

# Satellite Pro 460CDT

## Technical Specifications



### Processor

Model	Processor	Clock speeds
Satellite Pro 460CDT	Intel Pentium MMX 2.45-volt core using Voltage Reduction Technology	166 MHz internally 66 MHz externally (Switchable speeds for power saving)
Cache memory	32 KB on CPU	64-bit

### System memory

Memory type	Amount	Access speed	Data bus width
EDO DRAM	32 MB	(60 nanoseconds)	64-bit
Maximum memory expansion (all EDO)	160 MB	(60 nanoseconds)	64-bit
BIOS Flash EPROM	256 KB	(150 nanoseconds)	8-bit
Video RAM	2 MB	(50 nanoseconds)	16-bit
2 <sup>nd</sup> level cache memory	256 KB	(14 nanoseconds)	8-bit

### Memory technology

Technology	3.3-volt
No. of expansion slots	1
Expansion module sizes	8 MB, 16 MB, 32 MB, 48 MB, 128 MB

### Memory map

Address	Size in Kb	Usage
00000000 - 0009FFFF	640	System working memory
000A0000 - 000BFFFF	128	Video RAM area
000E0000 - 000EFFFF	64	Video BIOS RAM (default)
000E0000 - 000EFFFF	64	Video BIOS (RAM shadow)
000F0000 - 000FFFFF	64	System BIOS (RAM shadow)
00100000 - rest of memory up to 160 MB		System extended memory
FFFE0000 - FFFEFFFF	64	SM-RAM in SM mode
FFFF0000 - FFFFFFFF	64	System BIOS ROM

**Diskette drive**

Specification	High setting	Low setting
Media supported	3.5 inch 2 HD	3.5 inch 2 DD
Storage capacity	1.44 MB	720 KB
Rotation	300 rpm	300 rpm
Transfer rate	500 Kbit per second	250 Kbit per second
Bytes per sector	512	512
Sectors per track	18	9
Dimensions	96 x 12.7 x 126 mm	

**Hard disk drive**

Formatted capacity	2.1 bill. bytes (2.02 GB)
Data transfer rate to media	38.6 - 69.8 Mbit/sec
Average seek time	13 ms
Track-to-track seek time	3 ms
Drive rotation	4,200 rpm
No. of disks	3
No. of read/write heads	6/16
Coding	8-9 RLL
Bytes per sector	512
Interleave	1:1
Interface	ATA-2 and 3 (Enhanced IDE)

**Internal CD-ROM drive  
(Swappable with floppy  
disk drive)**

Supported CD-ROMs	12 cm/8 cm
Applicable disc format	Red-Book, Yellow-Book, CD-ROM XA, CD-Bridge (Photo-Video-CD), CD-I, CD-I Ready, CD-G, Multisession (Photo-CD, CD-Plus)

**Sustained data transfer  
rates (typical)**

Rotation speed (rpm)	1200 to 3180 (6X)	2200 to 3500 (10X)
Yellow-book mode 1	900 KB/s (6X)	1500 KB/s (10X)
Yellow-book mode 2	1026 KB/s (6X)	1710 KB/s (10X)
Burst (Atapi interf. PIO mode)	11.1 MB/s (3)	8.33 MB/s (2) 13.3 MB/s (1)
Average random access	190 ms (6X)	180 ms (10X)
Average full stroke access	330 ms (6X)	320 ms (10X)
Data buffer capacity	128 KB	128 KB
Dimension	128 x 12.7 x 129 mm	5.0 x 0.5 x 5.0 inches

Screen	Screen type	Active matrix colour TFT		
	Number of dots	800 x 600		
	Dot pitch	0.3075 mm x 0.3075 mm		
	Display area	246.0 mm x 184.5 mm		
	Diagonal	30.7 cm (12.1 inch)		
	Contrast ratio	150:1 (typically)		
	Simultaneous colours*	up to 256 K		
	Colour palette	16 million		
	Response rise/fall	20 ms / 50 ms		
	LCD brightness (AC operated)	120 NIT		
	LCD brightnes (battery op.)	70 NIT		
	*Maximum colours with dithering. Video modes with more colours use optimised colour adaption			
Video modes	Video display	Resolution	Max. refresh rate	Max. numbers of colours
	Internal display VGA	640 x 480	----	16 colours
	Internal display SVGA	640 x 480	----	up to 16.7 mill.
	Internal display SVGA	800 x 600	----	up to 16.7 mill.
	Dual display VGA	640 x 480	60 Hz	16 colours
	Dual display SVGA	800 x 600	60 Hz	up to 16.7 mill.
	Dual display SVGA*	1024 x 768	60 Hz	up to 64 K colours
	Dual display SVGA*	1280 x 1024	60 Hz	up to 256 colours
	External SVGA	640 x 480	85 Hz	up to 16.7 mill. colours
	External SVGA	800 x 600	85 Hz	up to 16.7 mill. colours
	External SVGA	1024 x 768	85 Hz	up to 256 colours
	External SVGA	1280 x 1024	85 Hz	up to 256 colours
	* More pixels required than are available. Picture will scroll			
	Physical dimensions	Weight	Size (W, L, H)	Size (inches)
3.1 kg* (6.8 lbs)		303 x 239 x 50 mm	11.9" x 9.4" x 1.9"	
* Including FDD, cables & battery				
Battery types	Main	Back-up	RTC	
	Lithium-ion	NiH <sub>2</sub>	NiH <sub>2</sub>	
	3.6 V x 1200 mAH	7.2 V x 110 mAH	3.6 V x 30 mAH	
Resume battery back-up	Main	Back-up	RTC	
	5 days (typical)	4 hours	1 month	

**Battery life**

Maximum life	3 hrs. (PC Magazine's Rundown V2.0)
	Battery life doubles with second battery

**AC adaptor**

Input voltage	100 - 240 V AC, self-adjusting
Frequency	50 - 60 Hz
Output voltage	15 V
Output current	3 A max.
Power dissipation	45 W max.
Weight	340 g

**Internal modem (optional)**

<b>Controller -mode</b>	<b>Standard</b>	<b>Speed</b>
Data modem	Bell-103/212A	300 to 2400 bps
	ITU-T-V.32	4800 and 9600 bps
	ITU-T-V.32 bis	4800, 7200, 9600, 12000 and 14400 bps
	ITU-T-V.34	2400 to 33600 bps
Fax modem	V. 21 ch 2	300 bps send/receive
	V. 27 ter	2400/4800 bps send/receive
	V. 29	7200/9600 bps send/receive
	V. 17	12000/14400 bps send/rec.
<b>Controller-less mode is OS-dependent</b>		See controller mode above
<b>Functionality</b>		
Speaker phone	Half/full duplex speaker phone	
Telephone answering	Supports voice mail	
Ring wake-up resume	Incoming signals revive the PC	
Incoming call discrimination	Switches from fax modem mode to telephone answering mode depending on the incoming signal	

Connectivity & expansion	PC ports	Card Station III	Expansion
	Serial	Serial	PC: 1 PC Card slot for 2 Type II cards or 1 Type III card CardBus and ZV port ready
	Parallel (ECP)	Parallel (ECP) slot	PC: Internal memory module
	(S)VGA monitor	(S)VGA monitor	Card Station: 2 Type III PC Card slots
	External FDD	External FDD	
	Card Station connector	Notebook connector	
	Serial infrared port	MIDI/Joystick connector	
	USB	2 USBs	
	PS/2 keyboard/mouse	PS/2 keyboard/mouse	
	Audio in	Audio in/out	
	Headphone	Headphone	
	External microphone	Kensington Cable Lock (PC Card slot security integrated)	
	SelectBay for FDD/CD-ROM/2 <sup>nd</sup> Battery/2 <sup>nd</sup> HDD		
Sound system	16-bit, Sound Blaster Pro compatible & Windows Sound System V. 2.0		
	MIDI and Wave support		
	Built-in microphone and 2 stereo speakers		
	<i>The internal microphone is disabled when an external microphone is connected</i>		
Bundled software	PCs with Microsoft Windows® 95		
	- Microsoft Windows® 95		
	- Toshiba utilities and drivers for Microsoft Windows® 95		
	- Hypertext on-line manual (Satellite Pro 440/460 Series User's Manual)		
	- Hypertext on-line help (User's Guide for Microsoft Windows® 95)		
	If you require PCs with MS-DOS & MS Windows for Workgroups		
	- MS-DOS and MS Windows for Workgroups		
	- Toshiba utilities and drivers for MS Windows for Workgroups		
	- PC Card and Socket services		
	- Hypertext on-line manual (Satellite Pro 440/460 Series User's Manual)		
	- Hypertext on-line manual (MS Windows for Workgroups)		
	- Hypertext on-line help (User's Guide for MS Windows for Workgroups)		
	Other Microsoft operating systems on request.		

**Environmental conditions**

	Operating	Non-operating
Temperature	5° C to 35° C	-20° C to 65° C
Thermal Gradient	20° C/hour	20° C/hour
Relative Humidity	20% to 80% non-condensing	10% to 90% non-condensing
Altitude (relative to sea level)*	-60 to 3,000 m (-200 to 10,000 feet)	-60 to 10,000 m (-200 to 30,000 feet)
Shock**	10 G	60 G
Vibration**	0.25 G	1 G

\* Aeroplane cabin pressures simulate low altitudes, so flying higher causes no restrictions.

\*\* When CD-ROM drive installed

**Certification**

This product is approved for electrical safety and/or electromagnetic compatibility (EMC) by the following associations:

TÜV

DIN GOST TÜV

SEV

UL

CSA

FCC

SASO

The manufacturer declares that this product complies with the following directives and regulations for the CE-marking. The party responsible for CE approval is Toshiba Europe GmbH.

93/68/EEC	CE marking directive
89/336/EEC	EMC directive
73/23/EEC	Low voltage directive
91/263/EEC	Telecommunication Directive
EN 60950	Electrical safety
EN 55022 B	EMC / Radio disturbances
EN 50082-1	EMC / Immunity
EN 61000-3-2, -3-3	Disturbances in supply systems

# Satellite Pro 460CDT

## Features & Benefits



	FEATURE	BENEFIT
<b>Microprocessor</b>	<ul style="list-style-type: none"> <li>• Intel Pentium 166 MHz</li> <li>• MMX technology</li> <li>• 2.45-volt core technology</li> <li>• 32 KB integrated cache</li> <li>• Integrated numeric co-processor</li> </ul>	<ul style="list-style-type: none"> <li>• Provides high speed, true 64-bit processing power to cope with even the most advanced software applications and GUI's</li> <li>• Improves the overall performance speed especially multimedia applications</li> <li>• Reduces the amount of power consumed (longer battery operating) and reduces heat generated</li> <li>• Speeds up processing of data between CPU and memory</li> <li>• Faster processing of math-intensive applications</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• Standard 32 MB EDO RAM</li> <li>• Expandable up to 160 MB</li> <li>• 256 KB 2<sup>nd</sup> level cache</li> <li>• 8 MB, 16 MB, 32 MB, 48 MB, or 128 MB memory modules (optional)</li> <li>• Shadow ROM</li> <li>• 256 KB Flash EPROM</li> </ul>	<ul style="list-style-type: none"> <li>• 32 MB is the ideal amount of RAM for Windows to run powerful, memory intensive software and operating systems at a comfortable speed</li> <li>• Enough expansion room for the most demanding user</li> <li>• Ensures optimal memory access speed, allowing highest possible performance</li> <li>• Faster manipulation of software and data stored in memory</li> <li>• User can upgrade memory when need arises</li> <li>• Enhances computer performance</li> <li>• Flash EPROM's allow user to quickly update BIOS if necessary via software without returning machine to supplier</li> </ul>
<b>Removable internal FDD drive or external FDD</b>	<ul style="list-style-type: none"> <li>• 3.5" diskette drive</li> </ul>	<ul style="list-style-type: none"> <li>• Provides small, durable, industry-standard media for portable environment</li> <li>• Easily removed to make way for the CD-ROM</li> <li>• Reads from and writes to 3.5" 720 KB and 1.44 MB diskettes</li> </ul>
<b>Hard disk drives</b>	<ul style="list-style-type: none"> <li>• 2.1 billion byte removable hard disk</li> <li>• ≤ 13 ms average access time and 1:1 interleave</li> <li>• Low-power consumption modes</li> </ul>	<ul style="list-style-type: none"> <li>• Provides large storage capacity for multiple programs and data</li> <li>• Fast access to programs and data stored on hard disk</li> <li>• Maximise battery operating life</li> </ul>
<b>CD-ROM drive</b>	<ul style="list-style-type: none"> <li>• 12 mm high ten-speed CD-ROM drive</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for video and sound files</li> <li>• Reads from 8 cm and 12 cm CD-ROMs</li> <li>• Store up to 640 MB on one disk</li> <li>• CD-ROM drive is removable and replaceable with FDD</li> <li>• Fastest CD-ROM drive available on the mobile market</li> </ul>
<b>SelectBay</b>	<ul style="list-style-type: none"> <li>• SelectBay</li> </ul>	<ul style="list-style-type: none"> <li>• Store an additional HDD or battery here to enlarge the data carrying capacity or increase battery life</li> </ul>

	<b>FEATURE</b>	<b>BENEFIT</b>
<b>Display</b>	<ul style="list-style-type: none"> <li>• TFT colour screen</li> <li>• 30.7 cm (12.1")</li> </ul>	<ul style="list-style-type: none"> <li>• Most modern colour flat screen technology available</li> <li>• Comfortable working size</li> <li>• Perfect for presentation graphics and all Windows-based applications</li> </ul>
<b>Graphics sub-system</b>	<ul style="list-style-type: none"> <li>• Advanced video controller with SVGA resolutions</li> <li>• Graphics adaptor</li> <li>• PCI local-bus</li> <li>• Video graphics accelerator</li> <li>• Dual display mode</li> </ul>	<ul style="list-style-type: none"> <li>• Practical for presentations on large monitors or data projectors or for work with design or DTP programs in the office or on the road</li> <li>• 16.7 mill. colours (TFT) at 800 x 600 (int.) and 16.7 mill colours at 800 x 600 (ext.)</li> <li>• Speeds up the transfer of data to screen creating faster images and clearer video</li> <li>• Ensures that graphics are generated quickly on screens to take advantage of Graphical User Interfaces such as Windows</li> <li>• Allows user to show data and presentations to colleagues or customers while controlling the procedure from internal screen and keyboard.</li> </ul>
<b>Keyboard</b>	<ul style="list-style-type: none"> <li>• Full-function keyboard</li> <li>• Cursor keys</li> <li>• 12 function keys and embedded keypad</li> <li>• 8 hot keys</li> <li>• Palm-rest for hands</li> </ul>	<ul style="list-style-type: none"> <li>• 3 mm travel ensures faster, more comfortable data entry</li> <li>• Allow fast, convenient cursor positioning</li> <li>• Provide desktop keyboard functionality and greater productivity</li> <li>• Allow users to change set-up features and HotLock security direct from the keyboard</li> <li>• Allows easy comfortable typing, even where there is no flat surface</li> </ul>
<b>Pointing device</b>	<ul style="list-style-type: none"> <li>• Integrated MousePoint pointing device with buttons built into panel</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Precise control of cursor</li> <li>• No protruding extras when travelling</li> </ul>
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• SVGA colour monitor port</li> <li>• Parallel (ECP) port</li> <li>• Fast infrared port</li> <li>• PS/2 keyboard/mouse port</li> </ul>	<ul style="list-style-type: none"> <li>• Provides high-resolution (up to 1280 x1024 dots) display of colour and graphics on external monitor</li> <li>• Allows use of peripheral devices accepting parallel signals</li> <li>• Permits easy data exchange with external storage devices</li> <li>• Permits easy and rapid data exchange with external devices, (e.g. CD-ROMs and networks)</li> <li>• Wireless bi-directional transmission of files between many types of devices incl. PCs, printers, PDAs, modems, telephones.</li> <li>• Low power consumption</li> <li>• IrDA 1.1 compliant-industry standard</li> <li>• Provides full keyboard versatility</li> <li>• Allows use of 102-key keyboard when desired; increases productivity of operators familiar with 102-key keyboard</li> <li>• Allows faster, more accurate entry of numerical data</li> </ul>



	FEATURE	BENEFIT
<b>Interfaces cont.</b>	<ul style="list-style-type: none"> <li>• PS/2 keyboard/mouse port</li> <li>• Audio in</li> <li>• Microphone</li> <li>• Headphone</li> <li>• Card Station III connector</li> <li>• External FDD</li> <li>• MIDI/Joystick connector (via Card Station III)</li> <li>• Universal Serial Bus</li> <li>• Audio out (via Card Station III)</li> </ul>	<ul style="list-style-type: none"> <li>• Allows use of desktop pointing devices such as a mouse with graphics and presentation software</li> <li>• Frees serial port for use by another device</li> <li>• Increased productivity of operators familiar with using a mouse</li> <li>• Lets you play stereo sound from an external device</li> <li>• Enables connection of a microphone for audio input</li> <li>• Enables connection of a stereo headphone for audio output</li> <li>• Provides an instant connection to all ports hooked up to base</li> <li>• Allows connection and use of a floppy and CD-ROM simultaneously</li> <li>• Connect a MIDI device such as a synthesiser to compose music or connect a joystick for games</li> <li>• Allows to hook up to 127 peripheral devices to run simultaneously on the PC</li> <li>• Lets you out put stereo sound to an external device</li> </ul>
<b>Expansion slots</b>	<ul style="list-style-type: none"> <li>• 2 Type II or 1 Type III PC card slot</li> <li>• CardBus and ZV card ready</li> </ul>	<ul style="list-style-type: none"> <li>• Provides mobile communication and expansion in a credit -card-sized format</li> <li>• Allows access to many high performance PC Card expansion devices</li> <li>• Can be used for a wide range of communication and expansion modules such as modems, network adaptors, flash memory cards and removable hard disks</li> <li>• Enhances high-end multimedia capability to the computer</li> </ul>
<b>Design</b>	<ul style="list-style-type: none"> <li>• A4 notebook design</li> <li>• Rugged ABS casing</li> </ul>	<ul style="list-style-type: none"> <li>• Provides the speed, power and expandability of a high performance desktop in a lightweight, go-anywhere form</li> <li>• Tough enough to take the knocks of life on the road</li> <li>• Colour is integrated into material so casing doesn't require painting and there is no danger of paint peeling or scratching</li> </ul>
<b>Power system</b>	<ul style="list-style-type: none"> <li>• Lightweight removable, rechargeable lithium-ion battery packs</li> <li>• Toshiba MaxTime Power Management (MTPM)</li> <li>• Advanced Power Management (APM)</li> <li>• Intelligent power supply with battery "gas gauge," invoked through pop-up menu</li> <li>• System reset button</li> </ul>	<ul style="list-style-type: none"> <li>• Higher capacity than other battery types</li> <li>• Environmentally friendly to dispose of</li> <li>• Offers long battery life</li> <li>• Allows user to specify when power-hungry components should be shut down to make most efficient use of available battery power</li> <li>• Determines power needs by communicating with APM compatible software and passing on information to MTPM</li> <li>• Provides easy access for monitoring battery life</li> <li>• Allows rebooting without cycling power and without keyboard use (functions even when keyboard is locked)</li> </ul>

	FEATURE	BENEFIT
<b>Multiple security system</b>	<ul style="list-style-type: none"> <li>• System password security</li> <li>• HotLock security</li> <li>• Kensington MicroSaver provision</li> </ul>	<ul style="list-style-type: none"> <li>• Stops unauthorised access to data and software when power is switched on</li> <li>• Instant security with a screen blank and keyboard/mouse lock-out using the F1 hot key</li> <li>• Hardware-based theft prevention. The computer can be physically secured to an immovable object.</li> </ul>
<b>Special features</b>	<ul style="list-style-type: none"> <li>• Flash EPROM</li> <li>• Built-in sound system</li> <li>• Plug and Play BIOS</li> <li>• AutoResume with AutoSave</li> <li>• Pop-up menu</li> <li>• Hot keys</li> <li>• LED icon bar</li> <li>• Power button flap</li> </ul>	<ul style="list-style-type: none"> <li>• Allows end user to easily update BIOS if needed</li> <li>• Provides audio support to visuals</li> <li>• 16-bit Sound Blaster Pro compatible sound card</li> <li>• Microphone &amp; Speaker inside the computer</li> <li>• Ready for Windows® 95</li> <li>• Allows you to turn the notebook off without exiting from software application; powers-up where you left off. AutoSave provides security against possible data loss due to loss of power.</li> <li>• Lets you change the configuration options and monitor the battery power level</li> <li>• Allow users to change various system configuration options any time, at the press of a key</li> <li>• Users can see the status of the machine even with lid closed</li> <li>• Avoids the risk of accidentally turning the PC on or off</li> </ul>
<b>Toshiba support</b>	<ul style="list-style-type: none"> <li>• 3-year International Warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Provides confidence that the notebook will give lasting, reliable performance throughout the world</li> </ul>
<b>Options</b>	<ul style="list-style-type: none"> <li>• 8, 16, 32, 48 and 128 MB memory modules</li> <li>• High-speed PC Card modem</li> <li>• Extra battery pack</li> <li>• Quick battery charger</li> <li>• Key caps for European languages</li> <li>• Card Station III</li> <li>• PC Card Ethernet adaptor</li> </ul>	<ul style="list-style-type: none"> <li>• Permits convenient, easy-to-install memory expansion for memory-intensive software applications</li> <li>• Provides easy access to information world-wide</li> <li>• Increases battery life while on the road</li> <li>• One battery can be charged using the quick battery charger while the other is in use to extend overall operating time</li> <li>• Users in virtually all countries work with most familiar set of keys</li> <li>• Connects to the back of the Satellite Pro Series, providing Windows®95 Plug-and-Play connectivity</li> <li>• Locks into place with special hooks: very stable</li> <li>• Allows customers to leave everything connected in the office, ready for reconnection in one easy clip-on movement</li> <li>• Includes a complete row of port options: USB x 2, PS/2 mouse / keyboard, RGB, serial, parallel, external FDD, audio in/out, external microphone, headphone, Joystick/MIDI</li> <li>• Two separate PC Card Type III slots</li> <li>• Kensington Cable Lock Port ( PC card slot security functionality is integrated)</li> <li>• Lets you connect all your computers to one network</li> </ul>

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# Satellite Pro 460CDT

## Options



	PA Number	Article
<b>Memory</b>	PA2038U	8 MB memory kit
	PA2039U	16 MB memory kit
	PA2040U	32 MB memory kit
	PA2041U	48 MB memory kit
	PA2042U	128 MB memory kit
<b>Keyboard</b>	PA2213GR	Keycaps for German keyboard
	PA2213FR	Keycaps for French keyboard
	PA2213SC	Keycaps for Scandinavian keyboard
	PA2213 SL	Keycaps for Swiss keyboard
	PA2213IT	Keycaps for Italian keyboard
	PA2213SP	Keycaps for Spanish keyboard
	PA2213EN	Keycaps for English keyboard
<b>Power</b>	PA2450UE	Universal AC adaptor
	PA2487U	Lithium-ion battery pack
	PA2493UE	Battery charger
<b>Expansion</b>	PA2717UE	Card Station III
	PA2451U	Secondary battery pack
	PA2609U	2.0 GB secondary HDD Kit
<b>Communications</b>	PA2827E	Modem kit
	PCE2-10BC	PC Card Ethernet adaptor