

Type-model	Processor	Speed GHz	Memory	Screen	Graphics controller	Disk GB ⁸	Optical	Mini PCI Comm Bay wireless	CDC modem/ Bluetooth™	Ethernet on planar	IEEE1394 port	Security chip	Workhorse (W) Global (G) Avail Preload Entry (E) date
1836-A4U	Pentium® M	1.5	256MB	14.1" XGA	7500	40GB	Combo	*Intel 11b/g Wi-Fi ³²	Modem	10/100		Yes	XP Pro No Apr 2004
1836-A5U	Pentium M	1.5	256MB	14.1" XGA	9000	60GB	DVD-RW	11a/b/g Wi-Fi ³²	Modem	Gigabit	1394	Yes	XP Pro No Apr 2004
1836-BAU	Pentium M	1.5	256MB	15.0" XGA	7500	40GB	Combo	*Intel 11b/g Wi-Fi	Modem	10/100		Yes	XP Pro No Apr 2004
1836-BBU	Pentium M	1.6	256MB	15.0" SXGA+	9000	60GB	Combo	*Intel 11b/g Wi-Fi	Modem	Gigabit	1394	Yes	XP Pro No Apr 2004
1836-BCU	Pentium M	1.6	256MB	15.0" SXGA+	9000	80GB	DVD-RW	11a/b/g Wi-Fi	Mod/Blue	Gigabit	1394	Yes	XP Pro No Apr 2004
1836-BDU	Pentium M	1.5	256MB	15.0" SXGA+	7500	40GB	Combo	*Intel 11b/g Wi-Fi	Modem	10/100		Yes	XP Pro No Apr 2004
These small and medium business (SMB) models are part of the IBM US Think Express Program													
Positioning Processor	Mainstream performance and features; two-spindle system Intel® Pentium® M Processor 1.5 or 1.6GHz with enhanced Intel SpeedStep™ technology ¹ and 400MHz system bus											SOFTWARE ¹⁴	
L2 cache	1MB / on die (at processor speed) / ECC											Windows XP Professional	
Memory	256MB std / 2GB max ⁷ / PC2700 333MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available											- Microsoft® Windows® XP Professional ²⁰ ♦ Disk-to-Disk Recovery (in hidden protected area)	
Diskette drive	None standard / use optional USB-based diskette drive											Preloaded	
Combo DVD-RW	Some: DVD-ROM/CD-RW / 24X/24X/24X/8X ²¹ speed / removable from Ultrabay Enhance Some: CD-RW/DVD-RW Multi-Burner / removable from Ultrabay Enhanced											• Access IBM • Access Connections • IBM Rescue and Recovery™ • IBM RecordNOW and Drive Letter Access powered by Sonic products (combo, DVD-RW) • InterVideo WinDVD (combo, DVD-RW) • InterVideo WinDVD Creator (DVD-RW) • Norton AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • Adobe Reader • IBM Update Connector™. ¹⁵	
Ultrabay Enhanced Disk	One modular bay for interchangeable devices / Ultrabay Slim-compatible / 12.7 mm high 40GB ⁸ (4200 rpm), 60GB (4200 rpm), or 80GB (4200 rpm) / 9.5mm high / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional 'Second HDD Adapter for Ultrabay Slim' / IBM Hard Disk Drive Shock Absorber / IBM Active Protection System											Downloadable	
Display	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits Some: 15.0" (381.0mm) XGA (1024x768) TFT color / Active Matrix / 200 nits Some: 15.0" (381.0mm) SXGA+ (1400x1050) TFT color / Active Matrix / 200 nits / FlexView display with wide viewing angle and high density using IPS technology											• IBM Director Agent • Software Delivery Assistant • System Migration Assistant • Client Security Software (for security chip)	
Graphics	Some: ATI® Mobility™ RADEON™ 7500 / AGP 4X / 32MB DDR1 (DDR-SDRAM) Some: ATIMobility RADEON 9000 / AGP 4X / 32MB DDR1 (DDR-SDRAM)											License (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client	
Graphics external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B											ThinkPad notebooks implement IBM ThinkVantage™ technologies and design; visit ibm.com/thinkvantage	
Keyboard	87-key / Acss IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)											Universal 72 watt AC adapter	
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass											Asset ID™. ³⁴ (system-specific info in chip accessed over network)	
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones											PC 2001 and PXE 2.0-compliant	
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions											ACPI 1.0b and 2.0-compliant	
Dimensions ³	14.1" models (WxDxH): 12.4" x 10.2" x 1.35-1.46"; 314mm x 260mm x 34-37mm 15.0" models (WxDxH): 13.1" x 10.6" x 1.47-1.58"; 332mm x 269mm x 37-40mm											CIM and DMI 2.0-compliant	
Weight ²	with optical drive and battery: 14.1" models: 6.0 lb (2.7kg); 15.0" models: 6.6 lb (3.0kg)											ENERGY STAR®-compliant	
Case material	Color: black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic											IBM ImageUltra™ Services available	
Battery - type	Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay Enhanced											International Warranty Service ¹⁷	
Battery - life ¹⁰	Model BBU/BCU/BDU with SXGA+: 4.0 hr; Others: 4.7 hr; Optional 9-cell: up to 6.9 hr											24 hour x 7 day ¹⁸ toll-free warranty support during the warranty ¹²	
Architecture	Intel 855PM chipset / 82855PM Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count [LPC] interface, USB, [Bluetooth]) / PCI bus 2.2 32-bit, 33MHz (TI® PCI4520A CardBus and 1394 controller, Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for parallel, infrared, [docking-based ports])											ServicePac®, ²² 1yr IOR 9x5 NBD 30L9188	
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door											ServicePac 2 yr IOR 9x5 NBD 30L9189	
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port											ServicePac 3 yr IOR 9x5 NBD 30L9195	
Video out	S-video out port (TV out) / one 4-pin industry standard connector											ServicePac 4 yr IOR 9x5 NBD 30L9194	
IEEE 1394	Some: IEEE 1394 (FireWire) port / 4-pin connector / 1394a-2000 standard											ServicePac 5 yr IOR 9x5 NBD 30L9196	
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception											ServicePac 2 yr P&L P/U Depot 30L9191	
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable											ServicePac 3 yr P&L P/U Depot 30L9192	
Intel 11b/g ³²	Some: 11b/g Wi-Fi ³² wireless ⁴ , Mini PCI, Intel PRO/Wireless 2200BG, Intel 82532 chipset											ServicePac 4 yr P&L P/U Depot 69P9195	
11a/b/g Wi-Fi ³²	Some: 11a/b/g Wi-Fi ³² wireless ⁴ , Mini PCI, Atheros™ AR5001X+ chipset											ServicePac 5 yr P&L P/U Depot 69P9197	
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible											Post-warranty annual maintenance agreements at	
Modem	56K ⁶ V.90 (V.92-designed ²⁹) modem in CDC / Conexant® chipset											ibm.com/services/its/us/source/maspspleu.pdf	
Bluetooth	Some: Bluetooth wireless technology / in CDC (with modem)												
Ethernet	Some: 10/100 ethernet on planar / Intel 82562EZ chipset (physical layer) / Wake on LAN® Some: Gigabit Ethernet on planar / Intel 82540EP chipset (MAC/PHY) / Wake on LAN												
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / 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												
Security chip	IBM Embedded Security Subsystem 2.0 ³³ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security ¹⁶ / TCG-compliant												
Limited warranty ¹²	1 year - EasyServ™. ¹⁹ onsite pickup and delivery / service upgrades ²² available												
128MB PC2700 DDR-SDRAM CL2.5 SOD	31P9828	T40/R50 Series Li-Ion Battery 6-cell		08K8214									
256MB PC2700 DDR-SDRAM CL2.5 SOD	31P9830	T40/R50 High Capacity Li-Ion Batt 9-cell		08K8197									
512MB PC2700 DDR-SDRAM CL2.5 SOD	31P9832	Ultrabay Slim Li-Polymer Battery 3-cell		08K8190									
1GB PC2700 DDR-SDRAM CL2.5 SOD	31P9834	Intel PRO/Wireless 2200BG Mini PCI		73P2801									
Second HDD Adapter for Ultrabay Slim	62P4554	IBM 11a/b/g Wireless Mini PCI Adapter II		73P4301									
CD-RW/DVD Combo Ultrabay Enhanced	73P3275	IBM 11a/b/g Wireless CardBus Adapter		31P9101									
Multi-Burner Plus Ultrabay Enhanced Drive	73P3312	ThinkPad 72W AC/DC Combo Adapter		22P9010									
IBM USB Portable Diskette Drive	05K9276	ThinkPad Port Replicator II		74P6733									
IBM USB 2.0 Combo Drive	73P4515	ThinkPad Mini Dock		287810U									
IBM USB 2.0 Portable Multi-Burner Drive	22P9163	ThinkPad Dock II		287710U									
40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	ThinkPad Carrying Case - Leather		73P3600									
80GB HS Hard Disk 9.5mm (5400 rpm)	09N4273	Other options at ibm.com/pc/us/accessories											

See footnotes for important warranty information
 US models announced April 6, 2004
 US models withdrawn effective January 2005

* Powered by Intel Centrino™ mobile technology

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Type-model	Processor	Speed GHz	Memory	Screen	Graphics controller	Disk GB ⁸	Optical	Mini PCI Comm Bay wireless	CDC modem/ Bluetooth™	Ethernet on planar	IEEE 1394 port	Security chip	Workhorse (W) Global (G) Entry (E)	Avail date
1836-GCU	Pentium® M 715	1.5	256MB	14.1" XGA	7500	40GB	Combo	* Intel 11b/g Wi-Fi ³²	Modem	10/100		Yes	No	Jul 2004
1836-GDU	Pentium M 715	1.5	256MB	14.1" XGA	9000	60GB	DVD-RW	11a/b/g Wi-Fi ³²	Modem	Gigabit	1394	Yes	No	Jul 2004
1836-H7U	Pentium M 715	1.5	256MB	15.0" XGA	7500	40GB	Combo	* Intel 11b/g Wi-Fi	Modem	10/100		Yes	No	Jul 2004
1836-H8U	Pentium M 715	1.5	256MB	15.0" SXGA+	7500	40GB	Combo	* Intel 11b/g Wi-Fi	Modem	10/100		Yes	No	Jul 2004
1836-H9U	Pentium M 725	1.6	256MB	15.0" SXGA+	9000	60GB	Combo	* Intel 11b/g Wi-Fi	Modem	Gigabit	1394	Yes	No	Jul 2004
1836-HAU	Pentium M 725	1.6	256MB	15.0" SXGA+	9000	80GB	DVD-RW	11a/b/g Wi-Fi	Mod/Blue	Gigabit	1394	Yes	No	Jul 2004
These small and medium business (SMB) models are part of the IBM US Think Express Program														
Positioning Processor	Mainstream performance and features; two-spindle system Intel® Pentium® M Processor 715 (1.5GHz) or 725 (1.6GHz) with enhanced Intel SpeedStep™ technology ¹ and 400MHz system bus										SOFTWARE ¹⁴			
L2 cache	2MB / on die (at processor speed) / ECC										Windows XP Professional			
Memory	256MB std / 2GB max ⁷ / PC2700 333MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available										- Microsoft® Windows® XP Professional ²⁰ ♦ Disk-to-Disk Recovery (in hidden protected area)			
Diskette drive	None standard / use optional USB-based diskette drive										Preloaded			
Combo	Some: DVD-ROM/CD-RW / 24X/24X/24X/8X ²¹ speed / removable from Ultrabay Enhance										• Access IBM			
DVD-RW	Some: CD-RW/DVD-RW Multi-Burner / removable from Ultrabay Enhanced										• Access Connections			
Ultrabay Enhanced Disk	One modular bay for interchangeable devices / Ultrabay Slim-compatible / 12.7 mm high 40GB ⁸ (4200 rpm), 60GB (4200 rpm), or 80GB (4200 rpm) / 9.5mm high / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional 'Second HDD Adapter for Ultrabay Slim' / IBM Hard Disk Drive Shock Absorber / IBM Active Protection System										• IBM Rescue and Recovery™			
Display	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits Some: 15.0" (381.0mm) XGA (1024x768) TFT color / Active Matrix / 200 nits Some: 15.0" (381.0mm) SXGA+ (1400x1050) TFT color / Active Matrix / 200 nits / FlexView display with wide viewing angle and high density using IPS technology										• IBM RecordNOW and Drive Letter Access powered by Sonic products (combo, DVD-RW)			
Graphics	Some: ATI® Mobility™ RADEON™ 7500 / AGP 4X / 32MB DDR1 (DDR-SDRAM) Some: ATIMobility RADEON 9000 / AGP 4X / 32MB DDR1 (DDR-SDRAM)										• InterVideo WinDVD (combo, DVD-RW)			
Graphics external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B										• InterVideo WinDVD Creator (DVD-RW)			
Keyboard	87-key / Acss IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)										• Norton AntiVirus (OEM edition)			
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass										• PC-Doctor™			
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones										• ThinkPad Utilities			
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions										• Adobe Reader			
Dimensions ³	14.1" models (WxDxH): 12.4" x 10.2" x 1.35-1.46"; 314mm x 260mm x 34-37mm 15.0" models (WxDxH): 13.1" x 10.6" x 1.47-1.58"; 332mm x 269mm x 37-40mm with optical drive and battery: 14.1" models: 6.0 lb (2.7kg); 15.0" models: 6.6 lb (3.0kg)										• IBM Update Connector™ ¹⁵			
Weight ²	with optical drive and battery: 14.1" models: 6.0 lb (2.7kg); 15.0" models: 6.6 lb (3.0kg)										Downloadable			
Case material	Color: black; All: Acrylonitrile-Butadiene-Styrene (ABS) plastic										• IBM Director Agent			
Battery - type	Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay Enhanced										• Software Delivery Assistant			
Battery - life ¹⁰	Up to 4.7 hr; Optional High Capacity 9-cell: up to 6.9 hr										• System Migration Assistant			
Architecture	Intel 855PM chipset / 82855PM Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count [LPC] interface, USB, [Bluetooth]) / PCI bus 2.2 32-bit, 33MHz (TI® PCI4520A CardBus and 1394 controller, Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for parallel, infrared, [docking-based ports])										• Client Security Software (for security chip)			
PC Card Std slots	One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door										License (CD not included)			
Ports	Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port										- Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client			
Video out	S-video out port (TV out) / one 4-pin industry standard connector										ThinkPad notebooks implement IBM ThinkVantage™ technologies and design; visit ibm.com/thinkvantage			
IEEE 1394	Some: IEEE 1394 (FireWire) port / 4-pin connector / 1394a-2000 standard										Universal 72 watt AC adapter			
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception										Asset ID™ ³⁴ (system-specific info in chip accessed over network)			
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable										PC 2001 and PXE 2.0-compliant			
Intel 11b/g ³²	Some: 11b/g Wi-Fi ³² wireless ⁴ , Mini PCI, Intel PRO/Wireless 2200BG, Intel 82532 chipset										ACPI 1.0b and 2.0-compliant			
11a/b/g Wi-Fi ³²	Some: 11a/b/g Wi-Fi ³² wireless ⁴ , Mini PCI, Atheros™ AR5001X+ chipset										CIM and DMI 2.0-compliant			
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible										ENERGY STAR®-compliant			
Modem	56K ⁶ V.90 (V.92-designed ²⁹) modem in CDC / Conexant® chipset										IBM ImageUltra™ Services available			
Bluetooth	Some: Bluetooth wireless technology / in CDC (with modem)										International Warranty Service ¹⁷			
Ethernet	Some: 10/100 ethernet on planar / Intel 82562EZ chipset (physical layer) / Wake on LAN®										24 hour x 7 day ¹⁸ toll-free warranty support during the warranty ¹²			
Audio support	Some: Gigabit Ethernet on planar / Intel 82540EP chipset (MAC/PHY) / Wake on LAN										ServicePac®, ²² 1yr IOR 9x5 NBD			
Security	Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / microphone input jack (3.5 mm) / headphone jack (3.5 mm) / no line in jack										30L9188			
Security chip	Power-on password / hard disk password / supervisor password / security keyhole										ServicePac 2 yr IOR 9x5 NBD			
Limited warranty ¹²	IBM Embedded Security Subsystem 2.0 ³³ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security ¹⁶ / TCG-compliant										30L9189			
	1 year - EasyServ™ ¹⁹ onsite pickup and delivery / service upgrades ²² available										ServicePac 3 yr IOR 9x5 NBD			
128MB PC2700 DDR-SDRAM CL2.5 SOD	31P9828	T40/R50 Series Li-Ion Battery 6-cell	08K8214											
256MB PC2700 DDR-SDRAM CL2.5 SOD	31P9830	T40/R50 High Capacity Li-Ion Batt 9-cell	08K8197											
512MB PC2700 DDR-SDRAM CL2.5 SOD	31P9832	Ultrabay Slim Li-Polymer Battery 3-cell	08K8190											
1GB PC2700 DDR-SDRAM CL2.5 SOD	31P9834	Intel PRO/Wireless 2200BG Mini PCI	73P2801											
Second HDD Adapter for Ultrabay Slim	62P4554	IBM 11a/b/g Wireless Mini PCI Adapter II	73P4301											
CD-RW/DVD Combo Ultrabay Enhanced	73P3275	IBM 11a/b/g Wireless CardBus Adapter	31P9101											
Multi-Burner Plus Ultrabay Enhanced Drive	73P3312	ThinkPad T2W AC/DC Combo Adapter	22P9010											
IBM USB Portable Diskette Drive	05K9276	ThinkPad Port Replicator II	74P6733											
IBM USB 2.0 Combo Drive	73P4515	ThinkPad Mini Dock	287810U											
IBM USB 2.0 Portable Multi-Burner Drive	22P9163	ThinkPad Dock II	287710U											
40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816	ThinkPad Carrying Case - Backpack	73P3599											
80GB HS Hard Disk 9.5mm (5400 rpm)	09N4273	Other options at ibm.com/pc/us/accessories												
				ServicePac 5 yr IOR 9x5 NBD										
				30L9196										
				ServicePac 2 yr P&L P/U Depot										
				30L9191										
				ServicePac 3 yr P&L P/U Depot										
				30L9192										
				ServicePac 4 yr P&L P/U Depot										
				69P9195										
				ServicePac 5 yr P&L P/U Depot										
				69P9197										
				Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/maspspleu.pdf										

See footnotes for important warranty information
US models announced July 13, 2004
US models withdrawn effective January 2005

* Powered by Intel Centrino™ mobile technology

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IBM® ThinkPad® R51 (2883) - Express - withdrawn

Created by IBM PC Institute
Personal Systems Reference (PSREF)

Type-model	Processor	Speed GHz	Memory	Screen	Disk GB ^a	Optical	Mini PCI Comm Bay wireless	CDC modem	Integrated graphics	Secu- rity chip	Secu- Limited warranty ¹²	Workhorse (W) Global (G) Preload Entry (E)	Avail date	
2883-2ZU	Celeron® M	1.3	256MB	15.0" XGA	30GB	Combo	Open; wireless upg ³⁶	Modem	Extreme™	2	Yes	1 yr XP Pro	No	Apr 2004
2883-2NU	Pentium® M	1.5	256MB	14.1" XGA	30GB	Combo	* Intel 11b/g Wi-Fi ³²	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	Apr 2004
2883-2XU	Pentium M	1.5	256MB	14.1" XGA	20GB	Combo	* Intel 11b/g Wi-Fi	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	Apr 2004
2883-2QU	Pentium M	1.5	256MB	15.0" XGA	30GB	Combo	* Intel 11b/g Wi-Fi	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	Apr 2004
2883-2YU	Pentium M	1.5	256MB	15.0" XGA	20GB	Combo	* Intel 11b/g Wi-Fi	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	Apr 2004
2883-8QU	Pentium M 715	1.5	256MB	14.1" XGA	30GB	Combo	* Intel 11b/g Wi-Fi	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	July 2004
2883-ARU	Pentium M 715	1.5	256MB	15.0" XGA	30GB	Combo	* Intel 11b/g Wi-Fi	Modem	Extreme 2	2	Yes	1 yr XP Pro	No	July 2004
• These small and medium business (SMB) models are part of the IBM US Think Express Program • The 2883 has a 1 year limited warranty														
Positioning Processor	Mainstream performance and features; two-spindle system Intel® Celeron M Processor 1.3GHz with 400MHz system bus or Intel Pentium M Processor 1.5GHz or Intel Pentium M Processor 715 (1.5GHz) with enhanced Intel SpeedStep™ technology ¹ and 400MHz system bus <i>Celeron M: 512KB; Pentium M: 1MB; Pentium M 715: 2 MB; All: ECC</i> 256MB std / 2GB max ⁷ / PC2700 333MHz DDR1 (DDR-SDRAM) / non-parity / CL2.5 / two 200-pin SO-DIMM sockets / std memory in one socket / one socket available									SOFTWARE¹⁴ Windows XP Professional - Microsoft® Windows® XP Professional ²⁰ ♦ Disk-to-Disk Recovery (in hidden protected area)				
L2 cache	None standard / use optional USB-based diskette drive DVD-ROM/CD-RW / 24X/24X/24X/8X ²¹ speed / removable from Ultrabay Enhance One modular bay for interchangeable devices / Ultrabay Slim-compatible / 12.7 mm high 20GB⁸ or 30GB (4200 rpm), 9.5mm high / removable and upgradable / 9.5mm high bay / supports 2nd disk with optional 'Second HDD Adapter for Ultrabay Slim' / IBM Hard Disk Drive Shock Absorber / IBM Active Protection System									Preloaded • Access IBM • Access Connections • IBM Rescue and Recovery™ • IBM RecordNOW and Drive Letter Access powered by Sonic products (combo models) • InterVideo WinDVD (combo models) • Norton AntiVirus (OEM edition) • PC-Doctor™ • ThinkPad Utilities • Adobe Reader • IBM Update Connector™.15				
Memory										Downloadable • IBM Director Agent • Software Delivery Assistant • System Migration Assistant • Client Security Software (for security chip)				
Diskette drive	Some: 14.1" (358.1mm) XGA (1024x768) TFT color / Active Matrix / 150 nits Some: 15.0" (381.0mm) XGA (1024x768) TFT color / Active Matrix / 200 nits									License (CD not included) - Lotus® SmartSuite® Millennium and Lotus Notes® Stand-alone Client				
Combo														
Ultrabay Enhanced										ThinkPad notebooks implement IBM ThinkVantage technologies and design; visit ibm.com/thinkvantage				
Disk										Universal 72 watt AC adapter Asset ID™.34 (system-specific info in chip accessed over network) PC 2001 and PXE 2.0-compliant ACPI 1.0b and 2.0-compliant CIM and DMI 2.0-compliant ENERGY STAR®-compliant IBM ImageUltra™ Services available International Warranty Service ¹⁷ 24 hour x 7 day ¹⁸ toll-free warranty support during the warranty ¹²				
Display										ServicePac®, 22 1yr IOR 9x5 NBD 30L9188				
Graphics	Integrated Intel Extreme™ Graphics 2 / in 855GME GMCH / uses main memory (up to 64MB) / 250MHz									ServicePac 2 yr IOR 9x5 NBD 30L9189				
Graphics external	External monitor support via analog DB-15 connector / up to 1600x1200 at 85Hz / DDC2B									ServicePac 3 yr IOR 9x5 NBD 30L9195				
Keyboard	87-key / Access IBM button / palm rest / pitch: 19mm; stroke: 2.7mm (std-size keys)									ServicePac 4 yr IOR 9x5 NBD 30L9194				
TrackPoint®	TrackPoint® pointing device, "Press-to-Select," Internet Scroll Bar ¹³ , magnifying glass									ServicePac 5 yr IOR 9x5 NBD 30L9196				
Touch pad	UltraNav™ multi-pointing system / touch pad below keyboard / Tap Zones									ServicePac 2 yr P&L P/U Depot 30L9191				
ThinkLight™	Illuminates the keyboard to improve visibility in low-light conditions									ServicePac 3 yr P&L P/U Depot 30L9192				
Dimensions ³	14.1" models (WxDxH): 12.4" x 10.2" x 1.35-1.46"; 314mm x 260mm x 34-37mm 15.0" models (WxDxH): 13.1" x 10.6" x 1.47-1.58"; 332mm x 269mm x 37-40mm with optical drive and battery: 14.1" models: 6.0 lb (2.7kg); 15.0" models: 6.6 lb (3.0kg) <i>Color:</i> black; <i>All:</i> Acrylonitrile-Butadiene-Styrene (ABS) plastic									ServicePac 4 yr P&L P/U Depot 69P9195				
Weight ²	Lithium Ion 6-cell / intelligent / supports unique 2nd battery in Ultrabay Enhanced <i>Celeron M model:</i> up to 3.5 hr; <i>Pentium M models:</i> up to 4.7 hr; <i>Optional High Capacity 9-cell:</i> up to 6.9 hr									ServicePac 5 yr P&L P/U Depot 69P9197				
Case material	Optional High Capacity 9-cell: up to 6.9 hr									Post-warranty annual maintenance agreements at ibm.com/services/its/us/source/maspspleu.pdf				
Battery - type	Architecture Intel 855GME chipset / 82855GME Memory Controller Hub (MCH-M) / 82801DBM ICH4-M I/O Controller Hub (ATA-100 EIDE, PCI bus, ethernet MAC, Low Pin Count [LPC] interface, USB / PCI bus 2.2 32-bit, 33MHz (TI®) PCI4510 CardBus and 1394 controller, Mini PCI, external expansion) / LPC bus 33MHz (security chip; PC87392 Super I/O for parallel, infrared, [docking-based ports])													
Battery - life ¹⁰	PC Card Std slots One Type I, one Type II, or one Type III / CardBus 32-bit / PCMCIA 2.1 / integrated door													
Architecture	Ports Two USB (Version 2.0) / parallel / external monitor (DB-15) / infrared (4Mbps) / RJ-11 (modem) / RJ-45 (ethernet) / no keyboard or mouse or serial port													
Video out	Video out S-video out port (TV out) / one 4-pin industry standard connector													
IEEE 1394	None													
Wireless antenna	UltraConnect™ Antenna built into the display cover for optimal wireless signal reception													
Mini PCI	One Mini PCI type III slot (Communications Bay) / customer upgradable													
Wireless upg ³⁶	Some: wireless upgradable with wireless Mini PCI options													
Intel 11b/g ³²	Some: 11b/g Wi-Fi ³² wireless ⁴ , Mini PCI, Intel PRO/Wireless 2200BG, Intel 82532 chipset													
CDC	One Communications Daughter Card (CDC) socket (used by modem) / not accessible													
Modem	56K ⁵ V.90 (V.92-designed ²⁹) modem in CDC / Conexant® chipset													
Bluetooth	None													
Ethernet	10/100 ethernet on planar / Intel 82562EZ chipset (physical layer) / Wake on LAN®													
Audio support	Soft audio / ICH AC97 controller / DirectSound® support / AD1981B AC97 codec / stereo speakers / 1 watt / volume up, down, mute buttons / internal microphone / 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													
Security chip	IBM Embedded Security Subsystem 2.0³³ / hardware key storage / multi-factor authentication / local file encryption / enhances VPN security ¹⁶ / TCG-compliant													
Limited warranty ¹²	1 year - EasyServ™.19 onsite pickup and delivery / service upgrades ²² available													
128 MB PC2700 DDR-SDRAM CL2.5 SOD	31P9828													
256 MB PC2700 DDR-SDRAM CL2.5 SOD	31P9830													
512 MB PC2700 DDR-SDRAM CL2.5 SOD	31P9832													
1GB PC2700 DDR-SDRAM CL2.5 SOD	31P9834													
Second HDD Adapter for Ultrabay Slim	62P4554													
ThinkPad DVD-ROM Ultrabay Slim Drive	73P3270													
CD-RW/DVD Combo Ultrabay Enhanced	73P3275													
Multi-Burner Plus Ultrabay Enhanced Drive	73P3312													
IBM 4GB Microdrive™ with PC Card	09N4280													
IBM USB Portable Diskette Drive	05K9276													
IBM USB 2.0 Portable Multi-Burner Drive	22P9163													
IBM USB 2.0 Memory Key 512MB	22P9230													
TrackPoint Cap Collection	73P2698													
Kensington® MicroSaver® Security Cable	73P2582													
ThinkPad Carrying Case - Leather	73P3600													
T40/R50 Series Li-Ion Battery 6-cell	08K8214													
T40/R50 High Capacity Li-Ion Batt 9-cell	08K8197													
Ultrabay Slim Li-Polymer Battery 3-cell	08K8190													
ThinkPad Multiple Battery Charger II	22P9040													
40GB HS Hard Disk 9.5mm (5400 rpm)	08K9816													
80GB HS Hard Disk 9.5mm (5400 rpm)	09N4273													
Intel PRO/Wireless 2200BG Mini PCI	73P2801													
IBM 11a/b/g Wireless Mini PCI Adapter II	73P4301													
IBM 11a/b/g Wireless CardBus Adapter	31P9101													
SonyEricsson® GC83 EDGE PC Card	26K3393													
ThinkPad 72W AC/DC Combo Adapter	22P9010													
ThinkPad Port Replicator II	74P6733													
ThinkPad Mini Dock	287810U													
ThinkPad Dock II	287710U													
Other options at ibm.com/pc/us/accessories														