IBM ThinkPad® 390X - withdrawn

IBM® ThinkPad®

Processor	**Intel® Mobile Celeron™ 400MHz**[1] **or Mobile Pentium® II 400MHz** / 66MHz system bus
Processor features	No upgrade / processor, L2 cache, and MTXC (North Bridge) on Intel Mobile Module (MMC2)
L2 cache	*Celeron:* **128KB**; *Pentium II:* **256KB**; *All:* **onboard (full speed)** / sync pipelined burst / ECC / write-back
Diskette drive	Internal 3.5" 1.44MB / removable from UltraBay™ FX / on right side / integrated with CD-ROM / no external disktte port
CD-ROM	**CD-ROM / 24X-10X**[5] **speed** / ATAPI / bootable / removable from UltraBay FX / on right side / integrated with diskette drive
DVD-ROM	*Option:* Removable UltraBay FX option / 4X-1X[5] DVD integrated with a diskette drive

Type - model	**2626-F0U**	**2626-H0U**	**2626-HNU**	**2626-J0U**	**2626-JNU**
Processor / MHz	**Celeron 400**	**Pentium II 400**	**Pentium II 400**	**Pentium II 400**	**Pentium II 400**
Disk - size / read ms	**4.8GB**[4] / 13ms	**6.4GB** / 12ms	**6.4GB** / 12ms	**6.4GB** / 12ms	**6.4GB** / 12ms
Preload (see side)	**Windows 98**	**Windows 98**	**NT 4.0**	**Windows 98**	**NT 4.0**
Avail / withdrawn date	Sept 99 / Jul 00	Sept 99 / Jul 00	Sept 99 / Jul 00	Sept 99 / Jul 00	Sept 99 / Jul 00
Display (diagonal)	**12.1" TFT SVGA**	**14.1" TFT XGA**	**14.1" TFT XGA**	**15" TFT XGA**	**15" TFT XGA**

Display - size and type	**12.1" TFT color** 308mm / **Active Matrix**	**14.1" TFT color** 358mm / **Active Matrix**	**15.0" TFT color** 381mm / **Active Matrix**
Display - technology	**SVGA / 800x600** / 20 to 30ms / 150 nits	**XGA / 1024x768** / 20 to 30ms / 120 nits	**XGA / 1024x768** / 10 to 30ms / 120 nits
	16.7 million colors / 150 to 1 contrast	**16.7 million colors** /150 to 1 contrast	**16.7 million colors** / 150 to 1 contrast

Graphics controller	**NeoMagic™ MagicMedia256AV™** (NM2200) / 128-bit engine, 256-bit memory interface / **1X AGP** / DDC2B / **2.5MB** / SGRAM (embedded) / **motion compensation** / color space conversion / interpolation in X and Y axis Simultaneous LCD and CRT[26] / 150 degree tilt / multiple-monitor support[26]
Memory - std / max	**64MB** / 512MB[33]
Memory - features	**SDRAM** / non-parity / 100MHz / PC100-compliant / 3.3 volt / 64-bit / 2 sockets for JEDEC 144-pin SO DIMMs / one socket used by std memory / Sockets accessed from bottom via removing cover held by phillips-head screw
Disk controller	EIDE / PCI 2.1 / one internal disk / disk can be removed to upgrade by customer / supports two internal disks / 13ms read / 14ms write / S.M.A.R.T.[29]
Keyboard	Full-size 85-key (7 Fn key functions) / palm rest / keyboard slope with tilt feet
Pointing	TrackPoint® / Press-to-Select / Release-to-Select / dragging / click pace / center button for scrolling (Internet Scroll Bar) or magnifying glass / spare caps
Dimensions	*12.1"/14.1":* 12.4 x 10.1 x 1.8" (225 cu in) *15":* 12.9 x 10.6 x 1.8" (246 cu)
Weight[2] (with batt/disk)	*12.1" and 14.1" models:* 7.5 lbs (3.4 kg) *15" models:* 7.9 lbs (3.6 kg)
Case material	PC/ABS plastic
Battery - type	*F0U:* NiMH / intelligent / left side *Others:* Li-Ion / intelligent / left side
Battery - life[10] (1 batt)	*F0U:* 2.5 hrs *Gxx/Hxx:* 3.67 hrs *Jxx:* 3.5 hrs
Charge time[10]	*F0U/Hxx:* 5 hrs on / 2.5 hrs off *Jxx:* 6 hrs on / 3 hrs off
Architecture	**Intel 440BX AGPset / Intel PIIX4E** (EIDE, PCI to ISA bridge, USB) Texas Instruments® **TI1251B** PCMCIA controller / NS PC97338 (FDC, IR, I/O) PCI 2.1 / 32-bit / 33MHz (EIDE, graphics, PCMCIA, USB, audio, modem) ISA (diskette, serial, parallel, infrared)
Docking station	None
Port replicator	ThinkPad Port Replicator with Advanced EtherJet / Basic Port Replicator
PC Card Std slots	2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed video
USB / serial / parallel	**One USB** / one 9 pin; 16550A / one (IEEE P1284-A, EPP, ECP, bidirectional)
Other features	APM-aware BIOS / Ultraslim AC adapter, barrel, 3-prong, 56 watts
Video (TV) out	S-Video out connector on side (does not require cable) / Chrontel Ch7004C-T
MPEG decoder	None (W98 support for MPEG-2 because 300MHz with motion compensation)
Data/fax modem	**56K**[22] V.90 / integrated in system / PCI / Lucent 1646 / not voice-capable / conforms to earlier draft specs similar to Mini PCI Type IIIb
Audio	16-bit SoundBlaster Pro™ support / ESS 1946 / PCI / full duplex
Speakers	Two Altec Lansing® stereo speakers (1 watt) on display (on front for 15" mod)
Audio features	Dial volume control (right side) / internal microphone
Audio in/out jacks	Microphone jack (stereo) / headphone jack (stereo) / line-in jack
Infrared ports	Infrared port on left side / IrDA 1.1 compatible / up to 4Mbps
Security	Power-on password / setup password / disk password / security keyhole / security screw for UltraBay FX
Limited warranty[11]	**1 year** - carry-in or ThinkPad EasyServ™[31] (door-to-door depot repair service)
Service options[15]	On-site[32], M-F, 8-5, next bus day (72 cities) / serv up to 5 yrs from purchase date

Color depth	LCD	External Monitor		
Resolution	TFT	60Hz	75Hz	85Hz
640x480	16M	16M	16M	16M
800x600	16M	16M	16M	16M
1024x768	16M	16M	16M	16M
1280x1024	--	256	--	--

All models:
- C: drive is FAT16 of 2GB
- D: drive is FAT32 of remaining space

The right bay (UltraBay FX) has a device lock on the bottom of the system and a bay LED which should be off to safely remove a device; it supports:
- standard diskette/CD-ROM (warm swap with Windows 98)
- optional DVD/CD-ROM (warm swap; W98)
- optional second battery (hot swap; W98/NT); same battery as main use
- optional second disk (cold swap)
- optional ThinkPad Proven™ solutions[12]

OPTIONS

- 32MB SO DIMM 100MHz NP SDRAM   20L0253
- 64MB SO DIMM 100MHz NP SDRAM   20L0254
- 128MB SO DIMM 100Mz NP SDRAM   20L0255
- 256MB SO DIMM 100Mz NP SDRAM   33L3069
- Basic (ThinkPad 560) Port Replicator   46H4209
- Port Replicator w/ Advanced EtherJet   05K4872
- ThinkPad 390/i Series Li-Ion Battery   02K6513
- Ultraslim 56 watt AC Adapter (3-prong)   02K6545
- 6.4GB disk with UltraBay FX adapter   05K8923
- 10GB disk with UltraBay FX adapter   05K8983
- 12GB disk with UltraBay FX adapter   05K9268
- 4X-1X DVD/Diskette (for UltraBay FX)   05K9129
- CD/Diskette (for UltraBay FX)   05K8986
- 10/100 EtherJet Ready Port CardBus Adapter with 56K modem   34L1301
- 10/100 Ethernet CardBus PC Card   08L3147
- IBM Portable Drive Bay   37L1511
- ThinkPad Proven™ solutions[12] (visit www.ibm.com/pc/us/thinkpad/proven)

Pressing F1 during startup brings up IBM BIOS Setup Utility

WINDOWS 98 PRELOAD[16]

- Microsoft® Windows® 98
- Access ThinkPad
- Online User's Guide
- ThinkPad Configuration Program
- ThinkPad Utilities
- IBM Update Connector
- RingCentral Fax
- Ergonomics
- Intelliquest Registration
- Puma IntelliSync 97 (infrared)
- IBM Global Network Dialer
- Netscape Communicator
- Lotus® SmartSuite® Millennium[20]
- PC-Doctor
- ConfigSafe®
- Norton AntiVirus™ (OEM Version)
- Universal Management Services
- Software Selections CD
- Lotus SmartSuite Millennium CD-ROM
- Recovery CD-ROM (Windows 98)
- Recovery CD-ROM (Windows 95)[7]

WINDOWS NT PRELOAD[16]

- Microsoft Windows NT® 4.0
- Service Pack 4
- ThinkPad Utilities
- Online User's Guide
- ThinkPad Configuration Program
- Ergonomics
- Intelliquest Registration
- Puma IntelliSync 97 (infrared)
- IBM Global Network Dialer
- Netscape Communicator
- ConfigSafe
- Norton AntiVirus (OEM Version)
- IBM Update Connector
- SystemSoft CardWizard
- Universal Management Services
- Software Selections CD-ROM
- Lotus SmartSuite Millennium CD-ROM
- Recovery CD-ROM (Windows NT)

FEATURES

Wired for Management 1.1a-compliant
DMI 2.0-compliant
PC 98-compliant
ACPI ready (APM enabled)
Wake on LAN® support[28]
Setup Guide, User's Reference, Windows OS manual, and Quick Reference Card
System Status Indicators
Plug and Play 1.0a
Standby, suspend, and hibernation modes
ENERGY STAR-compliant
International Warranty Service[14]
IBM SystemXtra®, [35]
24 hour / 7 day[30] telephone, bulletin board, fax, electronic, and Internet (www.ibm.com/pc/us) support

IBM ThinkPad® 390X (Pentium III) - withdrawn

IBM® ThinkPad®

Processor	**Intel® Mobile Mobile Pentium® III 450 or 500MHz[1] / 100MHz system bus**
Processor features	No upgrade / processor, L2 cache, and memory controller (North Bridge) on Intel Mobile Module (MMC2)
L2 cache	**256KB** / at processor speed / sync pipelined burst / ECC / write-back
Diskette drive	Internal 3.5" 1.44MB / removable from UltraBay™ FX / on right side / integrated with CD-ROM / no external disktte port
CD-ROM	**CD-ROM / 24X-10X[5] speed** / ATAPI / bootable / removable from UltraBay FX / on right side / integrated with diskette drive
DVD-ROM	*Option:* Removable UltraBay FX option / 4X-1X[5] speed / DVD integrated with a diskette drive

Type - model	✂ **2626-L0U**	✂ **2626-LNU**	✂ **2626-L2U**	✂ **2626-M0U**	✂ **2626-MNU**
Processor / MHz	**Pentium III 450MHz**	**Pentium III 450MHz**	**Pentium III 450MHz**	**Pentium III 500MHz**	**Pentium III 500MHz**
Disk - size / read ms	**12.0GB[4]** / 12ms	**12.0GB** / 12ms	**12.0GB** / 12ms	**12.0GB** / 12ms	**12.0GB** / 12ms
Preload (see side)	**Windows 98 SE**	**NT 4.0**	**Windows 2000**	**Windows 98 SE**	**NT 4.0**
Avail / withdrawn date	Dec 1999 / Oct 2000	Dec 1999 / Oct 2000	Feb 2000 / Oct 2000	Dec 1999 / Jan 2001	Dec 1999 / Jan 2001
Display (diagonal)	**14.1" TFT XGA**	**14.1" TFT XGA**	**14.1" TFT XGA**	**15" TFT XGA**	**15" TFT XGA**

Display - size and type	**14.1" TFT color** 358mm **/ Active Matrix**	**15.0" TFT color** 381mm **/ Active Matrix**
Display - technology	**XGA / 1024x768** / 20 to 30ms / 120 nits	**XGA / 1024x768** / 10 to 30ms / 120 nits
	16.7 million colors /150 to 1 contrast	**16.7 million colors** / 150 to 1 contrast

Graphics controller	**NeoMagic™ MagicMedia256AV™** (NM2200) / 128-bit engine, 256-bit memory interface / **1X AGP** / DDC2B / **2.5MB** / SGRAM (embedded) / **motion compensation** / color space conversion / interpolation in X and Y axis / simultaneous LCD and CRT[26] / 150 degree tilt / multiple-monitor support[26]

Memory - std / max	**64MB** / 512MB[33]
Memory - features	**SDRAM** / non-parity / 100MHz / PC100-compliant / 3.3 volt / 64-bit / 2 sockets for JEDEC 144-pin SO DIMMs / one socket used by std memory / sockets accessed from bottom via removing cover held by phillips-head screw

- Microsoft® Windows® 98 Second Edition
- Access ThinkPad
- Online User's Guide
- ThinkPad Configuration Program
- ThinkPad Utilities
- IBM Update Connector
- RingCentral Fax
- ThinkPad on the Net
- Intelliquest Registration
- IBM Global Network Dialer
- Netscape Communicator
- Lotus® SmartSuite® Millennium[20]
- PC-Doctor
- ConfigSafe®
- Norton AntiVirus™ (OEM Version)
- Universal Management Services (web)
- ◇ Software Selections CD
- ◇ Lotus SmartSuite Millennium CD-ROM
- ◇ Recovery CD-ROM (Windows 98)
- ◇ Recovery CD-ROM (Windows 95)[7]

Disk controller	EIDE / PCI 2.1 / one internal disk / disk can be removed to upgrade by customer / supports two internal disks / 13ms read / 14ms write / S.M.A.R.T.[29]
Keyboard	Full-size 85-key (7 Fn key functions) / palm rest / keyboard slope with tilt feet
Pointing	TrackPoint® / Press-to-Select / Release-to-Select / dragging / click pace / center button for scrolling (Internet Scroll Bar) or magnifying glass / spare caps

Dimensions[36]	*14.1"mod:* 12.4 x 10.2 x 1.8" (228 cu in) *15" mod:* 12.9 x 10.6 x 1.8" (246 cu)
Weight[2] (with batt/disk)	*14.1" models:* 7.7 lbs (3.5 kg) *15" models:* 7.9 lbs (3.6 kg)
Case material	PC/ABS plastic

Battery - type	Li-Ion / intelligent / left side
Battery - life[10] (1 batt)	*14.1" models:* 3.7 hrs *15" models:* 3.3 hrs
Charge time[10]	*14.1" models:* 5 hrs on / 2.5 hrs off *15" models:* 6 hrs on / 3 hrs off

Architecture	**Intel 440BX AGPset / Intel PIIX4E** (EIDE, PCI to ISA bridge, USB) / Texas Instruments® **TI1251B** PCMCIA controller / NS PC97338 (FDC, IR, I/O) PCI 2.1 / 32-bit / 33MHz (EIDE, graphics, PCMCIA, USB, audio, modem) ISA (diskette, serial, parallel, infrared)
Docking station	None
Port replicator	ThinkPad Port Replicator with Advanced EtherJet™ / Basic Port Replicator
PC Card Std slots	2 Type I, 2 Type II, or 1 Type III / CardBus 32-bit / PCMCIA 2.1 / Zoomed video
USB / serial / parallel	**One USB** / one 9 pin; 16550A / one (IEEE P1284-A, EPP, ECP, bidirectional)
Other features	APM-aware BIOS / Ultraslim AC adapter, barrel, 3-prong, 56 watts

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- ThinkPad Utilities
- Online User's Guide
- ThinkPad Configuration Program
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- PC-Doctor
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- Netscape Communicator
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- Universal Management Services (web)
- ◇ Lotus SmartSuite Millennium CD
- ◇ Software Selections CD-ROM
- ◇ Recovery CD-ROM (Windows 2000)
- ◇ Recovery CD-ROM (Windows NT)[40]

Video (TV) out	S-Video out connector on side (does not require cable) / Chrontel Ch7004C-T
MPEG decoder	None (W98 support for MPEG-2 because 300MHz with motion compensation)
Data/fax modem	**56K**[37] V.90 / integrated in system / PCI / Lucent 1646 / not voice-capable / conforms to earlier draft specs similar to Mini PCI Type IIIb
Audio	16-bit SoundBlaster Pro™ support / ESS 1946 / PCI / full duplex
Speakers	Two Altec Lansing® stereo speakers (1 watt) on display (on front for 15" mod)
Audio features	Dial volume control (right side) / internal microphone
Audio in/out jacks	Microphone jack (stereo) / headphone jack (stereo) / line-in jack
Infrared ports	Infrared port on left side / IrDA 1.1 compatible / up to 4Mbps

Security	Power-on password / setup password / disk password / security keyhole / security screw for UltraBay FX

Limited warranty[11]	**1 year** - carry-in or ThinkPad EasyServ™[31] (door-to-door depot repair service)
Service options[15]	On-site[32], M-F, 8-5, next bus day (72 cities) / serv up to 5 yrs from purchase date

Color depth	LCD	External Monitor		
Resolution	TFT	60Hz	75Hz	85Hz
640x480	16M	16M	16M	16M
800x600	16M	16M	16M	16M
1024x768	16M	16M	16M	16M
1280x1024	--	256	--	--

The right bay (UltraBay FX) has a device lock on the bottom of the system and a bay LED which should be off to safely remove a device; it supports:
- standard diskette/CD-ROM (warm swap with Windows 98)
- optional DVD/CD-ROM (warm swap; W98)
- optional second battery (hot swap; W98/NT); same battery as main one
- optional second disk (cold swap)
- optional ThinkPad Proven™ solutions[12]

Windows 2000 model:
- C: drive is FAT32 of entire disk

OPTIONS

- 32MB SO DIMM 100MHz NP SDRAM   20L0253
- 64MB SO DIMM 100MHz NP SDRAM   20L0254
- 128MB SO DIMM 100Mz NP SDRAM   20L0255
- 256MB SO DIMM 100Mz NP SDRAM   33L3069
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- CD/Diskette (for UltraBay FX)   05K8986
- 10/100 EtherJet Ready Port CardBus Adapter with 56K modem   34L1301
- 10/100 Ethernet CardBus PC Card   08L3147
- Smart Card Security Kit   33L5075
- IBM Portable Drive Bay   37L1511
- IBM MultiPort USB Hub   00N8215

FEATURES

Wired for Management 1.1a-compliant
DMI 2.0-compliant
PC 98-compliant
ACPI ready (APM enabled)
Wake on LAN® support[28]
Setup Guide, User's Reference, Windows OS manual, and Quick Reference Card
System Status Indicators
Plug and Play 1.0a
Standby, suspend, and hibernation modes
ENERGY STAR-compliant
International Warranty Service[14]
IBM SystemXtra®, [35]
24 hour / 7 day[30] telephone, bulletin board, fax, electronic, and Internet (www.ibm.com/pc/us) support