-Disk Recovery (in hidden Service Partition)

#### Preloaded
- Access IBM
- Access Connections
- Adobe Acrobat Reader
- IBM Rapid Restore™ PC
- Veritas RecordNOW (combo mdis)
- IntelVideo WinDVD
- Norton AntiVirus (OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™

#### Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (security chip model)
- License (CD not included)

#### Office XP Small Business models only (2373-7AU and 8AU)
- Microsoft Office XP Small Business (Word, Excel, Outlook, Publisher, Small Business Tools)
- Office XP Small Business CD

### Service

- Universal 72 watt AC adapter
- IBM MicroPort/ (all)
- IBM ImageUltra/ Services available
- IBM Rapid Restore PC available to protect software image and data
- International Warranty Service 17
- 24 hour 7 day 7 hour toll-free warranty support during the warranty period via 800-IBM-SEVR

### Limited warranty

3 years/1 yr battery - EasyServ™ on pickup and delivery courier service

### Service options

- Service upgrades provide up to five years of on-site or depot repair service coverage from date of ThinkPad purchase (including warranty period)

### System Information

- See footnotes for important warranty information
- US models announced March 12, 2003
- US models withdrawn effective January or May 2004

See footnotes for important warranty information

© IBM Corp. June 2004
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>MHz</th>
<th>Memory</th>
<th>GB</th>
<th>Graphics controller</th>
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<th>Mini PCI</th>
<th>Comm Bay</th>
<th>Wire/wireless</th>
<th>CDC</th>
<th>modem/</th>
<th>Ethernet</th>
<th>Security</th>
<th>Battery cells</th>
<th>Workhorse (W)</th>
<th>Global (G)</th>
<th>Availability</th>
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</table>
| 2373-2AU  | Pentium M | 1.3  | 512MB | 14.1" XGA | 7500 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Mar 2003
| 2373-2CU  | Pentium M | 1.3  | 512MB | 14.1" XGA | 7500 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Mar 2003
| 2373-44U  | Pentium M | 1.5  | 512MB | 14.1" XGA | 7500 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Mar 2003
| 2373-4CU  | Pentium M | 1.5  | 512MB | 14.1" XGA | 7500 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Mar 2003
| 2373-9CU  | Pentium M | 1.6  | 512MB | 14.1" XGA+ | 9000 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Mar 2003
| 2373-3CU  | Pentium M | 1.5  | 512MB | 14.1" SXGA+ | 9000 | 40HS Combo | Intel 11b Wi-Fi<sup>TM</sup> | Modern | 10/100 | Yes | 6 X P model | No | Jun 2003

These educational models of the ThinkPad T40 notebook are available only to public or private K-12 (or higher) accredited schools and organized and operated exclusively for educational purposes for use by qualified students and/or teachers.

This model for education is for sale direct from IBM or through an Authorized Education Reseller. These educational models of the ThinkPad T40 notebook are available only to public or private K-12 (or higher) accredited schools and organized and operated exclusively for educational purposes for use by qualified students and/or teachers.

The model or models for education are not available for resale to any other organization or individual.

**SOFTWARE**

**Windows XP Pro models**
- Microsoft Windows® XP Professional
- Disk-to-Disk Recovery

**Preloaded (all)**
- Access IBM
- Access Connections
- Adobe Acrobat Reader
- IBM Rapid Restore<sup>TM</sup> PC
- IBM RecordNow and DLA
- Intel Video Windows DVD
- Norton AntiVirus<sup>TM</sup> (OEM edition)
- PC-Doctor<sup>TM</sup>
- ThinkPad Utilities
- IBM Update Connector<sup>TM</sup>

**Downloadable**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security updates)

**License (CD not included)**
- Lotus® SmartSuite Millennium and Lotus Notes® Stand-alone Client

**Universal 72 watt AC adapter**

**Asset ID**<sup>TM</sup> (system-specific info in chip access over network)

**PC 2001-compliant**
- ACPI 1.0b and 2.0-compliant
- C&IM and DMI 2.0-compliant
- PXE 2.0-compliant

**IBM ImageUltra<sup>TM</sup> Services available**
- IBM Rapid Restore PC available to protect software image and data
- International Warranty Service<sup>TM</sup>

24 hour a day 7 x 24 toll-free hardware support during the warranty<sup>TM</sup> period.

The Ultrabay Slim supports:
- standard or optional CD-RW/DVD combo drive
- optional second battery
- optional HDD adapter (for 2nd disk)
- optional travel bezel

---

**Limited warranty**
- **3 years**/1 yr battery - EasyServ<sup>TM</sup> onsite pickup and delivery / service upgrades<sup>TM</sup> available

---

See footnotes for important warranty information
US models announced March 25 or June 17, 2003
US models withdrawn effective October 2003

*Powered by Intel Centrino<sup>TM</sup> mobile technology*
<table>
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<td>XP Pro</td>
<td>TAA</td>
<td>W 2003</td>
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### TAA-compliant models

- **Trade Agreement (TAA)-compliant models**
- **Processor**: Intel® Pentium® M Processor 1.3 or 1.5GHz with enhanced Intel SpeedStep™ technology and 400MHz front-side bus
- **L2 cache**: 1MB on die (at processor speed) / ECC
- **Memory**: 256MB standard / 2GB max / PC2100 266MHz SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std mem in one socket / one socket available
- **Hard Disk**: 30GBB (4200 rpm) or 40GB HS (5400 rpm), 9.5mm high bay and removable and upgradable / 59-key high bay capable with optional HDD adapter in Ultrabay Slim
- **Display**: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / one latch to unlatch and open with one hand
- **Graphics controller**: ATI Mobility RAGEON 7500 / APG 4X / 32MB DDR-SGRAM

### Preloaded

- **Windows XP Pro models** - Microsoft® Windows® XP Professional
- **Disk-to-Disks Recovery** (in hidden protected area)

### Windows 2000 models

- **Microsoft® Windows® 2000 Professional**
- **ConfigSafe²**
- **Disks-to-Disks Recovery** (in hidden protected area)

### Universal 72 watt AC adapter

- **Asset ID™**: (system-specific info in chip accessed over network)
- **PC 2001-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant PXE 2.0-compliant IBM ImageServe Services available IBM Rapid Restore PC available to protect software image and data International Warranty Service 24 hour 7 day 7 toll-free hardware support during the warranty

#### Limited warranty

- **3 years / 1 year battery - EasyServ™ - onsite pickup and delivery - service upgrades available**

---

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*Created by IBM PC Institute* 

**IBM** 

**ThinkPad T40 (TAA) - withdrawn**

**US models announced March 12, 2003**

**US models withdrawn effective July 2003**

---

**SOFTWARE**

- **Windows XP Pro models** - Microsoft® Windows® XP Professional
- **Disk-to-Disks Recovery** (in hidden protected area)

- **Windows 2000 models** - Microsoft® Windows® 2000 Professional
- **ConfigSafe²**
- **Disk-to-Disks Recovery** (in hidden protected area)

**Preloaded**

- **Access IBM**
- **Access Connections**
- **Adobe Acrobat Reader**
- **IBM Rapid Restore² PC**
- **Veritas RecordNOW (combo mdls)**
- **InterVideo VideoWorks²**
- **Norton AntiVirus (OEM edition)**
- **PC-Doctor²**
- **ThinkPad Utilities**
- **IBM Update Connector™**

**Downloadable**

- **IBM Director Agent**
- **Software Delivery Assistant**
- **System Migration Assistant**
- **Client Security Software (security chip models)**

**License (CD not included)**

- **Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client**

---

*See footnotes for important warranty information*

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IBM® Limited warranty

Security

Audio support

US models withdrawn effective April 2004

US models announced June 17, 2003

US models withdrawn effective April 2004

Positioning

Processor

IBM® ThinkPad® T40 (2378) - SMB - withdrawn

Created by IBM PC Institute
Personal Systems Reference (PSREF)

See footnotes for important warranty information

1 Powered by Intel Centrino™ mobile technology

SOFTWARE

Windows XP Pro models
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery (in hidden protected area)

Preloaded (all)
- Access IBM
- Acrobat Reader
- IBM Rapid Restore™ PC
- InterVideo WinDVD
- Norton Antivirus (OEM edition)
- PC-Doctor
- ThinkPad Utilities
- IBM Update Connector™

Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (models with security chip)

License (CD not included)
- Lotus® SmarSuite™ Millennium and Lotus Notes® Stand-alone Client

Universal 72 watt AC adapter

PC 2001-compliant
ACPI 1.0b and 2.0-compliant
CIM and DMI 2.0-compliant
PXE 2.0-compliant
IBM ImageUltra™ Services available
IBM Rapid Restore PC available to
protect software image and data
International Warranty Service 24
hour x 7 day x 24 hour free hardware
support during the warranty 12

ServicePac® 21y 1yr 9x5 NBD
30L9188

ServicePac 2 y 9x5 NBD 30L9195

ServicePac 3 y 9x5 NBD 30L9199

ServicePac 4 y 9x5 NBD 30L9194

ServicePac 5 y 9x5 NBD 30L9196

ServicePac 2 y P & L/U Depot 30L9190

ServicePac 3 y P & L/U Depot 30L9192

ServicePac 4 y P & L/U Depot 69P9195

ServicePac 5 y P & L/U Depot 69P9197

Other ServicePac options at
ibm.com/services/its/us/source/maspspleu.pdf

Post-warranty annual maintenance

agreements at
ibm.com/services/its/us/source/wamomxeu.pdf

960PW T40 2004

IBM Director Agent

Software Delivery Assistant

System Migration Assistant

Client Security Software (models with security chip)

License (CD not included)

Lotus® SmarSuite™ Millennium and Lotus Notes® Stand-alone Client

Universal 72 watt AC adapter

PC 2001-compliant
ACPI 1.0b and 2.0-compliant
CIM and DMI 2.0-compliant
PXE 2.0-compliant
IBM ImageUltra™ Services available
IBM Rapid Restore PC available to
protect software image and data
International Warranty Service 24
hour x 7 day x 24 hour free hardware
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ServicePac® 21y 1yr 9x5 NBD
30L9188

ServicePac 2 y 9x5 NBD 30L9195

ServicePac 3 y 9x5 NBD 30L9199

ServicePac 4 y 9x5 NBD 30L9194

ServicePac 5 y 9x5 NBD 30L9196

ServicePac 2 y P & L/U Depot 30L9190

ServicePac 3 y P & L/U Depot 30L9192

ServicePac 4 y P & L/U Depot 69P9195

ServicePac 5 y P & L/U Depot 69P9197

Other ServicePac options at
ibm.com/services/its/us/source/maspspleu.pdf

Post-warranty annual maintenance

agreements at
ibm.com/services/its/us/source/wamomxeu.pdf

960PW T40 2004

IBM Director Agent

Software Delivery Assistant

System Migration Assistant

Client Security Software (models with security chip)

License (CD not included)

Lotus® SmarSuite™ Millennium and Lotus Notes® Stand-alone Client

Universal 72 watt AC adapter

PC 2001-compliant
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ServicePac® 21y 1yr 9x5 NBD
30L9188

ServicePac 2 y 9x5 NBD 30L9195

ServicePac 3 y 9x5 NBD 30L9199

ServicePac 4 y 9x5 NBD 30L9194

ServicePac 5 y 9x5 NBD 30L9196

ServicePac 2 y P & L/U Depot 30L9190

ServicePac 3 y P & L/U Depot 30L9192

ServicePac 4 y P & L/U Depot 69P9195

ServicePac 5 y P & L/U Depot 69P9197

Other ServicePac options at
ibm.com/services/its/us/source/maspspleu.pdf

Post-warranty annual maintenance

agreements at
ibm.com/services/its/us/source/wamomxeu.pdf

960PW T40 2004

IBM Director Agent

Software Delivery Assistant

System Migration Assistant

Client Security Software (models with security chip)

License (CD not included)

Lotus® SmarSuit....
### IBM T40 (2379) - SMB - withdrawn

**Positioning**
The perfect balance of performance and portability; two-sindle system

**Processor**
Intel Pentium M Processor 1.4 or 1.6GHz with enhanced Intel SpeedStep technology and 400MHz front side bus

**L2 cache Memory**
1MB / on die (at processor speed) / ECC

**Diskette drive Combo**
None standard / use optional USB-based diskette drive

**UltraBay Slim Disk**
None standard / use optional USB-based diskette drive

**Display**
Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

**Graphics controller**
Some: ATI Mobility RAGEON™ 7500 / AGP 4X / 32MB DDR-SGRAM

**Architecture**
Intel 855PM chipset / 82855PM Memory Controller Hub (MCH) / 82801DM ICH (ATA Controller Hub (ATAC4-M), I/O Controller bus (ATAC4-M), IDE, PCI Bus, System Bus, ISA Bus)

**Video out**
UltraConnect™ Antenna built into the display cover for optimal wireless signal reception

**Wireless antenna**
11b/Wi-Fi™

**Graphics - external connector**
Some: universal USB/Wi-Fi card / customer upgradable

**Keyboard**
87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.5mm (std-size keys)

**Trackpoint**
PointPoint™ pointing device, 5-press-to-Select, Internet Scroll Bar, magnifying glass / Touch pad

**ThinkLight™**
Adjustable illumination improves visibility in low-light conditions

**Dimensions**
Approximate width / depth / height: 11.2" x 10.0" x 1.0-1.2"; 311mm x 255mm x 26.6-31.4mm

**Battery - type**
Lithium Ion 6-cell or 9-cell / intelligent / supports unique 2nd battery in UltraBay Slim 6-cell: 5.0 hours; Optional 9-cell: 7.5 hours; 9-cell plus UltraBay Slim battery: 9.5 hours

**Power**
Universal 72 watt AC adapter

**Power On / Off**
128MB PC2100 DDR-SGRAM CL2.5 SOD 100K028

**Limited warranty**
3 years / 1 year battery - EasyServ™ on-site pickup and delivery / service upgrades available

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## Table: IBM T40 (2379) - SMB - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Memory</th>
<th>Graphics controller</th>
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<td>3 yrs Jun 2003</td>
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</tbody>
</table>

*Powered by Intel Centrino™ mobile technology*
### Specifications

#### Type-model Processor | Speed | Memory | Screen | Graphics controller | Disk GB | rpm | Optical | Mini PCI Comm Bay | CDC modem/ Ethernet on board | Battery Security | Workhorse (W) or Global (G) | Avail date
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2373-G1U Pentium® M | 1.6 | 512MB 14.1” SXGA+ | 9000 | 40/80 4400 | Combo | 11a/b Wi-Fi®-F | Mod/Blue Gigabit | Yes | 9 XP Pro | Nov 2003
2373-G1U Pentium® M | 1.6 | 512MB 14.1” SXGA+ | 9000 | 40/80 4200 | Combo | 11a/b Wi-Fi®-F | Mod/Blue Gigabit | Yes | 9 XP Pro | Jun 2003
2373-G1U Pentium® M | 1.6 | 512MB 14.1” SXGA+ | 9000 | 40/80 4200 | Combo | 11a/b Wi-Fi®-F | Mod/Blue Gigabit | Yes | 9 XP Pro | Nov 2003

#### Positioning
- **Processor**: Intel® Pentium® M Processor 1.6GHz with enhanced Intel SpeedStep™ technology and 400MHz frontside bus
- **L2 cache Memory**: 512MB standard, 1GB maximum / 512MB standard, 2GB maximum / PC100 266MHz DDR SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / standard memory in one socket / one socket available
- **Disk drive**: None standard / use optional USB-based diskette drive
- **Wireless antenna**: DVD-ROM/CDC/DVD-RW / 16X/10X/24X/8X2 speed / removable from Ultrabay Slim
- **Video out**: One modular bay for interchangeable devices (right side) / 9.5mm high bay / selectable / 9.5mm high bay / supports 2nd dock with optional HHD Adapter in Ultrabay Slim / IBM Integrated HDD Shock Absorber
- **Touch pad**: IBM Optical 3-Button ScrollPoint Pro Mouse
- **Keyboard**: IBM 256MB USB 2.0 Memory Key
- **Docking Station**: IBM USB Keyboard with UltraNav
- **Display**: 14.1” (358.1mm) SXGA+ (1400x1050) TFT color / Active Matrix / 150 nits / one latch to unlatch and open with one hand

#### Graphics CONTROLLER
- **Graphics controller**: ATI® Mobility FireGL® 9000 / AGP 4X / 64MB DDR-SDRAM
- **Graphics**: external / External monitor support via analog D15 connector / up to 2048x1536x16.7M at 75Hz

#### Video out
- **Wireless antenna**: UltraConnect™ Antenna built into the display cover for optimal wireless signal reception
- **Modem**: One Communications Daughter Card (CDC) socket / customer accessible
- **Modem chipset**: 56K V.90, V.92 (100% compatible) modem in A5/GSM chip
- **Audio support**: Soft audio / ICH AC97 controller / DirectSound
- **Security**: IBM Embedded Security Subsystem 2.0™ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security

#### Limited warranty
- **Service options**: 3 years / 1 year battery - EasyServ/®/ optional pickup and delivery courier service
- **Service upgrades**: prepaid up to 5 years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

#### Software
- **Windows XP Pro models**: - Microsoft® Windows® XP Professional
- **Disk-to-Disk Recovery**: (in hidden protected area)

#### Preloaded
- **Access IBM**: - Access Connections
- **Adobe Acrobat Reader**: - Adobe Acrobat Reader
- **IBM Rapid Restore™ PC**: - IBM Rapid Restore PC available to protect software image and data
- **Norton AntiVirus (OEM edition)**: - Norton AntiVirus (OEM edition)
- **Service Packs**: - IBM Update Connector™-15

#### Downloadable
- **IBM Director Agent**: - IBM Director Agent
- **Software Delivery Assistant**: - Software Delivery Assistant
- **System Migration Assistant**: - System Migration Assistant
- **Client Security Software**: - Client Security Software
- **License (CD not included)**: - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

#### IBM® Update Connector™-15
- **IBM® Update Connector™-15**:心目中

#### Universal 72 watt ac adapter
- **Asset ID™-5**: (system-specific info in chip accessed over network)
- **PC2001-compliant**: - PC2001-compliant
- **CIM and DMI 2.0-compliant**: - CIM and DMI 2.0-compliant
- **XP 2.0-compliant**: - XP 2.0-compliant
- **IBM ImageUltra™ Services available**: - IBM ImageUltra™ Services available
- **IBM Rapid Restore PC available**: - IBM Rapid Restore PC available to protect software image and data
- **International Warranty Service**
- **24 hour x 7 day 11 toll-free hardware support during the warranty**: - 24 hour x 7 day 11 toll-free hardware support during the warranty

#### The UltraBay Slim supports
- **standard or optional CD-RW/DVD drive**
- **standard drive**
- **optional second battery**
- **optional HDD adapter (for 2nd disk)**
- **optional travel bezel**

#### IBM® ServicePac™-2oct year IOR 9x5 NBD
- **ServicePac 3yr IOR 9x5 NBD**: - 30L190
- **ServicePac 4yr IOR 9x5 NBD**: - 30L197
- **ServicePac 5yr IOR 9x5 NBD**: - 69P998
- **ServicePac 4yr P&L P/U Depot**: - 69P999
- **ServicePac 5yr P&L P/U Depot**: - 69P991

#### Post-warranty annual maintenance agreements
- **at ibm.com/services/its/us/source/masplesu.pdf**

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See footnotes for important warranty information

US models announced May 27, 2003; previous models on March 12, 2003

US models withdrawn effective April 2004
<table>
<thead>
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<th>Graphics</th>
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<td>1 yr Oct 2003</td>
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**These small and medium business (SMB) models are part of the IBM US Think Express Program**

**The 238 has a 1 year limited warranty (other ThinkPad T41 2379 models have a 3 year limited warranty)**

### SOFTWARE

#### Windows XP Pro models
- Microsoft Windows XP Professional
- Disk-to-Disk Recovery

#### Preloaded (all)
- Access IBM
- Access Connections
- Adobe Acrobat Reader
- IBM Rapid Restore Ultra
- IBM RecordNOW and IBM Drive Letter Access (combo models)
- interVideo WinDVD (combo models)
- Norton AntiVirus (OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™, 15

#### Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security chip)

### License (CD not included)
- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

#### Universal 72 watt adapter
Asset ID™, (system-specific info in chip accessed over network)

#### PC 2001-compliant
- ACPI 1.0b and 2.0-compliant
- CIM and DMI 2.0-compliant
- PXE 2.0-compliant
- IBM ImageUltra Services available
- IBM Rapid Restore Ultra available to protect software image and data

#### International Warranty Service
- 24 hour x 7 day toll-free hardware support during the warranty

#### Other ServicePac options at ibm.com/services/us/source/maspspleu.pdf
- Other ServicePac options at ibm.com/services/us/source/services/its/us/source/wamomxeu.pdf

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**See footnotes for important warranty information**

**US models announced October 7, 2003**

**US models withdrawn effective July 2004**

*Powered by Intel Centrino™ mobile technology*
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These educational models of the ThinkPad T41 notebook are available only to public or private K-12 (or higher) accredited schools organized and operated exclusively for educational purposes for use by qualified students and/or teachers. This model is sold direct from IBM or through an Authorized Education Reseller. These education models are not available for resale to any other organization or individual.

### Positioning

**Processor**
- Intel® Pentium M Processor 1.5, 1.6, or 1.7GHz

**Display**
- 14.1" (356.3mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / one latch to un latch and open with one hand

**Diskette drive**
- DVD-ROM/CD-RW / 16X/10x/24x/8x / speed / removable from Ultrabay Slim

**Battery**
- Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay Slim

**Keyboard**
- 87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.5mm (standard-size keys)

**Graphics**
- External monitor support via analog DB-15 connector / up to 2048x1536x16.7M at 75Hz

**Dimensions**
- (WxDxH): 12.2" x 10.0" x 1.0-1.2"; 311mm x 255mm x 26.1-31.4mm

**Weight**
- 4.9 lbs (2.22 kg)

**Architecture**
- Intel 855PM chipset / 82855PM Memory Controller Hub (MCH/MI) / 82801DB ICH4-M I/O Controller Hub (ATA-100 IDE, PCI bus, ethernet MAC, Low Pin Count [LPC] interface, USB, [Bluetooth]) / PCI bus 2.2, 33MHz (T1) / PCI4520A CardBus controller, Mini PCI, external expansion) / LPC bus 33MHz

**Network**
- IBM Update Connector
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security chip)

**License**
- CD (not included)
- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

**Limited warranty**
- 3 years / 1 year battery - EasyServ®10,000 items pickup and delivery courier service

**Battery options**
- Stand-alone Client
- optional HD adapter (for 2nd disk)
- optional travel bezel

**Preload**
- Windows XP Professional

**Downloadable**
- IBM ImageUltra® Services available
- IBM Rapid Restore Ultra available to protect software image and data
- International Warranty Service

- Universal 72 watt AC adapter
- Universal Asset ID® (system-specific info in chip accessed over network)
- Preload 2001-compliant ACPI® 1.0b and 2.0-compliant
- CSM and DMI 2.0-compliant

**Service options**
- ServicePac 4yr IOR 9x5 NBD
- ServicePac 5yr IOR 9x5 NBD
- ServicePac 4yr P&L P/U Depot
- ServicePac 5yr P&L P/U Depot

**IBM Update Connector®**
- 10 years

**IBM Embedded Security Subsystem**
- 10 years

**IBM® ThinkPad® T41 (Education) - withdrawn**

See footnotes for important warranty information

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<thead>
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<td>Windows 98 SE Sept 00</td>
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</tbody>
</table>

**Processor**

- **IBM® Mobile Celeron™**
- **IBM Mobile Pentium™ III 600MHz with Intel SpeedStep™ technology and 100MHz system bus**

**L2 cache**
- Celeron: 128KB / onboard (at processor speed) / ECC
- Pentium III: 256KB / onboard (at processor speed) / ECC

**Memory**

- 64MB or 128MB standard / 320MB maximum / SDRAM / non-parity / 100MHz / PC 100 / 3.3V / one 144-pin SO-DIMM socket / 64MB on systemboard / 1 socket available on 64MB SO-DIMM in 128MB models

**Diskette drive**

- None standard / 3.5" 1.44MB integrated in optional UltraBase X2 media slice

**CD or DVD-ROM**

- None standard / optional CD or DVD-ROM removable from optional UltraBase X2

**UltraBay™ 2000**

- Modular bay for interchangeable devices / support for UltraBay™ 2000 devices in optional UltraBase X2 media slice or ThinkPad Dock

**Disk**

- 10GB or 20GB / user upgradeable / S.M.A.R.T. / ATA-66

**Display**

- 12.1" (300mm) SVGA (800x600) TFT color / Active Matrix / 125 nits or 12.1" (300mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

**Graphics controller**

- ATI® Rage™ Mobility M / AGP 2X / 4MB SGRAM / DDC2B

**Keyboard**

- ThinkPad Button / palm rest / TrackPoint®

**Dimensions**

- 17U/12U: 11.8" x 9.4" x 2.87-9.11" / 279mm x 227mm x 238.6-287mm
- Others: 11.8" x 9.4" x 2.87-9.11" / 279mm x 227mm x 24.9.30.5mm

**Travel weight**

- 11U/12U: 3.1 lbs / Others: 3.5 lbs

**Case material**

- Titanium Composite in the top cover for enhanced strength

**Battery - type**

- 11U/12U: Lithium Ion 4-cell / intelligent
- Others: Lithium Ion 6-cell / intelligent

**Battery - life**

- 11U/12U: 2.1 hours / Others: 3.8 hours

**Architecture**

- Intel 440ZX/440MX AGPset / Intel PIIX4M (EIDE with Ultra DMA/33 or PIO Mode 4 support, ISA Bridge, USB) / Ricoh® R5C4761 Cardbus controller for PC Card and Compact Flash / AGP 2X for graphics / PCI 2.1 / 32-bit / 33MHz (EIDE, CardBus, audio, USB, ext expansion) / PC973388 Super I/O / ISA (diskette, mono speaker, parallel, infrared, ext exp)

**Port replicator**

- Optional ThinkPad Port Replicator

**Docking Station**

- Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**PC Card Std slot**

- One Type II / CardBus 32-bit / PCMCIA 2.1 / no Zoomed Video

**Ports**

- Two USB (Version 1.1) / external DB-15 monitor / RJ-11 (modem) / RJ-45 (ethernet) / no serial, parallel, keyboard, mouse or infrared ports

**Video out**

- None

**Communications Bay**

- None

**Ethernet/modem**

- Some models: 56K V.90 modem card / Lucent® chipset

**Audio support**

- PCI audio / SoundBlaster Pro™ support / CS4281 with CS4297A AC97 codec / mono speaker / 0.5 watt / volume up, down, mute buttons / internal microphone / in-line jack / output jack (3.5mm) / line in jack

**Security**

- Power-on password / dual hard disk password / supervisor password

**Limited warranty**

- 3 year - EasyServ™ or onsite pickup and delivery courier service

**Service options**

- Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

**Communication Bay**

- IBM 10/100 EtherJet Mini PCI Adapter with 56K Modem by 3Com

**Wireless connectivity**

- IBM High Rate Wireless LAN PC Card

- Bluetooth® PC Card (avail 4Q 2000)
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<th>Memory</th>
<th>Screen</th>
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<td>Intel® eth/mod</td>
<td>98 SE, Office 2000 SB</td>
<td>Apr 2001</td>
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### Processor
- **IBM® Mobile Pentium™ III 600MHz with IntelSpeedStep™ technology and 100MHz system bus**
- L2 cache: 256KB / onboard (at processor speed) / ECC
- Memory: 64MB or 128MB standard / 320MB or 384MB maximum / SDRAM / non-parity / Memory: 100MHz / PC 100 / 3.3v / one 144-pin SO-DIMM socket / 64MB or 128MB on systemboard / 1 socket available

### Diskette drive
- CD or DVD-ROM: None standard
- Memory: None standard
- Processor: None standard
- UltraBay™ 2000 Modular bay for interchangeable devices / support for UltraBay™ 2000 2000 devices in optional UltraBase X2 media slice or ThinkPad Dock

### Display
- 12.1” (308mm) SVGA (800x600) TFT color / Active Matrix / 125 nits or 12.1” (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

### Graphics controller
- Graphics type: ATI® Rage™ Mobility M / AGP 2X / 4MB SGRAM / DDC2B
- Graphics: External SVGA to 1024x768x16.7 million colors at 75Hz and up to 1600x1200

### Keyboard
- Standard-size keys / 97% size of T Series / pitch: 18.5mm / stroke: 2.5mm / ThinkPad Button / palm rest / TrackPoint™ / "Press-to-Select," Internet Scroll Bar

### ThinkLight™
- Illuminates the keyboard to improve visibility in low-light conditions

### UltraPort™
- UltraPort connector on top of display for options such as digital UltraPort Camera

### Dimensions
- 4xx: 11 x 8.9 x .94-.11, 279mm x 227mm x 23.8-27.9mm
- Others: 11 x 8.9 x .98-.12, 279mm x 227mm x 24.3-30.5mm
- Travel weight: 3.1 lbs / Others: 3.5 lbs

### Battery - type
- Titanium Composite in the top cover for enhanced strength
- 4xx: Lithium Ion 4-cell / intelligent
- Others: Lithium Ion 6-cell / intelligent
- Battery - life: 2.8 hrs / Others: 4.8 hrs

### Security
- Security: 3 year - EasyServ™19 on-site pickup and delivery courier service

### Communication Bay
- Communication Bay with Mini PCI Iblb slot / customer accessible

### Modem/ether
- Some: 56K* V.90 Mini PCI modem card / Lucent® chip set
- Some: 56K6 V.90 Mini PCI modem card / Lucent

### Audio support
- Audio support: IBM 10/100 Ethernet Mini PCI Adapter with 56K Modem (3Com ethernet chipset / 3Com modem chip set)
- Audio support: Some: IBM Pro/100SP Mobile Combo Adapter / Mini PCI ethernet chipset with 56K modem / Intel® 82550EY ethernet chipset / Lucent modem chip set
- Audio support: PCI audio / SoundBlaster Pro™ support / CS4281 with CS4297A AC97 codec / mono speaker / 0.5 watt / volume up, down, mute buttons / internal microphone / input jack (3.5 mm) / output jack (3.5 mm) / line in jack
- Audio support: Power-on password / dual hard disk password / supervisor pwrd / security keyhole

### ULTRABASE X2 MEDIA SLICE OPTION
- UltraBase X2 supports most UltraBay 2000 options:
  - optional HDD adapter; for 2nd disk
- UltraBase X2 right bay contains:
  - standard diskette drive (not removable)

### Windows 98 Preload
- - Microsoft Windows® 98 Second Edition
- - Some: Microsoft Office 2000 Small Business (Word, Excel, Outlook, Publisher, Business Tools)
- - ThinkPad Utilities
- - ThinkPad Assistant™
- - Universal Manageability Srvs (web)
- - ConfigSafe™
- - IBM Update Connector™
- - Access ThinkPad II
- - PC-Doctor™
- - SystemSoft Card Wizard
- - Lotus SmartSuite Millennium and Lotus Notes Client 5.0 license
- - Some: Office 2000 Small Bus CD
- - Disk-to-Disk Recovery (in hidden Service Partition)

### Windows 2000 Preload
- - Microsoft Windows 2000 Professional
- - Some: Microsoft Office 2000 or XP Small Business
- - ThinkPad Utilities
- - ThinkPad Assistant™
- - Universal Manageability Srvs (web)
- - ConfigSafe™
- - IBM Update Connector
- - Access ThinkPad II
- - PC-Doctor
- - SystemSoft Card Wizard
- - Lotus SmartSuite Millennium and Lotus Notes Client 5.0 license
- - Some: Office 2000 Small Bus CD
- - Some: Office XP Small Bus CD
- - Disk-to-Disk Recovery (in hidden Service Partition)

### ULTRABASE X2 MEDIA SLICE
- Left bay of UltraBase X2 supports most UltraBay 2000 options:
  - optional HDD adapter; for 2nd disk
- UltraBase X2 right bay contains:
  - standard diskette drive (not removable)

### Other features
- - stereo speakers (1 watt)
- - security keyhole, UltraBase lock
- - Serial and parallel ports
- - Keyboard / mouse port

### International Warranty Service
- - IBM Personalized Web-based support
  - International Warranty Service17
  - IBM PC Lifecycle Care21
  - Wired for Management (WfM) 2.0
  - CIM and DMI 2.0-compliant
  - Universal Manageability solutions
  - IBM PC Institute

### US models withdrawn effective November 2001 or January 2001

* For a copy of IBM’s Statement of Limited Warranty, call 1-800-772-2227

**US model announced August 7, 2001; others on March 20, 2001**

**US models withdrawn effective November 2001 or January 2001**
IBM® ThinkPad® X22 - withdrawn

See footnotes for important warranty information; * Special ordering only
US models announced October 9 or November 27, 2001
US models withdrawn effective April 2002 or July 2002

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SOFTWARE

Windows XP Pro models
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery
  (in hidden Service Partition)

Windows 2000 models
- Microsoft Windows 2000 Professional
- Disk-to-Disk Recovery
  (in hidden Service Partition)

INCLUDED SOFTWARE (all)

Preloaded
- Access ThinkPad
- Access Connections
- Access Help
- ConfigSafe™
- PC-Doctor™
- ThinkPad Utilities

Downloadable
- IBM Rapid Restore™ PC
- IBM Data Transfer
- Universal Manageability Services™
- IBM Update Connector™
- Client Security Software (for security chip)
- Lotus® SmartSuite® Millennium
- Lotus Notes® Client 5.0

Office XP Small Business models only
- Microsoft Office XP Small Business
- Word, Excel, Outlook, Publisher, Small Business Tools
- Office XP Small Business CD

ULTRABASE X2 MEDIA SLICE

Left bay of UltraBase X2 supports most UltraBase 2000 options:
- Optional HHD adapter; for 2nd disk bay

License
- IBM Universal Manageability Solutions
- IBM Update Connector

- IBM Rapid Restore PC available to support software image and data
- Personalized Web-based support
- 24 hour x 7 day toll-free hardware support during the warranty

Other features
- Stereo speakers (1 watt)
- Security keyhole, UltraBase lock
- Serial and parallel ports
- Keyboard/mouse port
IBM
ThinkPad® X23 - withdrawn

Created by IBM PC Institute
Personal Systems Reference (PSREF)

Limited warranty13 3 years/1 year battery - EasyServ™/19 onsite pickup and delivery courier service Service options20 Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

SOFTWARE14

Windows XP Pro models - Microsoft® Windows® XP Professional - Disk-to-Disk Recovery (in hidden Service Partition)


INCLUDED SOFTWARE14 (all)


Downloadable - IBM Rapid Restore™ PC - IBM Data Transfer - UniversalManageability Services™ - IBM Update Your PC - Client Security Software (for security chip)

License (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

ULTRABASE X2 MEDIA SLICE OPTION

Left bay of UltraBase X2 supports most Ultrabay 2000 options

- Optional HDD adapter: for 2nd disk

UltraBase X2 right bay contains:

- Standard diskette drive (fixed)
- Other features
  • Stereo speakers (1 watt)
  • Security keyhole, UltraBase lock
  • Serial and parallel ports
  • Keyboard/mouse port

See footnotes for important warranty information

US models announced January 23, 2002; US models withdrawn effective July 2002 or July 2003

* Special ordering only

(X23) © IBM Corp. July 2003
### IBM ThinkPad X24 - withdrawn

#### Type-model | Processor | GHz | Memory | Screen | Disk | Optical | Mini PCI | CDC: ethernet | Security | Chip | Preload | Workhorse or Global model | Avail date |
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#### Positioning Processor
- **Extra-light, extra-small ultraportable notebook; one spindle Mobile Intel® Pentium III-Processor M-1.13GHz with enhanced Intel SpeedStep™ technology and 133MHz frontside bus**
- 8512B / on die (at processor speed) / ECC
- Memory: 256MB std / 640MB max / SDRAM / non-parity / 133MHz / PC133 / 3.3v / one 144-pin SO-DIMM socket / 128MB / SO-DIMM in 1 socket (nole avail)
- Diskette drive: None standard / 3.5" 1.44MB integrated in optional UltraBase™ X2 media slice
- CD or DVD-ROM drive: None standard / optional optical drive removable from optional UltraBase X2
- Ultrabay™ Ultrabay 2000 supports Ultrabay 2000 devices in optional UltraBase X2 media slice or ThinkPad Dock
- Disk: 30GB± / 4200 rpm / user upgradeable / S.M.A.R.T. / ATA-100
- Display: 12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits
- Graphics controller: ATI™ Rage™ Mobility RADEON M66c / AGP 4X / 8MB DDR-SDRAM / DDC2B
- Graphics - external: Monitor to 1024x768 with 16.7 million colors at 100Hz and up to 1600x1200
- Keyboard: Standard-size® keys / 97% size of T Series / 85-key / 18.5mm pitch; 2.5mm stroke / ThinkPad Button / palm rest / TrackPoint®, "Press-to-Select," Internet Scroll Bar™
- ThinkLight™/ UltraPort™
- Port replicator: Optional
- Media slice: Optional UltraBase X2 media slice (see right side)
- Docking Station: Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)
- Compact Flash slot: Compact Flash slot / 1 CF+ Type II / supports optional IBM Microdrive™
- PC Card Std slot: One Type II / CardBus 32-bit / PCMCIA 2.1
- Ports: Two USB (version 1.1) / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / 1 CF+ (ethernet) / no serial, parallel, keyboard, or mouse ports
- Modem: ThinkPad Modem
- LCD: IBM 830MP chip / 82830MP Graphics Memory Controller Hub (GMCH-M) / 82801AM ICH3-M I/O Controller Hub (ATA-100/66 IDE, PCI bus, Low Pin Count (LPC) interface, USB (Bluetooth)) / Intel 82082AC Firmware Hub / PCI bus 2.2 32-bit, 33MHz (Risch™ R5C476R Cardbus Controller, Mini PCI, ext expansion) / LPC bus 33MHz (PC87391 Super I/O for infrared [doek-based diskette, serial, parallel])
- Battery: Li-Ion 6-cell / intelligent ThinkPad Battery / palm rest / TrackPoint, Illuminates the keyboard to improve visibility in low-light conditions
- Power-on password / dual hard disk password / supervisor pwdr / security keyhole
- Security keyhole, UltraBase lock
- Power-on password / volume up, down, mute buttons / internal microphone / mic in / line in / headphone output
- Power-on password / dual hard disk password / supervisor pwdr / security keyhole
- Security chip: IBM Embedded Security Subsystem™ / hardware key storage / multi-factor authentication / enhances VPN security™
- Limited warranty10
- 5 years / 1 year battery - EasyServ™, onsite pickup and delivery courier service
- Service options25
- Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

#### SOFTWARE14

##### Windows XP Pro models
- - Microsoft® Windows XP Professional
- - Disk-to-Disks recovery (in hidden Service Partition)

##### Windows 2000 models
- - Microsoft Windows 2000 Professional28
- - ConfigSafe™
- - Disk-to-Disks recovery (in hidden Service Partition)

#### INCLUDED SOFTWARE14 (all)

##### Preloaded
- - Access ThinkPad
- - Access Connections
- - Access Help
- - Access Support
- - PC-Doctor™
- - ThinkPad Utilities

##### Downloadable
- - IBM Rapid Restore™ PC
- - IBM Data Transfer
- - IBM Director Agent
- - IBM Update Connector™
- - IBM Client Security Software (for security chip)

##### License (CD not included)
- - Lotus® SmartSuite® Millennium and Lotus Notes® Client 5.0

#### ULTRABAY X2 MEDIA SLICE OPTION

Left bay of UltraBase X2 supports most UltraBay 2000 options
- - Optional Bluetooth®/2.5, for 2nd disk drive
- - UltraBase X2 right bay contains:
  - Standard diskette drive (fixed)
  - Other features: Stereo speakers (1 watt)
  - Security keyhole, UltraBase lock
  - Serial and parallel ports
  - Keyboard/mouse port

#### 3 years / 1 year battery - EasyServ™, onsite pickup and delivery courier service

Optional service upgrades provide up to three years of onsite or depot repair service coverage from date of ThinkPad purchase (including warranty period)

See footnotes for important warranty information

US models announced April 23, 2002
US models withdrawn effective July 2003

(2X4) © IBM Corp. July 2003
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**Positioning**

Extra-light, extra-small ultraportable notebook; one spindle

**Processor**

Mobile Intel® Pentium® III Processor—M 1.06 or 1.20GHz with enhanced Intel SpeedStep™ technology and 133MHz frontside bus

**L2 cache**

512KB on die (at processor speed) / 128KB

**Memory**

128 or 256MB standard / 1GB max / SDRAM—non-parity / 133MHz / PC133 / CAS latency 3 / two 144-pin SO-DIMM sockets / one socket used by std mem / one socket available

**Disk drive**

None standard / optional Ultrabay™-based (in opt X3) / USB-based diskette drive

**CD/DVD-ROM**

None standard / optional optical drive removable from optional X3 UltraBase

**Ultrabay™2000**

Supports Ultrabay 2000 devices in optional X3 UltraBase media slot or ThinkPad Dock

**Disk**

2.5" or 3.5"/ 4200 rpm / user upgradable / S.M.A.R.T. / ATA-100 / 9.5mm tall

**Display**

12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

**Graphics controller**

Intel 830MG Integrated Direct AGP 3D / Unified Memory Architecture / in GMCH / controller dynamically allocates 8 to 32MB of system memory for graphics

**Graphics - external**

External SVGA to various modes such as 16 million colors, 85Hz, or 1600x1200

**Keyboard**

Standard-size keys / 97% size of T Series / 87-key / 18.5mm pitch / 2.5mm stroke / ThinkPad Button / palm rest / TrackPoint™ / "Press-to-Select," Internet Scroll Bar™

**ThinkLight™**

Illuminates the keyboard to improve visibility in low-light conditions

**Dimensions**

10.7" x 8.8" x 0.92 - 1.19"; 273mm x 223mm x 24-30.2mm

**Weight**

3.9 lbs (1.8 kg) with battery

**Memory**

128-256MB standard / 1GB max / SDRAM / non-parity / 133MHz / PC133 / CAS latency 3 / two 144-pin SO-DIMM sockets / one socket used by std mem / one socket available

**Battery**

Li-Ion (6-cell) / intelligent (also supports optional Extended Life Battery and UltraBattery)

**Battery life**

Non-wireless: 5.0 hrs; Intel wireless: 4.6 hrs; Cisco wireless: 4.5 hrs

**Architecture**

Intel 830MG chipset / 82830MG Graphics Memory Controller Hub (GMCH-M) / 82801CAM ICH3-M I/O Controller Hub (ATA-100/66 EIDE, PCI bus, Low Pin Count (LPC) interface, USB, Bluetooth) / Intel 82802AC Firmware Hub / PCI bus 2.2-3.2-bit, 33MHz (Ricoh® R5C522 Cardbus/1394 controller, mini PCI ext expansion) / LPC bus 33MHz (PCI7592 Super I/O for infrared) / optional X3 UltraBase media slot, serial, parallel)

**Media slot**

Optional X3 UltraBase media slot (see right side)

**Docking Station**

Optional ThinkPad Dock (includes Ultrabay 2000 and half-size PCI slot)

**Compact Flash slot**

Compact Flash slot / Type II / supports optional IBM MicroDrive™

**Port Replicator Std slot**

One Type II / supports optional IBM MicroDrive™ / 32-bit / PCMCIA 2.1

**IEEE 1394**

IEEE 1394 (FireWire) Port (4-pin)

**Ports**

Two USB (version 1.1) / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (etherernet) / parallel / IEEE 1394 (4-pin) / no serial, keyboard or mouse ports

**Mini PCI**

One Mini PCI type III slot (Communications Bay) / customer upgradable / 11b-Wi-Fi/Firewire combo

**Battery**

Non-wireless: 5.0 hrs; Intel wireless: 4.6 hrs; Cisco wireless: 4.5 hrs

**Interconnect technology**

- Optional HDD adapter; for 2nd disk

**Post Replicator Std slot**

Portable Drive Bay 2000 19K4480

**Ethernet**

10/100 ethernet on systemboard / Intel 82562ET chipset (physical layer) / PXE

**Audio upgradable**

Some: 56K6 V.90 (V.92-designed®) modem combo, Agere

**Sound support**

Speaker(s) (1 watt)

**Wireless upgradable**

Some: Bluetooth technology / in CDC / power button on display

**Battery**

128-256MB standard / 1GB max / SDRAM / non-parity / 133MHz / PC133 / CAS latency 3 / two 144-pin SO-DIMM sockets / one socket used by std mem / one socket available

**Software**

- Windows XP Professional
    - Disk-to-Disk Recovery (in hidden Service Partition)

**Windows 2000 models**

- Microsoft Windows 2000 Professional
    - ConfigDOS
    - Disk-to-Disk Recovery (in hidden Service Partition)

**INCLUDED SOFTWARE**

- IBM Client Security Software (for security chip)

**License**

(No cost included)"
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Mini PCI wireless</th>
<th>CDC: modem/ Bluetooth™ Chip</th>
<th>Security</th>
<th>Ethernet planar</th>
<th>Preload</th>
<th>Workhorse or Global model</th>
<th>Avail date</th>
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<td>Open; wireless upg™</td>
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<td>XP Pro</td>
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<td>10/100</td>
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<td>W</td>
<td>Mar 2003</td>
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<table>
<thead>
<tr>
<th>Positioning</th>
<th>Processor</th>
<th>Ultimate mobility in a versatile ultraportable; one spindle</th>
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<tbody>
<tr>
<td>L2 cache</td>
<td>1MB</td>
<td>on die (at processor speed) / ECC</td>
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<tr>
<td>Memory</td>
<td>256MB std / 2GB max / PC2100 266MHz DDR-SDRAM / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available</td>
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<tr>
<td>Diskette drive</td>
<td>None standard / use optional Ultrabay™-based (in opt X3) or USB-based diskette drive</td>
<td></td>
</tr>
<tr>
<td>Optical drive</td>
<td>None standard / use optional Ultrabay™-based (in opt X3) or USB-based diskette drive</td>
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<tr>
<td>Ultrabay™2000</td>
<td>Supports Ultrabay 2000 devices in optional X3 Ultrabase, ThinkPad Dock, or Dock II</td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>12.1&quot; (308mm) XGA (1024x768) TFT color</td>
<td>Active Matrix / 150 nits / two latches</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Graphics controller</th>
<th>ATI Mobility RADEON™ / AGP 4X / 16MB DDR-SDRAM</th>
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<tr>
<td>Graphics - external</td>
<td>IBM Embedded Security Subsystem 2.0™ / Intel SpeedStep™ technology and 400MHz frontside bus</td>
</tr>
<tr>
<td>Dimensions²</td>
<td>10.7&quot; x 8.8&quot; x .98&quot;-1.19&quot;; 273mm x 223mm x 24.9-30.2mm</td>
</tr>
<tr>
<td>Travel Weight</td>
<td>2.8 lb (1.28 kg)</td>
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<tr>
<td>Case material</td>
<td>Titanium composite in the top cover / magnesium alloy bottom case</td>
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<tr>
<td>Battery - type</td>
<td>Li-Ion 6-cell / intelligent / supports opt Extended Life Battery on battery (for two batteries) / supports Ultrabay battery or optional 6-cell battery in X3 Ultrabase (for two batteries)</td>
</tr>
<tr>
<td>Battery - life³</td>
<td>5.5 to 6.0 hrs / with battery and optional Extended Life Battery 9.9 to 10.1 hrs</td>
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<tr>
<td>Wireless antenna</td>
<td>UltraConnect™ antenna built into the display cover for optimal wireless signal reception</td>
</tr>
<tr>
<td>Wi-Fi²²</td>
<td>Some: IBM Embedded Security Subsystem 2.0™ / hardwire key storage / microfactor authentication / local file encryption / enhances VPN security/² / TCG-compliant</td>
</tr>
<tr>
<td>Media slot</td>
<td>Optional X3 Ultrabase media slot (see right side)</td>
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</tbody>
</table>

| Architecture | Intel 855PM chipset / 82805PM Memory/Controller Hub (MCH) / 82801DBM ICH4-M / I/O Controller Hub (ATA-100 EIDE, PCI, bus, ethernet, MAC. Low Pin Count (LPC) interface, USB) / Intel 82802AC Firmware Hub / PCI bus 2.2 32-bit, 33MHz (Ricoh 85522 CardBus/1394 combo controller, Mini PCI, ext expansion) / PCI bus 33MHz (PC7382 Super I/O for infrared (dock-based diskette, serial, parallel)) |

<table>
<thead>
<tr>
<th>Software</th>
<th>Windows XP Pro models</th>
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<tbody>
<tr>
<td></td>
<td>- Microsoft Windows XP Professional²⁰</td>
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<tr>
<td></td>
<td>- Disk-to-Disk Recovery (in hidden protected area)</td>
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<table>
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<tr>
<th>Preloaded</th>
<th>- Access IBM</th>
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<tr>
<td></td>
<td>- Access Connections</td>
</tr>
<tr>
<td></td>
<td>- Adobe Acrobat Reader</td>
</tr>
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<td></td>
<td>- IBM Rapid Restore™ PC</td>
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<td></td>
<td>- Norton AntiVirus (OEM edition)</td>
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<td>- PC-Doctor™</td>
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<td></td>
<td>- ThinkPad Utilities</td>
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<td></td>
<td>- IBM Update Connector™¹⁵</td>
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<th>Downloadable</th>
<th>- IBM Director Agent</th>
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<td></td>
<td>- Software Delivery Assistant</td>
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<td></td>
<td>- System Migration Assistant</td>
</tr>
<tr>
<td></td>
<td>- Client Security Software (security chip model)</td>
</tr>
</tbody>
</table>

| License (CD not included) | - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client |

IBM ThinkPad X3 UltraBase™ Option

<table>
<thead>
<tr>
<th>Right bay of X3 UltraBase supports most Ultrabay 2000 options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional battery, CD-ROM, DDR-SDRAM, DVD-ROM, Zip 250MB, Combo</td>
</tr>
<tr>
<td>Optional HDD adapter: for 2nd disk such as 80GB HS Hard Disk 9.5mm (5400 rpm) 09N4273</td>
</tr>
<tr>
<td>Ultrabay Plus-compatible</td>
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<table>
<thead>
<tr>
<th>Ultrabay 2000 accessories:</th>
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</thead>
<tbody>
<tr>
<td>CD-R/DVD Combo IV Ultrabay 2000</td>
</tr>
<tr>
<td>10/100/1000 22P6991</td>
</tr>
<tr>
<td>2nd HDD Adapter for Ultrabay 2000</td>
</tr>
<tr>
<td>09K6608</td>
</tr>
<tr>
<td>ThinkPad Removable Diskette Drive 09K6603</td>
</tr>
<tr>
<td>Ultrabay 2000 Li-Ion battery 02K6646</td>
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</table>

X3 UltraBase bottom contains: |
<table>
<thead>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Bay for X30 battery (same as X31)</td>
</tr>
</tbody>
</table>

**Features:****
- Second battery support (for Ultrabay battery or second 6-cell battery) |
- Stereo speakers (1 watt) |
- Security keyhole, Ultrabay lock |
- Serial and parallel ports |
- PS/2 mouse port |
- Analog DB-15 monitor port |
- One USB port (on only on X31) |
- Ethernet port and modem port |
- Retractable feet: 1.41 lb; 638g |

**Limited warranty²** | 3 years/1 yr battery - EasyServ™ onsite pickup and delivery / service upgrades²² available |

<table>
<thead>
<tr>
<th>Limited warranty²</th>
<th>3 years/1 yr battery - EasyServ™ onsite pickup and delivery / service upgrades²² available</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM ThinkPad X3 UltraBase media slice 46P7912</td>
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<tr>
<td>ThinkPad Port Replicator II 74P6733</td>
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<tr>
<td>ThinkPad Mini Dock 287810U</td>
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<tr>
<td>IBM 128MB PC2100 DDR-SDRAM 32 SOD 10K0038</td>
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<td>IBM 256MB PC2100 DDR-SDRAM 32 SOD 10K0030</td>
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<td>IBM 512MB PC2100 DDR-SDRAM 32 SOD 10K0032</td>
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<td>IBM 1GB PC2700 DDR-SDRAM 64 SOD 09K2709</td>
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<td>IBM 40GB Hard Disk Drive 05K9276</td>
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<tr>
<td>IBM 300GB Hard Disk Drive 05K9616</td>
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<td>IBM 256MB USB 2.0 MemoryKey 00K8087</td>
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<tr>
<td>IBM 11a/b/g Wireless CardBus Adapter 00K9818</td>
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<td>IBM 802.11a/b/g Wireless Mini PCI Adapter 00K9807</td>
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<tr>
<td>IBM 11a/b/g Wireless CardBus Adapter 00K9818</td>
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<tr>
<td>Intel PRO/Wireless 2100 3B Mini PCI 01P8601</td>
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<tr>
<td>IBM X300 Wireless 802.11b Mini PCI 01P8031</td>
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<tr>
<td>IBM PRO/Wireless 2200BG Mini PCI 73P2801</td>
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International Warranty Service¹⁷ |

Software support during the warranty²

*Powered by Intel Centrino™ mobile technology (X31) © IBM Corp. July 2004
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Screen</th>
<th>Memory</th>
<th>Mini PCI</th>
<th>CDC: modem</th>
<th>Security Chip</th>
<th>Ethernet planar</th>
<th>Preload</th>
<th>Workhorse or Global model</th>
<th>Avail date</th>
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<td>Mar 2003</td>
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<td>2000</td>
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**Software**

- Windows 2000 models
  - Microsoft® Windows® 2000 Professional
  - Configuration: 32-bit
  - Disk-to-Disk Recovery (in hidden protected area)

**Preloaded**

- Access IBM
- Access Connections
- Adobe Acrobat Reader
- IBM Rapid Restore™ PC
- Norton AntiVirus® ( OEM edition)
- PC-Doctor
- ThinkPad Utilities
- IBM Update Connector™

**Downloadable**

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (security chip model)

**License**

- CD (not included)
  - Lotus® “SmartSuite” Millennium
  - Lotus® Notes® Stand-alone Client

IBM ThinkPad X3 UltraBase™

Right bay of X3 UltraBase supports most UltraBase 2000 options:

- Optional battery, CD-ROM, CD-RW, DVD-ROM, Zip 250MB, Combo
- Optional HDD adapter: for 2nd disk such as 80GB Hard Disk 9.5mm (4200 rpm) 08K9869
- Ulravay Plus-compatible

Ultrasound 2000 accessories:

- CD-RW/DVD Combo IV UltraBase 22P7677
- IBM ThinkPad Ultrabay 32G 02K5863
- IBM ThinkPad Ultrabay 2000 Li-ion battery 02K6646
- IBM ThinkPad Ultrabay X3 UltraBase bottom contains: Bay for X30 battery (same as X31)

Other features:

- Second battery support (for UltraBase battery or second 6-cell battery)
- Stereo speakers (1 watt)
- Security keyhole, UltraBase lock
- Serial and parallel ports
- Ethernet port and modem port
- Retractable feet: 1.41 lb; 638g

IBM ThinkPad X3 (Windows 2000) - withdrawn

See footnotes for important warranty information

*Powered by Intel Centrino® mobile technology

US models announced March 12, 2003

US models withdrawn effective October 2003 or January 2004

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<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
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<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical in UltraBase X3 UltraBase™</th>
<th>Mini PCI wireless</th>
<th>CDC: modem/ Bluetooth™</th>
<th>Sec Ethernet chip</th>
<th>WH (W) Gbl Entry (E) (G) (A)</th>
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<td>None</td>
<td>Optional</td>
<td>Oem / wireless upg®</td>
<td>Modern</td>
<td>Yes Gigabit XP Pro Entry (E)</td>
<td>Feb 04</td>
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</table>

**Positioning Processor**
IBM Pentium M Processor 1.5 or 1.7GHz with enhanced Intel SpeedStep™ technology and 400MHz system bus

L2 cache
256 or 512MB std / 2GB max / PC2700 333MHz DDR1 (memory controller limits memory speed to 266MHz / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / slot memory in one socket / one socket available

**Disk drive**
None standard / use optional Ultrabay™-based (inX3) or USB-based diskette drive
None standard / optional USB-based optical, or optional Ultrabay 2000-based optical removable from optional X3 UltraBase, ThinkPad Dock, or ThinkPad Dock II
Ultrabay™2000
Supports Ultrabay 2000 devices in optional X3 UltraBase (or optional ThinkPad Dock II)

**Display**
12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

**Graphics controller**
ATI® MOBILITY™ RADEON™ / AGP 4 / 16MB DDR1 (DDR-SDRAM)

**Graphics - External Monitor support via analog DB-15 connector / up to 1280x1024x16.7M at 85Hz

**Keyboard**
Standard-size keys / 97% size of T Series / 87-key / 18.5mm pitch; 2.5mm stroke / soft dome TrackPoint cap / ships with classic soft rim TrackPoint cap

**ThinkLight™**
without X3 UltraBase: 10.7" x 8.8" x 98.1-19.9"; 237mm x 223mm x 24.9-30.3mm with X3 UltraBase and optical: 10.8" x 8.9" x 20.2-3.3"; 273 x 227 x 51-58mm with battery: 3.6 lb (1.65kg); with X3 UltraBase and optical: 5.6 lb (2.54kg)

**Travel weight**
Color: black; All: Enhanced drive adapter for X3 UltraBase bottom case

**Battery - type**
Li-Ion 6-cell / intelligent / supports optional Extended Life Battery on base (for two batteries)

**Battery - life**
All: 5.5 to 6.0 hrs; with std battery and optional Extended Life Battery: up to 10.1 hrs

**Architecture**
IBM 855PM chipset / 82855PM Memory Controller Hub (CH-M)

**Intel® Processor**
11W 1.2GHz / 11.2GHz

**Intel® 855PM chipset**
Memory Controller Hub (MCH-M)

**Power Delivery**
IBM 8520AC Firmware Hub / PCI bus 2.2.32-bit, 33MHz (Richo® R5CS54 CardBus/1394 combo controller, Mini PCI, extended expansion) / PCI bus 33MHz (PC87392 Super I/O)

**Media slice**
Optional X3 UltraBase media slice (see right side

**Compact Flash slot**
Compact Flash slot / 1 CF+ Type II / supports optional IBM Microdrive™

**IEEE 1394 (FireWire) port**
4-pin

**Ports**
Two USB version 2.0 / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (etherenet) / parallel / IEEE 1394 (4-pin) / no serial, keyboard, or mouse ports

**Wireless antenna**
UltraConnect™ antenna built into the display cover for optimal wireless signal reception

**Mini PCI**
Pentium® M Processor 1.5 or 1.7GHz with enhanced Intel SpeedStep™ technology and 400MHz system bus

**IBM 11b/g Wi-Fi® wireless**
IBM 11b/g Wi-Fi® wireless, Mini PCI, Atheros® AR5004G chip

**IBM 11b/g Wi-Fi® wireless**
IBM 11b/g Wi-Fi® wireless, Mini PCI, Atheros® AR5001X chip

**IBM® Modern Bluetooth™ drivers**
One IBM Communications Daughter Card (CDC) socket / custom accessible

**Audio support**
Soft audio / ICH AC97 controller / DirectSound™ support / AD1981B AC97 codec / mono speaker / 0.5 watt / volume up/down, mute button / internal mic / microphone input jack (pink) / headphone jack (green) / mic in (blue) [all 3.5mm]

**Security**
IBM Embedded Security Subsystem 2.0™ / Atmel™ chip / TCG-compliant

**Limited warranty**
3 years / 1 yr battery - EasyServ™ onsite pickup and delivery / service upgrades™ available

**SOFTWARE**
Windows XP Professional
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery

**Preloaded**
- Access IBM
- Access Connections
- Adobe Reader
- IBM Rapid Restore™ Ultra
- Norton AntiVirus (OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™

**Downloadable**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security chip)

**License (CD not included)**
- Lotus® SmartSuite™ Millennium and Lotus Notes® stand-alone Client

**IBM ThinkPad X3 UltraBase™**
Right bay of X3 UltraBase supports most Ultrabay 2000 options

**Additional options**
- Optional battery, CD-ROM, CD-RW, DVD-ROM, Zip 250MB, Combo
- Optional HDD adapter for 2nd disk
- Ultrabay Plus-compatible
- Ultrabay 2000 accessories
- CD-RW/DVD Combo IV Ultrabay 2000 22P6991
- Second HDD Adapter for Ultrabay 2000 08K6668
- ThinkPad Removable Diskette Drive 08K6903
- Ultrabay 2000 Li-ion battery 02K6646
- Enhanced Drive Adapter for Ultrabay 2000 73P3268

**X3 UltraBase bottom contains:**
- Bay for X30 battery (same as X31)

**Security features**
- Second battery support (for Ultrabay battery or second 6-cell battery)
- Security keyhole, UltraBase lock
- Serial and parallel ports
- PS/2 mouse port
- Analog USB-15 monitor port
- One USB port (Ver.2.0 only on X31)
- Ethernet port and modem port
- Retractable feet: 1.41 lb; 638g

**IBM® 8000® Computer**
56 watt AC Adapter

**Asset ID™**
- (system-specific info in box accessed over network)

**PC 2001-compliant**
ACPI 1.0b and 2.0-compliant
CM and DMI 2.0-compliant
ENERGY STAR®-compliant
International Warranty Service27
24 hour x 7 day toll-free warranty support during the warranty28

See footnotes for important warranty information

* Powered by Intel Centrino™ mobile technology

US models announced February 10, 2004

US models withdrawn effective October 2004 or June 2005

(©) IBM Corp. April 2005

(X31F) 3 IBM Corp. April 2005
## IBM ThinkPad X3 (2884) - Express - withdrawn

### Type-model | Processor | GHz | Memory | Screen | Disk | Optical | Mini PCI | CDC: modem/ | Security Chip | Ethernet Planar | Preload | Limited Warranty | Avail date
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2884-BNU | Pentium M 1.3 | 256MB | 12.1" XGA | 20GB | None | Open; wireless upg | Modern | Yes | 10/100 XP Pro | 1 year | 2003
2884-BNG | Pentium M 1.3 | 256MB | 12.1" XGA | 20GB | None | Intel 11b Wi-Fi | Modern | Yes | 10/100 XP Pro | 1 year | 2003
2884-CRU | Pentium M 1.4 | 512MB | 12.1" XGA | 40GB | None | Intel 11b Wi-Fi | Modern | Yes | 10/100 XP Pro | 1 year | 2003
2884-JUE | Pentium M 1.4 | 512MB | 12.1" XGA | 40GB | None | 11a/b Wi-Fi | Mod/Blue | Yes | 10/100 XP Pro | 1 year | 2003

- These small and medium business (SMB) models are part of the IBM US Think Express Program
- The **ThinkPad X3 has a 1 year limited warranty**

### Positioning
- Processor: **Ultra mobility in a versatile ultraportable; one spindle**
- Intel® Pentium® M Processor 1.3 or 1.4GHz with enhanced Intel SpeedStep™ technology and 400MHz frontside bus

### L2 cache
- 1MB / on die (at processor speed) / ECC

### Memory
- 256MB std / 2GB max / PC2100 266MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

### Diskette Drive
- None standard / use optional Ultrabay*-based (in opt X3) or USB-based diskette drive

### Optical drive
- None standard / optional USB-based optical, or optional Ultrabay 2000-based optical removable from optional X3 UltraBase, ThinkPad Dock, or ThinkPad Dock II

### Ultrabay™ 2000
- Supports Ultrabay 2000 devices in optional X3 UltraBase, ThinkPad Dock, or Dock II
- 20 or 40GB, 4200 rpm, 9.5mm, ATA/100 / removable and upgradeable / 9.5mm high bay

### Displays
- 12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand (two latches)

### Graphics controller
- ATI™ Mobility RADEON™ AGP 4X / 16MB DDR1 (DDR-SDRAM)
- Graphics - external Monitor support via analog DB-15 connector / up to 1280x1024x16.7M at 85Hz

### Architecture
- IBM 855PM chipset / 82855PM Memory Controller Hub (MCH-M) / 82801DBM ICH4-M/I Control Hub (ATA-100 IDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB [Bluetooth] / Intel 82802AC Firmware Hub / PCI bus 2.2 32-bit, 33MHz (Ricoh R8C522 CardBus/1394 combo controller, Mini PCI, ext expansion) / PCI bus 33MHz (PC67392 Super I/O for infrared (dock-based diskette, serial, parallel))

### Dimensions
- 10.7" x 8.8" x .98"-1.19" / 273mm x 223mm x 24-39.30mm

### Case material
- Titan composite in the top cover / magnesium alloy bottom case

### Battery - type
- Li-Ion 6-cell / intelligent / supports opt Extended Life Battery on base (for two batteries / supports Ultrabay battery or optional 6-cell battery in X3 UltraBase (for two batteries) / Up to 5.5 hours / with optional Extended Life Battery; up to 10 hours

### Battery - life
- 10 hours

### Wireless antenna
- UltraConnect™ antenna built into the display cover for optional wireless signal reception
- One Mini PCI type III slot (Communications Bay) / customer upgradable

### Wireless upg
- Some: Wireless upgradable with wireless Mini PCI options
- 11b Wi-Fi*: Some: 11b Wi-Fi* wireless, Mini PCI, Intel PRO/Wireless 2100 Network Connection Module

### CDC
- Some: Bluetooth wireless technology / in CDC (with modem)

### Ethernet
- 10/100 ethernet on systemboard / IBM 6256EZ2 Expresschip (physical layer) / PXE

### Audio support
- Soft audio / ICH AC97 controller / DirectSound™ support / AD1981B AC97 codec / mono speaker / 0.5 watt / volume up, down, mute buttons / internal mic / microphone input jack (pink) / headphone jack (green) / mic in (blue) [all 3.5mm]

### Security
- Power-on password / dual hard disk disk password / supervisor pwrw / security keyhole

### Security chip
- IBM Embedded Security Subsystem 2.0™ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security / TCG-compliant

### Software
- **Windows XP Professional**
  - Microsoft Windows XP Professional
  - ConfigSafe™
  - Disk-to-Disk Recovery (in hidden protected area)

### Preloaded
- Access IBM
- Access Connections
- Adobe Reader
- IBM Rapid Restore™ PC
- Norton AntiVirus ( OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™

### Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security chip)

### License (CD not included)
- Lotus® SmartSuite™ Millennium and Lotus Notes® Stand-alone Client

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**See footnotes for important warranty information**

*Powered by Intel Centrino™ mobile technology

(3X1B1) © IBM Corp. December 2004

US models withdrawn effective January 2004 or January 2005

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**Note:** IBM ThinkPad X3 UltraBase™ Option

- Right bay of X3 UltraBase supports most Ultrabay 2000 options:
- Optional battery, CD-ROM, CD-RW, DVD-ROM, Zip 250MB, Combo
- Optional HDD adapter; for 2nd disk such as 80GB HS Hard Disk 9.5mm (5400 rpm) 09N4273
- Ultrabay Plus-compatible

### Ultrabay 2000 accessories
- CD-RW/DVD Combo IV UltraBay 2000
- 08K6068 / ThinkPad Removable Diskette Drive
- Ultrabay 2000 Li-Ion battery 02K6646
- X3 UltraBase bottom contains:
  - Bay for X30 battery (same as X31)

Other features:
- Second battery support (for Ultrabay battery or second 6-cell battery)
- Stereo speakers (1 watt)
- Security keyhole, UltraBase lock
- Serial and parallel ports
- PS/2 mouse port
- Analog DB-15 monitor port
- One USB port (Ver 2.0 only on X31)
- Ethernet port and modem port
- Retractable feet; 1.41 lb; 638g

### Limited warranty
- **1 year**
- EasyServ™ onsite pickup and delivery / service upgrades™ avail

### IBM ThinkPad X3 UltraBase™

- 106.50% powered by Intel Centrino™ mobile technology
- Access Connections
- Adobe Reader
- IBM Rapid Restore™
- Norton AntiVirus ( OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™

### 56 watt AC Adapter
- Asset ID™ (system-specific info in chip accessed over network)

### PC 2001-compliant
- ACPI 1.0b and 2.0-compliant
- CDM and DMI 2.0-compliant
- IBM Rapid Restore PC available to protect software image and data

### International Warranty Service
- 24 hour x 7 day x 7 toll-free warranty support during the warranty via 800-IBM-SERV (426-7378)
## IBM ThinkPad X3 (2884) - Express (October 2003) - withdrawn

<table>
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<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical in UltraBase</th>
<th>ThinkPad X3 UltraBase™</th>
<th>ThinkPad Mini wireless</th>
<th>CDC: modem/Security Ethernet chip</th>
<th>Bluetooth™</th>
<th>Preload</th>
<th>Avail date</th>
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<tr>
<td>2884-25U</td>
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<td>256MB</td>
<td>12.1&quot; XGA</td>
<td>DVD</td>
<td>XP Ultra Portable</td>
<td>Open; wireless upg®</td>
<td>Modern</td>
<td>Yes</td>
<td>10/100 XP Pro</td>
<td>Oct 2003</td>
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<td>10/100 XP Pro</td>
<td>Oct 2003</td>
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</tbody>
</table>

### Positioning
- **Processor**: Ultimate mobility in a versatile ultraportable; one spindle
- **Memory**: Lenovo in-house 512MB, 400MHz system bus

### Display
- **Dimensions**: 12.1" (306mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand (two latches)

### Graphics controller
- ** ATI™ Mobility RADEON™ AGP 4X 16MB DDR-SDRAM**

### Power-on password / dual hard disk password / supervisor password / security keyhole

### Wireless antenna
- **Mini PCI**: UltraConnect™ antenna built into the display cover for optimal wireless signal reception

### Bluetooth™

### Security
- **Security chip**: IBM Embedded Security Subsystem

### Security keyhole

### Power-on password / dual hard disk password / supervisor password / security keyhole

### Windows XP Pro models
- **Microsoft Windows® XP Professional**
- **Disk-to-Disk Recovery**

### Preloaded
- **Access IBM**
- **Access Connections**
- **Adobe Acrobat Reader**
- **IBM Rapid Restore Ultra**
- **Norton AntiVirus (OEM edition)**
- **PC-Doctor™**
- **ThinkPad Utilities**
- **IBM Update Connector™**
- **InterVideo WinDVD (combo, DVD)**

### Downloadable
- **IBM Director Agent**
- **Software Delivery Assistant**
- **System Migration Assistant**
- **Client Security Software**

### License
- **(CD not included)**
- **Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client**

### IBM ThinkPad X3 UltraBase™ (standard with 251/2WU)

### Limited warranty

### Software

### Preloaded
- **Access IBM**
- **Access Connections**
- **Adobe Acrobat Reader**
- **IBM Rapid Restore Ultra**
- **Norton AntiVirus (OEM edition)**
- **PC-Doctor™**
- **ThinkPad Utilities**
- **IBM Update Connector™**
- **InterVideo WinDVD (combo, DVD)**
- **RecordNow and DLA (combo model)**

### Downloadable
- **IBM Director Agent**
- **Software Delivery Assistant**
- **System Migration Assistant**
- **Client Security Software**
- **License (CD not included)**
- **Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client**

**IMPORTANT WARRANTY INFORMATION**

- **Software**
  - Windows XP Pro models
  - **Microsoft Windows® XP Professional**
  - **Disk-to-Disk Recovery** (in hidden protected area)

**Preloaded**
- **Access IBM**
- **Access Connections**
- **Adobe Acrobat Reader**
- **IBM Rapid Restore Ultra**
- **Norton AntiVirus (OEM edition)**
- **PC-Doctor™**
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- **Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client**

**IBM ThinkPad X3 UltraBase™**

- **Right bay of X3 UltraBase supports most Ultrabay 2000 options**
  - Optional battery
  - CD-ROM, DVD-RW, Zip 250MB/Combo
  - Optional HDD adapter, for 2nd disk such as 80GB Hard Disk 9.5mm (4200 rpm) 08K9869
  - Ultrabay Plus-compatible
  - Ultrabay 2000 accessories
  - CD-RW/DVD Combo IV Ultrabay 2000 22P6991
  - Second HDD Adptr for Ultrabay 2000 08K9668
  - ThinkPad Removable Diskette Drive 08K9603
  - Ultrabay 2000 Li-ion battery 02K6646
  - X3 UltraBase bottom contains:
    - Bay for X30 battery (same as X31)
  - Other features:
    - Second battery support (for Ultrabay battery or second 6-cell battery)
    - Stereo speakers (1 watt)
    - Security keyhole, Ultrabay Lock
    - Serial and parallel ports
    - PS/2 mouse port
    - Analog DB-15 monitor port
    - One USB port (Ver 2.0 only on X31)
  - Ethernet port and modem port
  - Retractable feet; 1.41 lb; 638g

**IBM Rapid Restore Ultra**

- **56 watt AC Adapter**
- **Asset ID™ (system-specific info in chip accessed over network)**

**PC 2001-compliant**

**ACPI 1.0b and 2.0-compliant**

**IBM and DMI compliant**

**IBM Rapid Restore Ultra**

- **To protect software image and data**
- **International Warranty Service**

- **24 hour x 7 day** toll-free hardware support during the warranty

**Footnotes**

- **See footnotes for important warranty information**
- **US models announced October 7, 2003**
- **US models withdrawn effective April 2004**

**Powered by Intel Centrino™ mobile technology**

**Access IBM**

- **24 hour x 7 day** toll-free hardware support during the warranty

**IBM Corp. April 2004**

**See ibm.com/pcl/us/accessories**

**IBM Update Connector™**

**InterVideo WinDVD (combo, DVD)**

**RecordNow and DLA (combo model)**

**IBM Director Agent**

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**System Migration Assistant**

**Client Security Software**

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**See ibm.com/pcl/us/accessories**

**IBM Corp. April 2004**
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<th>Processor GHz</th>
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<td>Modem</td>
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<td>Modem</td>
<td>Yes</td>
<td>Gigabit XP Pro Oct 2003</td>
</tr>
</tbody>
</table>

**Limitations:**
- **The 2885 has a 3 year limited warranty**
- **The Thinkpad Business Line (SMB) models are part of the IBM US Think Express Program**

**SOFTWARE:**
- **Windows XP Professional**
  - Microsoft Windows XP
  - Intel 11b Wi-Fi®
  - IBM Rapid Restore Ultra
  - Norton AntiVirus (OEM edition)
  - PC-Doctor™
  - ThinkPad Utilities
  - IBM Update Connector™
  - Intel/Video WinDVD
  - RecordNow and DLA

**Downloadable:**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (software chip)

**License:**
- None
- *Lotus* SmartSuite® Millennium and Lotus Notes® Stand-alone Client

**Hardware:**
- **Keyboard**
  - IBM® Pentium® M Processor 1.6Ghz with enhanced Intel SpeedStep™ technology and 400MHz system bus
  - 1MB on die (at processor speed) / ECC

- **Memory**
  - 256 or 512MB split / 2GB max / PC2700 333MHz DDR1 (memory controller limits speed to 266MHz) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

- **Diskette drive**
  - None standard / use optional Ultrabay™-based (inX3) or USB-based diskette drive
  - DVD/CD-RW / 16X/10X/24X/8X8 speed / removable from Ultrabay 2000
  - Supports Ultrabay 2000 devices in standard X3 UltraBase (or optional ThinkPad Dock II)
  - IBM® Embedded Security Subsystem 2.0
  - IBM® Access IBM button / palm rest / TrackPoint
  - IBM® IBM Enhanced Drive 73P3312
  - IBM® Enhanced Drive 73P2801
  - IBM® Enhanced Drive 73P2802
  - IBM® Enhanced Drive 73P2803
  - IBM® Enhanced Drive 73P2804

- **Display**
  - 12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / easy-open cover to unlatch and open with one hand (two latches)

- **Graphics**
  - ATI Mobility RADEON™ / AGP 4X / 16MB DDR1 (DDR-SDRAM)

- **Keyboard**
  - Standard-size keys / 97% size of T Series / 87-key / 18.5mm pitch / 2.5mm stroke / Access IBM button / palm rest / TrackPoint / Press-to-Select / Internet Scroll Button / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap illuminates the keyboard to improve visibility in low-light conditions

- **Dimensions**
  - without X3 UltraBase: 10.7" x 8.8" x 0.9-1.19", 273mm x 223mm x 24.9-30.2mm
  - with X3 UltraBase and optical: 10.8" x 8.9" x 2.0-2.3", 273 x 227 x 21-58mm

- **Travel weight**
  - 333MHz DDR1 (memory controller limits 2.5lbs / (2.45kgs)

- **Battery - type**
  - Li-Ion 6-cell / intelligent / supports optional Extended Life Battery

- **Architecture**
  - Intel® 855PM chipset / 82855PM Memory Controller Hub (MCH) / 82801DBMICH4-M/I O Controller Hub (ATA-100 EIDE / PCE bus, ethernet MAC, Low Pin Count (LPC) interface, USB [Bluetooth] / Intel 82802AC Firmware Hub / PCI bus 2.2-32bit-32, 33MHz (Ricoch 855S22 CardBus/1394 combo controller, Mini PCI, ext expansion) / PCI bus 33MHz (PC679282 I/O for infrared [dock-based diskette, serial, parallel])

- **Media**
  - X3 UltraBase media slice (see right side)

- **Docking Station**
  - Optional ThinkPad Dock or Dock II (includes Ultrabay 2000 and half-size PCI slot)
  - Communication Bay / customer upgradeable

- **Compact Flash slot / 7110u**
  - One Type II / CardBus 32-bit / PCMCIA 2.1 / integrated door

- **IEEE 1394**
  - IEEE 1394 (FireWire) port (4-pin)

- **Ports**
  - Two USB (version 2.0) / external DB-15 monitor / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet / parallel / IEEE 1394 (4-pin) / no serial keyboard, or mouse ports

- **Wireless antenna**
  - UltraConnect™ antenna built into the display cover for optional wireless signal reception
  - IBM® ThinkPad X200 Series Mobile Broadband (11a/b/g) / supports optional IBM Microdrive™ / 11b Wi-Fi 11a/b/g

- **Security**
  - Power-on password / dual hard disk password / supervisor password / security keyhole

- **Security chip**
  - IBM Embedded Security Subsystem 2.0 / security chip

- **Limited warranty**
  - 3 years / 1 year battery - EasyServ™ / onsite pickup and delivery / service upgrades available

See footnotes for important warranty information

*Powered by Intel Centrino™ mobile technology

US models announced October 7, 2003

US models withdrawn effective January 2005
<table>
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<th>Memory</th>
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<th>Display</th>
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<tr>
<td>2885-4LU</td>
<td>Pentium M 1.7</td>
<td>256MB or 512MB max</td>
<td>None</td>
<td>12.1&quot; (308mm) XGA</td>
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<td>2885-4WU</td>
<td>Pentium M 1.7</td>
<td>512MB or 1GB max</td>
<td>None</td>
<td>12.1&quot; (308mm) XGA</td>
</tr>
</tbody>
</table>

**SOFTWARE**

- Windows XP Professional
  - Microsoft Windows XP Professional
  - Disk-to-Disk Recovery

**Preloaded**

- Access IBM
- Access Connections
- Adobe Reader
- IBM Rapid Restore Ultra
- Norton AntiVirus (OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™
- Intel Video WinDVD
- RecordNow and DLA

**Downloadable**

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- Client Security Software (for security chip)

**License**

- Lotus™ SmartSuite™ Millennium
- Lotus Notes™ Stand-alone Client

**Over the phone service**

- 3 years
- 24 hour x 7 day
- IBM PC Technical Support
- IBM Bridge Link

**Limited warranty**

- 3 years/1yr battery - EasyServ™, onsite pickup and delivery - service upgrades available

**See footnotes for important warranty information**

*Powered by Intel Centrino™ mobile technology*
IBM® ThinkPad® X40 (2371) - withdrawn

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk UltraBase</th>
<th>X4 UltraBase</th>
<th>Mini PCI wireless</th>
<th>C/DC: modem/</th>
<th>Sec chip</th>
<th>Ethernet Battery</th>
<th>WH (W) Gbl</th>
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<tbody>
<tr>
<td>2371-13U</td>
<td>Pentium® M 1.0</td>
<td>256MB 12.1&quot; XGA 20GB</td>
<td>None</td>
<td>Optional</td>
<td>Open; wireless upg</td>
<td>Modern</td>
<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Ent Feb 2004</td>
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<td>2371-1CU</td>
<td>Pentium® M 1.0</td>
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<td>Intel 1.1b Wi-Fi</td>
<td>Modern</td>
<td>Yes</td>
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<td>XP Pro</td>
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<td>2371-57U</td>
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<td>256MB 12.1&quot; XGA 40GB</td>
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<td>Open; wireless upg</td>
<td>Modern</td>
<td>Yes</td>
<td>XP Pro</td>
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<td>XP Pro</td>
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<td>2371-87U</td>
<td>Pentium® M 1.2</td>
<td>512MB 12.1&quot; XGA 40GB</td>
<td>None</td>
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<td>Intel 1.1b Wi-Fi</td>
<td>Modern</td>
<td>Yes</td>
<td>XP Pro</td>
<td>8</td>
<td>XP Pro</td>
<td>W Feb 2004</td>
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<td>2371-7GU</td>
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<td>4</td>
<td>XP Pro</td>
<td>W Feb 2004</td>
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<td>2371-6EU</td>
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<td>IBM 11b/g</td>
<td>Modern</td>
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<td>XP Pro</td>
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<td>512MB 12.1&quot; XGA 32/Blue</td>
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<td>Optional</td>
<td>IBM 11b/g</td>
<td>Modern</td>
<td>Yes</td>
<td>XP Pro</td>
<td>8</td>
<td>XP Pro</td>
<td>W Feb 2004</td>
<td></td>
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</tbody>
</table>

Positioning: Ultimate mobility in a versatile ultraportable: one spindle

Processor: Intel® Pentium® M Processor Ultra Low Voltage 1.0GHz or Low Voltage 1.2GHz

L2 cache: 1MB

Memory: 256MB or 512MB big. Wi-Fi®b to 1.53GB max

Display: 12.1" (308mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

Graphics: Integrated Intel Extreme™ Graphics 2 / in 855GMG GMCH / uses main memory (up to 64MB) / 266MHz

Keyboard: Standard-size keys / 97% size of T Series / 87-key / 1.28 to 1.53GB max / 266MHz

Case material: 9.5mm high bay / Supports Ultrabay Slim accessories

Weighta: 2.7 lb (1.23kg); 8-cell battery models: 4.99 lb (2.22kg)

Battery: Li-ion 4- or 8-cell / intelligent / supports optional Extended Life Battery on base (for two batteries) / supports optional battery in X4 UltraBase Dock (for two batteries)

Battery life10: with 4-cell 3.5 hr; with 8-cell: 7.5 hr; with 8-cell and optional Extended Life Battery; up to 10 hr

Architect: IBM 855GMG chipset / 88252GME Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 IDE, PCI bus, Low Pin Count (LPC) interface, USB [Bluetooth]) / Intel 82802AC Firmware Hub / pci bus 2.2-3.3v, 33MHz (ethernet, P55C511 CardBus controller, Mini PCI) / LPC bus 33MHz (PCI87392 Super I/O for infrared [dock-based ports])

Mobile media base: Supports optional X4 UltraBase Dock (see right side)

Security: One Secure Digital Card slot / supports SD memory cards used in consumer devices

Mobile Connect: One Type I or one Type II / CardBus 32-bit / PCMCIA 2.1 / integrated door

Ethernet: IBM 11b/g Wi-Fi Modem Yes Gigabit

POWERdaughter:

ULTRAdaughter:

Other options at

Licensed (CO not included)

IBM Director Agent

Adobe Reader

Access Connections

Add One

IBM Rescue and Recovery™

Norton AntiVirus (OEM edition)

PC-Doctor™

ThinkPad Utilities

IBM Update Connector™

Downloadable:

IBM Mobile Connect

Software Delivery Assistant

System Migration Assistant

Client Security Software (for security chip)

License:

Lotus Notes® Stand-alone Client

Supports IBM ThinkVantage® technologies

IBM ThinkPad X4 UltraBase™ Dock

- Provides desktop expansion and cable management for the X40
- Easily connects to the bottom of the X40
- Converts the X40 to a two-spindle system by supporting optional Ultrabay Slim accessories in left-side:
  - Ultrabay Slim Li-Polymer Battery 3-cell: 08K8190
  - CD-RW/DVD Combo II Ultrabay Slim Drive 73P3268
  - Multi-Base UltraBay Plus Ultrabay Slim Drive 73P3342

- Second HDD Adapter for Ultrabay Dock 62P4554

- Disks supported:
  - 40GB HD Hard Disk 08K9861
  - 60GB HD Hard Disk 73P3357
  - 80GB HD Hard Disk 09N4273

- Other features:
  - Power button (front)
  - Stereo speakers (1 watt)
  - Security key lock, security keyhole, and optical security screw
  - Serial and parallel ports
  - PS/2 port for keyboard or mouse
  - Analog DB-15 monitor port
  - Three USB 2.0 ports (via USB hub)
  - Ethernet port (Gigabit Ethernet)
  - Modem port

- Retractable feet: 1.3; 580g

- 56 watt AC Adapter

- Asset ID™ (system-specific info in chip accessed over network)
- AC31 Db and 2.0-compliant
- International Warranty Service

See footnotes for important warranty information

Power by Intel Centri.. mobile technology

© 2004 IBM Corp.
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>GHz Memory</th>
<th>Screen</th>
<th>Optical in UltraBase</th>
<th>ThinkPad UltraBase™</th>
<th>Mini PCI wireless</th>
<th>CDC: modem/Sec chip</th>
<th>Ethernet Battery</th>
<th>Planar</th>
<th>cells</th>
<th>Preload</th>
<th>Avail date</th>
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<tr>
<td>2386-13U</td>
<td>Pentium M 1.1 256MB 12.1&quot; XGA 20GB</td>
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<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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<td>XP Pro</td>
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<td>XP Pro</td>
<td>Feb 2004</td>
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<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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<td>Intel 11b Wi-Fi</td>
<td>Modern</td>
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<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
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<td>2386-5GUC</td>
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<td>Intel 11b Wi-Fi</td>
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<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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<td>2386-6GUC</td>
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<td>Intel 11b Wi-Fi</td>
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<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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<td>2386-66U</td>
<td>Pentium M 1.2 256MB 12.1&quot; XGA 40GB combo X4 UltraBase™</td>
<td>Intel 11b Wi-Fi</td>
<td>Modern</td>
<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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<td>2386-8EUC</td>
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<td>IBM 11b/g</td>
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<td>Yes</td>
<td>Gigabit</td>
<td>4</td>
<td>XP Pro</td>
<td>Feb 2004</td>
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</table>

* These small and medium business (SMB) models are part of the IBM US Think Express Program

**定位器**

<table>
<thead>
<tr>
<th>Processor</th>
<th>Ultimate mobility in a versatile ultraportable; one spindle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L2 cache</strong></td>
<td>Intel® Pentium® M Processor Ultra Low Voltage 1.0GHz or Low Voltage 1.2GHz</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>with enhanced Intel SpeedStep” technology and 400MHz system bus</td>
</tr>
<tr>
<td><strong>Diskette drive</strong></td>
<td>None standard / use optional USB-based diskette drive</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>Some: DVD-ROM / 24x-8x speed / removable from UltraBay™ Slim in X4 UltraBase</td>
</tr>
<tr>
<td><strong>Audio support</strong></td>
<td>Some: DVD-ROM/CD-RW / 24x/24x/24x/8x3/ speed / removable from X4 UltraBase</td>
</tr>
<tr>
<td><strong>UltraBay™ Slim</strong></td>
<td>Supports UltraBay Slim devices in optional or standard X4 UltraBase Dock</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>40GB (4200 rpm), 9.5mm, ATA-100 / 1.8&quot; / Y.9mbl / replaceable and upgradable / 9.9mm high bay / IBM Active Protection System (shock protection)</td>
</tr>
<tr>
<td><strong>Keyboard</strong></td>
<td>Standard-size keys / 97% size of T series / 87-key / 16.5mm pitch / 2.5mm stroke / Access IBM button / palm rest / TrackPoint® / &quot;Press-to-Select,&quot; Internet Scroll Bar® / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap</td>
</tr>
<tr>
<td><strong>ThinkLight™</strong></td>
<td>Illuminates the keyboard to improve visibility in low-light conditions</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>4-cell without X4 UltraBase: 10.5&quot; x 8.3&quot; x .81-1.06&quot; / 268mm x 211mm x 20.6-26.9mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>8-cell with X4 UltraBase and optical / 10.7&quot; x 1.5&quot; x 2.7 / 273 / 32-38.4mm</td>
</tr>
<tr>
<td><strong>Battery - type</strong></td>
<td>4-cell with battery: 2.7 lb (1.23kg); 8-cell with battery: 3.1 lb (1.43kg)</td>
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<tr>
<td><strong>Battery - life</strong></td>
<td>4-cell: 3.5 hours; 6G with up: 7.5 hours; 8-cell and optional Extended Life Battery: up to 10 hours</td>
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</table>

**软件**

<table>
<thead>
<tr>
<th>Windows XP Professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Microsoft® Windows® XP</td>
</tr>
<tr>
<td>- Disk-to-Disk Recovery (in hidden protected area)</td>
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<tr>
<td><strong>Preloaded</strong></td>
</tr>
<tr>
<td>- IBM Director Access</td>
</tr>
<tr>
<td>- Access Connections</td>
</tr>
<tr>
<td>- Adobe Reader</td>
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<tr>
<td>- IBM Rescue and Recovery™</td>
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<td>- Norton AntiVirus (OEM edition)</td>
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<td>- PC-Doctor®</td>
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<td>- IBM Update Connector™/15</td>
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<td>- IBM InterVideo WinDVD (DVD, combo)</td>
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<td>- RecordNow and DLA (combo)</td>
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**下载方法**

- IBM Director Agent
- IBM PC-Doctor
- IBM PCMCIA PC Card

**IBM ThinkPad X4 UltraBase™**

- Provides desktop expansion and cable management for the X40
- Easily connects to the bottom of the X40 for traveling
- Converts the X40 to a two-spindle system by supporting optional UltraBay Slim devices in left side:
  - UltraBay Slim Li-Polymer Battery 3-cell: 08K8190
  - UltraBay Slim PC Card/DC Combo II UltraBase: 73P3294
  - ThinkPad Multi-Burner UltraBase Slim Drive: 73P3294
- Second HDD Adapter for UltraBase Slim: 8P45434
- Disks supported:
  - 30GB Hard Disk: 09N4268
  - 40GB Hard Disk: 09K8916
  - 80GB Hard Disk: 09N4273

**其他特性**

- Power button (front)
- Security key lock, security keyhole, and optical security screws
- Serial and parallel ports
- PS/2 port for keyboard or mouse
- Analog DB-15 monitor port
- Floppy drive
- Ethernet port (Gigabit Ethernet)
- Internal module (via USB hub)
- ServicePac© planar

**IBM Embedded Security Subsystem 2.0**

- Multi-factor authentication / smartcards / electronics and cards / TCG-compliant

**Limited warranty**

| 1 year - EasyServ on-site pickup and delivery / service upgrades available |

**支持**

- 56 mod AC Adapter
- Asset ID™ (system-specific info in chip achieved over network) / ACPI 1.0b and 2.0-compliant
- International Warranty Service

**服务**

- 24 hour x 7 day toll-free warranty support during the warranty
The ThinkPad X40 series is a line of laptop computers manufactured by IBM. The series was launched in May 2004 and was designed to provide enhanced security features and improved wireless connectivity. The X40 series includes models with Intel Pentium M processors and supports various expansion cards and interfaces, such as Secure Digital slots, USB ports, and Ethernet connections. The series is also equipped with ThinkVantage software for enhanced security and productivity.

**Software Features**
- Windows XP Professional
  - Disk-to-Disk Recovery
  - Norton AntiVirus (OEM edition)
  - PC-Doctor®
- IBM Update Connector
- Intel/InterVideo WinDVD (DVD, combo)
- RecordNow and DLA (combo)

**Preloading**
- Access IBM
- Access Connections
- Adobe Reader
- IBM Rescue and Recovery™
- Norton AntiVirus (OEM edition)
- PC-Doctor®

**Downloads**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- IBM Client Security Software (for security chip)

**License**
- (CD not included)
- Lotus® SmartSuite® Millennium
- Lotus Notes® Stand-alone Client

**Other Features**
- Power button (front)
- Speaker 1 watt
- Security key lock, security keyhole, and optical security screw
- Serial and parallel ports
- PS/2 port for keyboard or mouse
- Analog DB-15 monitor port
- Two USB (version 2.0), plus one powered USB port for select IBM options

**Supported Disks**
- 3-cell 08K8190
- 80GB HS Hard Disk 09N8616
- 30GB Hard Disk 09N4268
- 4GB Microdrive
- 30GB Hard Disk 09N4268
- 8-cell battery and X4 UltraBase with combo: 5.0 lb (2.26kg)
- 8-cell with X4 UltraBase and optical: 10.7” x 9.3” x 1.5-2.0”
- 8-cell without X4 UltraBase: 10.5” x 9.3” x .81-1.06”
- 4-cell without X4 UltraBase: 10.5” x 8.3” x .81-1.06”
- Ultrabay Slim Drive 73P3288
- SonyEricsson® R5C511 CardBus controller, Mini PCI

**Security Features**
- Power-on password
- Dual hard disk password
- Supervisor password
- Security keyhole

**IBM Embedded Security Subsystem 2.0™**
- Hardware key storage
- Multi-factor authentication
- Local file encryption
- Enhances VPN security
- TCG-compliant

**Limited Warranty**
- 1 year
- EasyServ™ on-site pickup and delivery
- Service upgrades available

See footnotes for important warranty information.

*Powered by Intel Centrino™ mobile technology*
<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>RAM</th>
<th>Screen</th>
<th>Disk</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>Codec</th>
<th>Ethernet</th>
<th>Battery</th>
<th>Workhorse</th>
<th>Preload</th>
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<td>10/100</td>
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<td>XP</td>
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<td>Celeron</td>
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<td>20GB Combo</td>
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<td>10/100</td>
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<td>11b Wi-Fi</td>
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<td>20GB Dorman</td>
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**Positioning**

- Powerful desktop replacement; three-spindle system
- Intel® Celeron 2.0GHz with 400MHz frontside bus or Intel® Pentium 4 at 2.4, 2.8 or 3.0GHz with 400MHz frontside bus
- L2 cache: Celeron: 128KB; Pentium 4: 512KB; All: on die (at processor speed) / ECC
- Memory: 128 or 256MB std / 1GB max / PC2100 266MHz DDR1 / non-parity / CL2/5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available
- Diskette drive: 3.5" 1.44MB / fixed, not removable / 12.7mm high
- Combo: Same as DVD above / fixed, not removable / 12.7mm high
- Disk: Same as DVD above / fixed, not removable / 12.7mm high
- Display: Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits
- Some: 15.0" (381.0mm) SXGA+ (1400x1050) TFT color / Active Matrix / 150 nits
- All: One latch to unlatch and open with one hand

**Graphics**

- Integrated Intel Extreme™ Graphics / Direct AGP / in 582GM GMMH / uses main memory (8 with 32MB with 128MB memory; 8 to 64MB with 256MB+) / 133MHz / DMVT
- Graphics external: External monitor support via analog DB-15 connector / up to 1000x1200 at 85Hz / DDC2B
- ThinkPad EasyLift base allows smooth positioning for a comfortable viewing angle
- TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar,15 magnifying glass /
- soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap
- Touchpad: No touchpad (UltraNav multi-pointing system) / no ThinkLight™

**Dimensions**

- 12.9" x 11.1" x 1.5-2.0"; 329mm x 282.5mm x 37.1-50.9mm; Volume: 4 liters

**Weight**

- 4.4 lbs / 2 kg
- 4.6 lbs / 2.1 kg
- 4.8 lbs / 2.2 kg

**Keyboard**

- IBM Enhanced Performance USB Keyboard 73P2620
- IBM USB Keyboard with UltraNav 31P8950

**Hard Drive**

- IBM 11a/b/g Wireless CardBus Adapter 31P9101
- IBM H Rate Wireless LAN PC Card 128 09N9904
- IBM ImageUltra Services available
- IBM Rapid Restore PC available to protect stored data from the day of purchase and data International Warranty Service

**Security**

- Power-on password / hard disk password / supervisor password / security keyhole
- Software 14

**SOFTWARE**

- Windows XP Professional
  - - Microsoft® Windows® XP Professional
  - - Disk-to-Disk Recovery

**Downloadable**

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

**License**

- CD (not included)

Universal 120 watt AC adapter

- Asset ID™, (system-specific info in chip accessed over network)
- PC 2001 and PXX 2.0-compact
- ACPI 1.0 and 2.0-compact
- CIM and DMI 2.0-compact
- IBM ImageUltra™ Services available
- IBM Rapid Restore PC available to protect stored data from the day of purchase and data International Warranty Service
- 24 hour x 7 day 37 toll-free warranty support during the warranty

**Limited warranty**

- Year - EasyServ™, 11 onsite pickup and delivery
  - 128 MB PC2700 DDR SDRAM CL2.5 SODIMM 31P9288
  - 256 MB PC2700 DDR SDRAM CL2.5 SODIMM 31P9301
  - 512 MB PC2700 DDR SDRAM CL2.5 SODIMM 31P9382
  - IBM USB 2.0 Portable Multi-Burner Drive 22P9163
  - IBM USB 2.0 Portable 40GB Hard Drive 22P7196
  - IBM Onboard Key 256MB 22P9228
  - IBM USB 2.0 Memory Key 512MB 22P9230
  - IBM 4GB Microdrive™ with PC Card 09N4280
  - IBM Optical 3-BUTTON Travel Mouse Wheel Mouse 31P7410
  - IBM Optical 3-BUTTON ScrollPoint® Mouse 31P8700
  - IBM Optical 3-BUTTON ScrollPoint Pro Mouse 31P8700

**See footnotes for important warranty information**

US models announced April 22, 2003
US models withdrawn effective October 2003 or January 2005

**Copyright**

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<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed</th>
<th>Disk GB</th>
<th>Mini PCI</th>
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**Positioning**

Powerful desktop replacement; three-spindle system

**Processor**

Intel® Celeron 2.0 or 2.2GHz with 400MHz system bus or Intel Pentium 4 at 2.2, 2.4, or 3.0GHz with 400MHz system bus

**L2 cache**

Celeron®: 128MB; Pentium® 4: 512KB; All: on die (at processor speed) / ECC

**Memory**

128 or 256MB std / 1GB max / PC2100 266MHz DDR1 / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Diskette drive**

3.5", 1.44MB / fixed, not removable / 12.7mm high

**CD**

Some: CD-ROM / 24X-10X speed / fixed, not removable / 12.7mm high

**DVD**

Some: DVD-ROM / 24X-8X speed / fixed, not removable / 12.7mm high

**Combo**

Some: DVD-ROM/CD-RW / 24X/10X/24X/8X speed / fixed, not removable / 12.7mm high

**Disk**

20GBB, 40GB / 4200 rpm / 9.5mm high / removable / 9.5mm high bay

**Display**

Serie: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits

**Graphics**

Integrated Intel Extreme™ Graphics / Direct AGP / in 852GM GMCH / uses main memory (8 to 32MB with 128MB memory) / 8 to 64MB with 256MB / 133MHz / DMVT

External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B

ThinkPad EasyPoint base allows smooth positioning for a comfortable viewing angle

**Keyboard**

ThinkPad ComfortSlat keyboard with built-in incline provides maximum typing comfort

**Touchpad**

No touch pad (UltraNav multi-pointing system) / no ThinkLight™

**Dimensions**

12.9" x 11.1" x 1.5-2.0"; 329mm x 282.5mm x 37.1-50.9mm; Volume: 4 liters

**Weight**

1.3 to 1.45 hr; 12-cell battery models: up to 2.0 hr

**Case material**

Lithium Ion 6 or 12-cell / intelligent / removable

**Battery**

Lithium Ion 6 or 12 cell / intelligent / removable

6-cell battery models: 1.3 to 1.45 hr; 12-cell battery models: up to 2.0 hr

**Architecture**

Intel® 855GM chipset / 82852GM Graphics Memory Controller Hub (GMCH) / 82801BM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.2 32-bit, 33MHz (T1® PCI1410A CardBus controller, Mini PCI) / PCIe bus 33MHz (PC8730F Super I/O for diskette, parallel, PS/2)

**PC Card Std slots**

One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door

**Ports**

Four USB (Version 2.0) / parallel / external monitor (DB-15) / RJ-11 (modem) / RJ-45 (ethernet) / PS/2 (for keyboard or mouse) / no serial or infrared port

**Video out**

No video out port

**IEEE 1394**

None

**Wireless antenna**

None

**Mini PCI**

One Mini PCI type III slot (Communications Bay) / not customer upgradable

**Non**

Empty / not customer upgradable

**CDD**

One Communications Daughter Card (CDC) socket (used by modem) / not accessible

**Modem**

56K V.90 (V.92-designed) modem in CDC / Agere® chipset

**None**

None

**Bluetooth**

None

**Ethernet**

10/100 ethernet on planar / Broadcom® BCM5901 (PHY/MAC) / PXE / Wake on LAN®

**Audio support**

Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / mono input / mono output / 2 watt / volume up, down / mute buttons / no internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack

**Security**

Power-on / Password hard disk / password supervisor / security keyhole

**Security chip**

None

**Limited warranty**

1 year / EasyServ™ / on-site pickup and delivery

**Service options**

Service upgrades provide up to five years of on-site depot repair service coverage from date of ThinkPad purchase (including warranty period)

**SOFTWARE**

Windows XP Home models

- Norton AntiVirus (OEM edition)
- Veritas (combo models)
- InterVideo WinDVD (combo, DVD)
- Norton AntiVirus (OEM edition)
- PC-Doctor®
- ThinkPad Utilities
- IBM Update Connector™

Downloadable

- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

License (CD not included)

- Lotus® SmartSuite™ Millennium and Lotus Notes® Stand-alone Client

Universal 120 watt AC adapter

Asset ID™ (system-specific info in chip accessed over network)

PC 2001 and PXE 2.0-compliant

CIM and DMI 2.0-compliant

IBM ImageUltra™ Services available

IBM Rapid Restore PC available to protect software and data

International Warranty Service™

24 hour x 7 day toll-free warranty support during the warranty via 800-IBM-SERV (426-7378)

ServicePac 2 yr IOR 9x5 NBD
ServicePac 4 yr IOR 9x5 NBD
ServicePac 5 yr IOR 9x5 NBD
ServicePac 6 yr IOR 9x5 NBD
ServicePac 7 yr IOR 9x5 NBD
ServicePac 8 yr IOR 9x5 NBD
ServicePac 9 yr IOR 9x5 NBD
ServicePac 10 yr IOR 9x5 NBD
ServicePac 11 yr IOR 9x5 NBD
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ServicePac 16 yr IOR 9x5 NBD
ServicePac 17 yr IOR 9x5 NBD
ServicePac 18 yr IOR 9x5 NBD
ServicePac 19 yr IOR 9x5 NBD
ServicePac 20 yr IOR 9x5 NBD

See footnotes for important warranty information.

US models announced on April 22, August 5, October 7, or October 14, 2003

US models withdrawn effective October 2003, April 2004, or January 2005

(G40H) © IBM Corp. December 2004
**IBM® ThinkPad® G40 (April 2004) - withdrawn**

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<td>XP Pro</td>
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**Positioning**
- **IBM®**: Powerful desktop replacement; three-spindle system

**Processor**
- Intel® Celeron 2.5 or 2.6GHz with 400MHz system bus or Intel Pentium 4 at 2.6 or 3.0GHz with 800MHz system bus
- Celeron: 128KB, All: on die (at processor speed); ECC

**Memory**
- 128 or 256MB std / 1GB max / PC2100 266MHz or PC2700 333MHz DDR1
- (memory controller limits speed to 266MHz) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available

**Diskette drive**
- CD: Some: CD-ROM / 4X10X speed / fixed, not removable / 12.7mm high
- DVD: Some: DVD-ROM / 24X8X speed / fixed, not removable / 12.7mm high
- Combo: Some: DVD-ROM / CD-RW / 24X10X / 24X8X speed / fixed, not removable / 12.7mm high

**Display**
- 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits / one latch to unlatch and open with one hand

**Graphics**
- Integrated Intel Extreme™ Graphics / Direct AGP / in 852GM GMCH / uses main memory (8 to 32MB with 128MB memory; 8 to 64MB with 256MB+) / 133MHz / DMVT
- External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B
- ThinkPad EasyView base allows smooth positioning for a comfortable viewing angle

**Keyboard**
- 87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)
- ThinkPad ComfortSmart keyboard with in-line provides comfort TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar / magnifying glass / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap

**Touchpad**
- No touch pad (UltraNav® multi-pointing system) / no ThinkLight™

**Dimensions**
- 12.9 x 11.1 x 1.5-2.0" / 329mm x 282.5mm x 37.1-50.9mm; Volume: 4 liters
- 12.9 x 11.1 x 1.5-2.0" / 329mm x 282.5mm x 37.1-50.9mm; Volume: 4 liters

**Weight**
- 7.63 lb (3.47kg) / 7.70 lb (3.50kg)

**Case material**
- Color: black; All: Acrylonitride-Butadiene-Styrene/Poly carbonate (ABS/PC) plastic

**Battery**
- Lithium 6-cell or 12-cell / intelligent / removable
- Lithium-Ion 6-cell or 12-cell / intelligent / removable

**Architecture**
- Intel 852GM chipset / 82852GM Graphics Memory Controller Hub (GMCH)
- 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub) / PCI bus 2.1 32-bit, 33MHz (T1® PCI1410A CardBus controller, Mini PCI) / LPC bus 33MHz (PC87393 Super I/O for diskette, parallel, PS/2)

**PC Card Std slots**
- One Type I, one Type II, or one Type II / CardBus 32-bit / PCMCIA 2.1 / integrated door
- USB (2.0) / parallel / external monitor (DB-15) / RJ-11 (modem) / RJ-45 (ethernet) / PS/2 (for keyboard or mouse) / no serial or infrared

**Video out**
- No video out port

**IEEE 1394**
- None

**Wireless antenna**
- None

**Mini PCI**
- One Mini PCI type III slot (Communications Bay) / not customer upgradeable

**IEEE 1394**
- None

**NIC**
- One Communications Daughter Card (CDC) socket (used by modem) / not accessible

**Modem**
- 56K V.90 (V.92-designed) modem in CDC / Agere® chipset

**Ethernet**
- 10/100 ethernet on planar / Broadcom BCM5901 (PHY/MAC) / PXE / Wake on LAN®

**Audio support**
- Soft audio / ICH AC97 controller / DirectSound® support / AD1981 A&G 128KB codec / mono speaker / 2 watt / volume up, down, mute buttons / no internal mic / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack

**Security**
- Power-on password / hard disk password / supervisor password / security keyhole

**Limited warranty**
- 1 year / EasyServ™ onsite pickup and delivery

**Service options**
- Service upgrades provide up to five years of onsite depot repair service coverage from date of ThinkPad purchase (including warranty period)

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<td>14.1&quot; XGA</td>
<td>30GB</td>
<td>Combo</td>
<td>Modem 10/100</td>
<td>12-cell Li-Ion</td>
<td>XP Pro</td>
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<td>Combo</td>
<td>Modem 10/100</td>
<td>12-cell Li-Ion</td>
<td>XP Pro</td>
<td>No Apr 2004</td>
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</table>

**SOFTWARE**

- Windows XP Home models
  - Microsoft® Windows® XP
  - Home Edition®
  - Disk-to-Disk Recovery
  - (in hidden protected area)

- Windows XP Pro models
  - Microsoft® Windows® XP Professional®
  - Disk-to-Disk Recovery
  - (in hidden protected area)

**Preloaded (all)**
- Access IBM®
- Access Connections
- Adobe Reader
- IBM Rapid Restore™
- IBM RecordNOW and IBM Drive Letter Access powered by Sonic products (combo models)
- InterVideo WinDVD (combo, DVD)
- Norton AntiVirus (OEM edition)
- PC-Doctor®
- ThinkPad Utilities
- IBM Update Connector™

**Downloadable**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant
- License (CD not included)
- Lotus® SmartSuite Millennium and Lotus Notes® Stand-alone Client

**Other ServicePac options at ibm.com/services/its/us/source/maspspleu.pdf**

- IBM Access Connections
- IBM Update Connector
- IBM Rapid Restore PC available to protect software image and data
- International Warranty Service
- 24 hour x 7 day toll-free warranty support during the warranty period

**Other ServicePac options at ibm.com/services/its/us/source/wamomxeu.pdf**

- ServicePac 23-yr IOR 9x5 NBD
- ServicePac 2 yr IOR 9x5 NBD
- ServicePac 3 yr IOR 9x5 NBD
- ServicePac 4 yr IOR 9x5 NBD
- ServicePac 5 yr IOR 9x5 NBD
- ServicePac 2 yr P&L P/U Depot
- ServicePac 3 yr P&L P/U Depot
- ServicePac 4 yr P&L P/U Depot
- ServicePac 5 yr P&L P/U Depot
- ServicePac 2 yr P&L P/U Depot
- Other ServicePac options at ibm.com/services/its/us/source/masspule.pdf

**Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/masspule.pdf**

See footnotes for important warranty information

US models announced April 6, 2004

US models withdrawn effective January 2005

(G40A) © IBM Corp. December 2004
### IBM ThinkPad G40 (Education) - withdrawn

This model is for sale direct from IBM or through an Authorized Education Reseller.

**Positioning**
- Powerful desktop replacement, three-spindle system

**Processor**
- Intel® Celeron® 2.2, 2.4, or 2.5GHz with 400MHz system bus or Intel Pentium 4 at 2.4, 2.6, or 2.8GHz with 400MHz system bus

**L2 cache**
- Various models have different cache sizes.

**Memory**
- 256MB PC2700 DDR-SDRAM CL2.5 SODIMM 31P9828
- 256MB PC2700 DDR-SDRAM CL2.5 SODIMM 31P9830

**Graphics**
- Integrated Intel Extreme™ Graphics
- Direct AGP in 852GM GCH
- Uses main memory (8 to 32MB with 128MB memory; 8 to 64MB with 256MB+) / 133MHz DMVT

**Keyboard**
- ThinkPad EasyPivot base allows smooth positioning for a comfortable viewing angle

**TrackPoint®**
- Pointing device, “Press-to-Select,” Internet Scroll Bar 13, magnifying glass / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap

**Touch pad**
- No touch pad (UltraNav multi-pointing system) / no TrackLight™

**Dimensions**
- 12.9" x 9.1" x 1.5-2.0"; 329mm x 228.5mm x 37.1-50.9mm
- Volume: 4 liters
- 8.5L

**Weight**
- Some: 11b Wi-Fi®, wireless, 3rd generation
- Others: 11b Wi-Fi®, wireless, 4th generation

**Battery - type**
- Lithium Ion 12-cell / intelligent / removable
- Battery - life 14

**Architecture**
- UltraS200 chip / 82852GM chip / 82852GM Graphics Memory Controller Hub
- GMCH / 82852GM Graphics Memory Controller Hub
- Low Pin Count (LPC) interface
- USB, Firewire Hub / 852GM
- PCI bus 32-bit, 33MHz
- PCI bus 33MHz
- Super I/O for diskette, parallel, floppy, PS/2
- System BIOS / 852GM GMCH / uses main memory

**Video out**
- No video output port

**IEEE 1394**
- None

**Wireless antenna**
- UltraConnect® antenna built into the display for cover wireless optical signal reception

**Mini PCI**
- One Mini PCI I, one Mini PCI II, or one Type I or Type II card
- Power-on password / hard disk password / supervisor password
- Security keyhole
- Microphone input jack (3.5 mm) / headphone jack (3.5 mm)

**Power-on password**
- Power-on password / hard disk password / supervisor password / security keyhole

**Security chip**
- None

**Limited warranty**
- 3 years / 1 year battery - EasyServ™-on-site pickup and delivery / service upgrades / available

**Type-model** | Processor | Speed GHz | Memory | Screen | Disk size | Optical | Mini PCI | Ethernet on board | Battery | Preload | Workforce (W) | Global (G) or Education software | Education software | Avail date |
<table>
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<td>XP Pro</td>
<td>Educ</td>
<td>Oct 2003</td>
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</table>

**Software**

**Windows XP Professional**
- Microsoft® Windows® XP Professional
- Disk-to-Disk Recovery

**Preloaded**
- HEU/KHU: Education software from Vital Source Technologies™
- VitalSource KEY™ and Personal Portable library™
- Access IBM
- Access Connections
- Adobe Reader
- IBM Rapid Restore™ PC
- IBM RecordNOW and Drive Letter Access powered by Sonic products (combo models)
- Intel Video DVD (combo models)
- Norton AntiVirus (OEM edition)
- PC-Doctor™
- ThinkPad Utilities
- IBM Update Connector™

**Downloadable**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

**License**
- CD not included

**Post-warranty annual maintenance**
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

**IBM Update Connector™**
IBM® ThinkPad® G40 (Express) - January 2004 - withdrawn

These small and medium business (SMB) models are part of the IBM US ThinkPad Express Program

Positioning
Processor
- Intel® Celeron 2.4 or 2.66GHz with 400MHz system bus or
- Intel Pentium 4 at 2.8 or 3.0GHz with 400MHz system bus

L2 cache
- Celeron: 128MB; Pentium 4: 512KB; All: on die (at processor speed) / ECC

Audio support
- CDC
- Mini PCI
- IEEE 1394
- Video out

Ports
- Architecture
- Battery - type
- Weight
- Touch pad

Display

Graphics
- Integrated Intel Extreme™ Graphics / Direct AGP / in 852GM GOMCH / uses main memory (6 to 32MB with 128MB memory / 139MB/DVMT / External user monitor via interconnect DB-15 connector / up to 1600x1200 at 85Hz / DDC2B

Graphics external
- EasyPivot

Keyboard
- ThinkPad EasyPivot base allows smooth positioning for a comfortable viewing angle

ComortSlant TrackPoint
- TrackPoint pointing device, "Press-to-Select," Internet Scroll Bar®, magnifying glass / soft dome TrackPoint cap / ships with classic dome and soft rim TrackPoint cap

Touchpad
- No touch pad (UltraNav™ multi-pointing system) / no ThinkLight™

Dimensions
- 12.9" x 11.1" x 1.5-2.0"; 329mm x 282.5mm x 37.1-50.9mm; Volume: 4 liters

Weight
- with optical drive and battery: DLU: 8.32 lb (3.78kg); JNU: 8.52 lb (3.86kg) / with modem Preload: 8.32 lb (3.81kg); JNU: 8.52 lb (3.86kg)

Battery - type
- Color: black; All: Acrylonitrile-Butadiene-Styrene/Polycarbonate (ABS/PC) plastic

Battery life
- Lithium Ion 12-cell / intelligent / removable

Architecture
- Intel 852GM chipset / 83852GM Graphics Memory Controller Hub (GMCH) / 82801BM ICH4-M I/O Controller Hub [ATA-100 IDE, PCI bus, ethernet MAC, Low Pin Count (LPC) interface, USB, Firmware Hub] / PCI bus 2.2 32-bit, 33MHz (T1® PCI1410A CardBus controller, Mini PCI) / PCI bus 33MHz (PC87393F Super I/O) for diskette, parallel, PS/2

PC Card Std slots
- One Type I, one Type II / CardBus 32-bit / PCMCIA 2.1 / integrated door

Ports
- Four USB (Version 2.0) / parallel / external monitor (DB-15) / RJ-11 (modem) / RJ-45 (ethernet) / PS/2 (for keyboard or mouse) / no serial or infrared port

Video out
- None

IEEE 1394
- None

Wireless antenna
- None

Mini PCI
- None

11a/b Wi-Fi
- None

CDC
- One Communications Daughter Card (CDC) socket (used by modem) / not accessible

Modem
- 56K V.90 (V.92-designed) modem in CDC / Agere® chipset

Bluetooth
- None (standard optional PC Card available)

Ethernet
- 10/100 ethernet on planar / Broadcom® B45901 (PHY/MAC) / PXE / Wake on LAN®

Audio support
- Soft / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / Wake on LAN®

Security chip
- None

Limited warranty
- 1 year - EasyServ®/NX/I/TM (on-site pickup and delivery / service upgrades available)

ServicePac
- 30L9188
- 30L9189
- 30L9194
- 30L9195
- 30L9196
- 30L9191
- 30L9192
- 69P1915
- 69P1919
- Other ServicePac options at ibm.com/services/its/us/service/wamomxeu.pdf

Post-warranty annual maintenance agreements at ibm.com/services/its/us/service/maspsspl.eu.pdf

See footnotes for important warranty information
US models announced on January 20 or April 6, 2004
US models withdrawn effective January 2005

Type-model Processor Speed GHz Memory Screen Disk GB® Optical Mini PCI Comm Bay Battery Ethernet on planer Small and medium business (SMB) models

<table>
<thead>
<tr>
<th>Type-model</th>
<th>Processor</th>
<th>Speed GHz</th>
<th>Memory</th>
<th>Screen</th>
<th>Disk GB®</th>
<th>Optical</th>
<th>Mini PCI</th>
<th>Comm Bay</th>
<th>Battery</th>
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<td>Combo</td>
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<td>12-cell</td>
<td>Li-Ion XP Pro</td>
<td>Apr 2004</td>
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</table>

Preloaded
- Access IBM
- Access Connections
- Adobe Reader
- IBM Rapid Restore™ PC
- IBM RecordNOW and Drive Letter
- Power-on password / hard disk password / supervisor password / security keyhole

Downloadable
- IBM Director Agent
- Software Delivery Assistant
- System Migration Assistant

License (CD not included)
- Lotus® SmartSuite™ Millennium
- Lotus Notes® Stand-alone Client

Universal 120 watt AC adapter

Asset ID,™ (system-specific info in chip accessed over network)
- PC 2001 and PXE 2.0-compliant
- ACPI 1.0b and 2.0-compliant
- CIM UNIX 2.0-compliant
- IBM ImageUltra™ Services available
- IBM Rapid Restore PC available to protect software image and data

International Warranty Service
- 24 hour x 7 day 365-day toll-free warranty support during the warranty via 800-IBM-SEVR (426-7378)

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IBM

Limited warranty

Security chip
Audio support
Ethernet

US models withdrawn effective April 2004 or January 2005

CDC
Wireless antenna
IEEE 1394
Ports
Architecture
Battery - type
Case material
Weight

TrackPoint
ComfortSlant
Keyboard
EasyPivot
 Graphics

Disk
L2 cache

US Govt (TAA)

Soft audio / ICH AC97 controller / DirectSound

• IBM Optical 3-Button Travel Wheel Mouse 31P7410
• IBM USB 2.0 Portable 40GB Hard Drive 30L9188
• IBM Optical 3-Button ScrollPoint™ Mouse 31P7405
• IBM 400 Projector 30L9194
• IBM Optical 3-Button ScrollPoint Pro Mouse 31P8700
• IBM USB Serial Parallel Adapter 22P5298
• IBM USB Numeric Keypad 33L3225
• IBM USB Optical 3-Button Travel Wheel Mouse 33L3225
• IBM USB Numeric Keypad 33L3225
• IBM Optical 3-Button Travel Wheel Mouse 31P7410
• IBM Optical 3-Button ScrollPoint™ Mouse 31P7405
• IBM 400 Projector 30L9194
• IBM Optical 3-Button ScrollPoint Pro Mouse 31P8700
• IBM USB Serial Parallel Adapter 22P5298
• IBM USB Numeric Keypad 33L3225

• IBM Update Connector™, IBM Update Connector
• IBM Director Agent
• Software Delivery Assistant

Windows XP Professional

- Microsoft® Windows® XP Professional
  - Disk-to-Disk Recovery (in hidden protected area)

Preloaded
- • Access IBM
- • Access Connections
- • Adobe Reader
- • IBM Rapid Restore™ PC
- • IBM RecordNOW and IBM Drive Letter Access (combo models)
- • International Warranty Service
- • Norton AntiVirus (OEM edition)
- • PC-Doctor™
- • ThinkPad Utilities

License (CD not included)
- • Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client

ThinkPad notebooks implement IBM ThinkVantage™ technologies and design; visit ibm.com/thinkvantage

Universal 120 watt AC adapter

Asset ID

Microsoft® Windows®, Microsoft®, Windows®, Intel®:

IBM ImageUltra™ Services available
IBM Rapid Restore PC available to protect software image and data
International Warranty Service

24 hour x 7 day toll-free warranty support during the warranty2 via 800-IBM-SERV (426-7378)

ServicePac: 2yr IOR 9x5 NBD 30L9194
ServicePac 2yr IOR 9x5 NBD 30L9194
ServicePac 3yr IOR 9x5 NBD 30L9195
ServicePac 4yr IOR 9x5 NBD 30L9194
ServicePac 5yr IOR 9x5 NBD 30L9196
ServicePac 2yr P&L P/U Depot 30L9191
ServicePac 3yr P&L P/U Depot 30L9192
ServicePac 4yr P&L P/U Depot 30L9195
ServicePac 5yr P&L P/U Depot 30L9197

IBM PC Institute

Created by IBM PC Institute

Personal Systems Reference (PSREF)

(G40T) © IBM Corp. December 2004

US models announced January 20, 2004
US models withdrawn effective April 2004 or January 2005

See footnotes for important warranty information
## IBM ThinkPad TransNote™ - withdrawn

IBM ThinkPad TransNote™ portfolio notebook is a revolutionary portfolio notebook that integrates paper and ink with a mobile computer.

### Processor
- **Intel® Mobile Pentium® III 600MHz** with Intel SpeedStep™ technology¹ and 100MHz frontside bus
- **L2 cache** 256KB / on-board (at processor speed) / ECC
- **Memory** 64MB standard / 320MB maximum¹ / SDRAM / non-parity / 100MHz / PC 100 / 3.3V / one 144-pin SO-DIMM socket / 64MB on systemboard / 1 socket available

### Display
- **10.4” (264mm) SVGA (800x600) TFT color** / Active Matrix / FlipTouch™ screen / touch screen display / display can be used flat or raised exposing the keyboard / image and screen both invert to share work with someone across from user / 3 buttons on right: ThinkPad Button, Flip Touch Button, Mute Button

### Graphics controller
- **ATI™ Mobility M-4MB SGRAM / PCI / DDC2B**
- **Graphics - external** External SVGA 1024x768x16.7 million colors at 100Hz and up to 1600x1200

### Digital notepad and pen
- **ThinkScribe™ Digital Notepad** automatically saves handwritten notes

### Keyboard
- **Ergonomic keyboard, 95% size** / TrackPoint™, “Press-to-Select,” Internet Scroll Bar

### FlexFold™ design
- **ThinkScribe Digital Notepad** automatically saves handwritten notes
- **Digital pen** used for handwriting and for touch screen functions

### Dimensions³
- **12.6” x 11.1” x 1.3”** / 320mm x 282mm x 33mm

### Weight⁴
- **5.5 lbs; 2.5 kg** (includes digital pen and paper pad)

### Battery
- **Li-Ion 4-cell / intelligent / also has warm swap bridge**

### Processor
- **564 Modem by 3Com**

### Audio support
- **PC97338 Super I/O, ISA (infrared)**

### Video out
- **ThinkPad Assistant**

### Security
- **Endurimer™ technology¹ and DESIGN Mobility-M™ technology¹**

### Limited warranty²⁶
- **1 year - EasyServ™ on-site pickup and delivery courier service**

### OS support¹¹

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### WINDOWS 98 PRELOAD¹⁴
- **Microsoft Windows 98 Second Edition**
- **IBM Update Connector®¹⁵**
- **Access ThinkPad II™**
- **PC-Doctor™**
- **Confisafe**
- **Lotus SmartSuite Millennium CD**
- **Software Selections CD-ROM**
- **Recovery CD-ROM**

### WINDOWS 2000 PRELOAD¹⁴
- **Microsoft Windows 2000 Professional**
- **IBM Update Connector®¹⁵**
- **Access ThinkPad II™**
- **PC-Doctor™**
- **Confisafe**
- **Lotus SmartSuite Millennium CD**
- **Software Selections CD-ROM**
- **Recovery CD-ROM**

### ThinkScribe Digital Notepad
- **Uses regular pad of paper (up to 50 pages) on side of system (left or right handed models available)**
- **Automatically saves handwritten notes and transfers them to PC via Ink Manager**
- **Stores up to 50 pages of notes in 2MB flash memory**
- **Stores even with PC off and transferred when PC powered on**

### Digital Pen
- **Pen stored on side of system**
- **Used three ways**

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See footnotes for important warranty information

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**Warranty:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709. IBM makes no representation or warranty regarding third party products or services.

**Footnotes:**

1. With Intel SpeedStep, processor speed may be reduced to conserve battery power.

2. **Travel weight** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options.

3. **Thinness** may vary at certain points on the system.

4. **Wireless capability:** Requires compatible wireless-enabled options sold separately.

5. **TAA:** ThinkPad notebook is compliant with the U.S. Federal Government’s country-of-origin requirements prescribed in 48 C.F.R. Subpart 25.4; Trade Act Agreement (TAA) model.

6. **Public network download speeds** are limited to 53Kbps. Upload speeds are limited to 31.2Kbps. Compatible phone line and server equipment required. Actual speeds depend on many factors and are often less than the maximum possible.

7. **Maximum memory and hard disk drive capacity** may require the replacement of standard component with largest supported component available.

8. **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity may be less; up to 4GB is used in service partition.

9. **CD/DVD drive speeds** list maximum rates; rates are variable and are often less than the maximum.

10. **Battery:** These model numbers achieved the Ziff Davis Media Inc.’s Business Winstone 2002 BatteryMark™ Version 1.0, Battery Rundown Time of at least the times shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. (“VeriTest”) nor Ziff Davis Media Inc.; neither Ziff Davis Media Inc. nor VeriTest makes any representations or warranties as to these test results. Winstore is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., in the US and other countries. A description of the environment under which the test was performed is available at ibm.com/personal-pc/support and enter machine type and model number for more information.

11. **Memory:** For ThinkPad models without a separate video card, memory supports both system and video. Accessible system memory may be up to 64MB less than the amount stated, depending on video mode.

12. **Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.

13. **Internet access not included.**

14. **Included software** may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

15. **Update Connector** is available to registered ThinkPad customers during the limited warranty period at no charge. Line charges may apply.

16. **IBM Embedded Security Subsystem** works with optional VPN software.

17. **International Warranty Service** is available in any country in which this product is sold and serviced. Service delivery methods and parts availability vary by country, may be different from that in the country of purchase, and are subject to change without notice. Fees and restrictions may apply in some countries.

18. **Telephone support** may be subject to additional charges, even during the limited warranty period. If a machine is listed as having ‘On-site service for select repairs,’ this means that onsite service is available only for the replacement of select parts. For all other warranty repairs, IBM will provide the customer a replacement part for customer installation. The parts for which onsite service is available varies by machine, but may include the processor, power supply, heat sink, system board, or base cover. For IBM machines with EasyServ or Courier service, IBM will attempt to diagnose and resolve the problem remotely before sending a courier.

19. **Depot repair:** The customer may be asked certain diagnostic questions before a courier is sent. Your ThinkPad purchase includes this depot repair service, available in the U.S. during the warranty period.


21. **For combination drives,** maximum possible speeds only are given in the following order: CD write, CD rewrite, CD read, DVD read.

22. **These services** are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x24-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center.
27 Based on IEEE 802.11a and 802.11b. A customer can not upgrade to a different wireless Mini PCI adapter due to FCC regulations. Security screws prevent removal of this adapter. This wireless LAN product has been designed to permit legal operation world-wide in regions which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo.

28 Certain Microsoft software products included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft’s privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software products or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply).

29 Public network download speeds are limited to 53Kbps. Upload speeds are limited to 48Kbps for V.92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V.92 functions and speeds require compatible phone line and server equipment. Check with your telephone and ISP service providers for availability. Requires download of V.92 microcode when available and country approval.

30 Measures only maximum data transfer rate, not application performance. Many factors affect application performance.

31 Internet access account (not included) and profiling at ibm.com/support required.

32 Wireless: based on IEEE 802.11a, 802.11b, and 802.11g respectively. An adapter with 11a/b, 11b/g, or 11a/b/g can communicate on either/any of these listed formats respectively, the actual connection will be based on the access point to which it connects.
IBM Embedded Security Subsystem requires download of client security software from the Web and requires Internet access, not included.

Asset ID allows system-specific information to be stored in a chip inside the system; it does not have any radio frequency support.

Operating system: Level of support varies by operating system. Operating systems not preloaded on the system may not provide full feature functionality. Refer to ibm.com/pc/support and enter your machine type and model number for more information.

Wireless upgradable allows the system to be wireless-enabled with an optional wireless Mini PCI card. These systems are designed to operate only with wireless LAN Mini PCI options sold by IBM.

Mobile processors: Power management features reduce processor speed when in battery mode.

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May 2005
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