

TECRA 780DVD Product Specifications

780DVD: PA1264U-T2D (5.1 billion byte)
(8.1 billion byte Available CQ3'98: PA1267U-T2D)

PROCESSOR		Intel Mobile PentiumII® 266MHz (1.7v/1.8v/8W)
Integrated Coprocessor		Yes
Processor Cache (L1) Capacity		32KB: (16KB code; 16KB data)
LEVEL 2 (L2) CACHE		Yes: 512KB Integrated into CPU
Type of cache memory		2 Mbit Pipelined Burst Synchronous SRAM (3.3v)
Access Time		8 ns
Data/Address Bus Width		64-bit / 32-bit
Front Side Bus Speed		66 MHz
Supported Standards		ACPI v1.0 Ready, Wired for Management v.1.1a
MEMORY: 64 Mbit EDO DRAM, 3.3V		
Standard		64MB (on board, 2 free memory slots)
Maximum		192MB
Speed		60ns
Hyper Page mode memory access		Yes
Data/Address Bus width		64 bit/32-bit
Data Bus speed		66 MHz
BIOS		Yes: (512KB 4Mbit FLASH EEPROM, 3.3V)
Standards supported		APM(1.2), PnP(1.0A), VESA(2.0), DMI(2.0), DDC2B, DPMS, ACPI(1.0), PCI
SYSTEM ARCHITECTURE		<u>Chipset</u> <u>Connecting Devices</u>
PCI BUS (v2.1): (32-bit, 33 MHz)	Intel 440BX	PC Card Slots, Expansion Bus, Modem DSP, Video Capture controller HDD, CD-ROM
PCI BUS (v2.1): (32-bit, 66 MHz)	Intel 440BX	Graphic Controller
ISA BUS: (8-bit/16-bit f/BIOS, 8 Mhz)	N/A	BIOS, Sound chip, FDD, Keyboard controller
STORAGE		
Removable HDD (2.5" Enhanced IDE)		5.1 billion bytes (Read/Write: 12msec/13msec) , Buffer: 512KB
Available CQ3'98		8.1 billion bytes (Read/Write: 12msec/13msec) , Buffer: 512KB
Height		17mm
Burst Data Transfer Rate		Ultra DMA Mode2 (33MB/sec), DMA Mode2 (16MB/sec), PIO Mode 4 (16MB/sec)
SELECT BAY DEVICES		<u>DESCRIPTION</u> <u>WEIGHT</u>
Second Battery Li-Ion (10.8V, 3600mAH)	Optional: Part# PA2446U	1.15 lbs.
Modular FDD (3.5" 1.44MB)	Included/Swappable with DVD-ROM	
FDD Dimensions	4.57"L x 3.78"W x .5"H	.62 lbs.
Simultaneous FDD & CD-ROM Support	Yes: External FDD adapter included	
FDD Adapter Dimensions	7.0"L x 5.5"W	.25 lbs.
Modular HDD (2.5" Enhanced IDE)	Optional/For use in SelectBay only: Part # PA2607U (Weight .59lbs.)	
Capacity	4.0 billion bytes (Read/Write: 13msec/14msec), Buffer: 512KB	
Height	12.7mm Slimline (Not compatible with Desk Station V Plus)	
Burst Data Transfer Rate	Ultra DMA Mode2 (33MB/sec), DMA Mode2 (15MB/sec), PIO Mode 4 (14MB/sec)	
Modular DVD-ROM: Toshiba SD-C2002	Installed/Swappable with FDD (Weight: 0.90 lbs)	
Storage space/disk	4.7 GB	4.7 GB
Operation modes	<u>DVD-ROM</u>	<u>CD-ROM</u>
Access Speed	8X Max (2X Average)	16X Max
Random Access Time	180ms	120ms
Sustained Data Transfer rate	1352-2,704 KB/sec	1180-2,736 KB/sec
CD-ROM Compatibility	Red Book, Yellow Book, CD-ROM XA, CD-I Bridge (Photo-CD)	
	CD-I, CD-I Ready, CD-G, Multisession (Photo-CD, CD-Extra), CD-RW ¹	
DVD-ROM Compatibility	DVD-ROM only (no DVD-RAM supported)	
DVD-Movie compatibility	Region 1 (North America).	
ActiveMovie support	Yes	
MPEGII video support	Yes: using C-Cube Microsystems Ziva 1.1 DVD Decoder chip	
MPEGII audio support	Yes	
Dolby™Digital Surround Sound AC-3	Yes: (5.1 channel, common with Headphone jack/AC3 digital)	
1. Read only: Reads CD-RW format, but does not write.		

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DISPLAY

Type	13.3"Diagonal TFT Active Matrix (1,024 x 768 resolution)
Dot Pitch	.26mm x .26mm
Contrast Ratio	100:1 (min)

VIDEO

Memory: 16Mbit SGRAM, 3.3V	4 MB
Access Speed	83 MHz <i>with Hyper-page mode support</i>
Data Bus Width/Clock Speed	64-bit/33 Mhz
Graphic Controller	
PCI Bus Architecture w/burst mode	Yes: 32-bit, 33 MHz
Standards supported	DPMS, PnP v.1.0A, VESA 2.0
DuoView™ Device support ²	Allows display of different images (or the same image) on following screen combinations: notebook/external monitor; notebook/TV; external monitor/TV
Controller Chip	S3 Virge MX 3D (= 86C260) with <i>Frame-based AGP support</i>
64-bit BitBLT Engine	Yes
2D Supported Features	BitBLT, H/W Cursor, DirectDraw
3D Supported Features	
Modeling	Fogging
Shading	Flat shading, Gouraud shading
Rendering	Bilinear/Trilinear texture mapping , Anti-aliasing, MIP mapping, Z-buffering
Direct3D support	Yes
OpenGL	Yes
Digital Video Accelerator	
YUV Color Space Conversion	Off-loads conversion from CPU for higher performance full motion video without compromising picture quality or frame rate.
Scaling/ Interpolation	Yes: vertical & horizontal
Zoomed Video Port Support	Yes: vertical & horizontal
DirectVideo support	Yes:w/Game SDK driver fr/Microsoft
DirectMPEG	Yes
TV Encoder support	Yes: NTSC/PAL video out, and S-Video out with flicker reducing filter

INTERNAL VIDEO SUPPORT		<u>Colors</u>	<u>Refresh Rate (Non-Interlaced)</u>
Smaller Image	640 x 480	24-bit (16.7M)	N/A
Smaller Image	800 x 600	24-bit (16.7M)	N/A
Full Screen	1024 x 768	24-bit (16.7M)	N/A
Virtual Display Mode	1280 x 1024	16-bit (64K)	N/A
Virtual Display Mode	1600 x 1200	8-bit (256)	N/A

EXTERNAL VIDEO SUPPORT (CRT)		<u>Colors</u>	<u>Refresh Rate (Non-Interlaced)</u>
	640 x 480	24-bit (16.7M)	85 Hz
	800 x 600	24-bit (16.7M)	85 Hz
	1024 x 768	24-bit (16.7M)	85 Hz
	1280 x 1024	16-bit (64K)	75 Hz
	1600 x 1200	8-bit (256)	87 Hz (Interlaced)

VIDEO CAPTURE SUPPORT		<u>Colors</u>	<u>Fps (w/ZV Port/.AVI file)</u>
	160 x 120	Up to 16.7M	30
	320 x 240	Up to 16.7M	15
	640 x 480	Up to 16.7M	3

Input sources	ZV Port-enabled PC Card or ZV Port-enabled External Camera unit
Connected Bus type	PCI bus (for ProShare/Video conferencing) and ZV port (normal capture)
Supported file formats	.BMP, .JPEG, .AVI (for video)
Maximum # of Still images to be stored	12
Maximum time of video recording	Varies by free space of main memory and HDD

2. Future operating systems may support simultaneous display of different resolutions on mutiple devices.

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CAMERA

Mount	External (hook on right edge of display panel)
Type	1/4-inch CCD
Effective pixels	640 x 480 (= 307.2K)
Lens (Manual Focus)	F2.8, f = 4.6 mm
Focusing range	> 10 cm, by manual focus
Viewing angle of Center	Horizontal: ± 22.5 degrees (45° total); Vertical: ± 16.9 degrees (33.8° total)
Minimum illumination	40 luxes
Tilting angle	-50 to +50 degrees
Panning angle	-45 to +225 degrees (horizontal)
Interface connector	Multiplexed YUV 8-bit digital/26 pin proprietary connectory
Interface cable length	50cm
Automatic Light Control (ALC)	Yes: AGC (0 db~ +12db); ELC (1/60 ~ 1/10,000 sec)
White Balance ATW	Yes
Dimensions	5.63"L x 1.54"W x .83"D
Weight	.26 lbs.

SOUND SYSTEM

Chipsets:	Yamaha 3D sound effect-enabled OPL3-SA3
Functions supported	
Dolby™ Digital Surround Sound AC-3	Yes: (w/Windows 95 only)
Sound formats supported:	SoundBlaster Pro™ v.3.01, MIDI, Windows Sound System v.2.0
16 bit stereo audio playback/record	Yes: w/48kHz maximum sampling rate
Synthesis Policy	FM synthesis with Wavetable software support
Full duplex function	Yes: including simultaneous playback and record
DirectSound/Direct3DSound support	Yes: with Windows 95 Game SDK driver from Microsoft
Volume control	Yes
Speaker system:	Two top-mounted stereo speakers (28mm, 16 Ω)

INTERNAL MODEM

Type	K56Flex with DSVD, V.34 and V.80 support for Video Conferencing V1.1 Lucent Modem with up to 48-50 Kbps "downstream" transfer speeds Software upgradeable for future standard updates
DAA support	US/Canada
Data support	
Protocols supported	Bell-103/212A, CCITT-V.21/V.22, V.23, V.22bis, V.32, V.32bis, V.34
Error correction	MNP 1-4
Data compression	MNP 5 for upto 2X data compression, CCITT V.42 bis for upto 4X data compression
Fax support	Fax class 1, Class 1 ECM
Protocols supported	V.21 ch2, V.27 ter, V.29, V.17
Cellular support	US Cellular support under Windows 95 only
Protocols supported (Phone)	Bell-103/212A, CCITT-V.21/V.22, V.23, V.22bis, V.32, V.32bis, V.34
Protocols supported (Fax)	V.21 ch2, V.27 ter, V.29, V.17
Fax class	Fax class 1, Class 1 ECM
Phones supported	Motorola Micro TAC (DPC550, Alpha, Lite, and Ultralite) and Motorola Elite only
Telephony Functions (Windows 95 only)	
Standard software	Ring Zero RingCentral telephony software
Functions supported	Speaker phone, Telephony Answering Machine, Ring Wake-up Resume Incoming Call Discrimination
DSVD protocols supported	ITU-T V.70, V.75, V.76, G.729, V.80, V.25terA, V.34, V.8bis
Video Conferencing (Windows 95 only)	
Standard software	Intel Video Phone with Proshare Technology 2.0 and Microsoft Netmeeting 2.1
Protocols supported	ITU-T H.323 (Internet video conferencing); H.324 (POTS video conferencing); H.245; H.223; G.723; H.263; V.80; V.25terA; V.34; V.8bis
Data sharing support	T.120; T.121; T.122; T.123; T.124; T.125; T.126; T.127

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EXPANSION SLOTS	LOCATION
Two Stacked PC Card Slot ³	Yes: Left side (<i>CardBus & ZV Card Ready</i>)
32-bit, 3.3V PC CardBus Support	Yes
16-bit, 5.0V PC Card Support	Yes
Two Internal Memory Slots	Yes: Below left-half of the palm rest (above main HDD)
EXPANSION PORTS	LOCATION
One 9-Pin Serial (16550 UART compliant)	Yes: Rear of unit
One 15-Pin RGB (SVGA video)	Yes: Rear of unit
One Expansion Bus	Yes: Rear of unit (<i>for use with Docking Station or Port Replicator</i>)
One 25-Pin Parallel (8 bit ECP)	Yes: Rear of unit
One DC IN port	Yes: Rear of unit
Noteworthy security lock port	Yes: Rear of unit
Microphone (3.5mm mini jack, monoaural)	Yes: Rear of unit
Headphone (3.5mm mini jack, stereo, 16Ω min)	Yes: Rear of unit (<i>stereo, common with Headphone/AC3 digital</i>)
Line-in (3.5mm mini jack, stereo, 2V rms)	Yes: Rear of unit
Line-out (3.5mm mini jack, stereo, 0.7V rms)	Yes: Rear of unit
Dolby AC3 Digital	Yes: Rear of unit (<i>5.1 channel, common with Headphone/AC3 digital</i>)
One (PS/2) 101 Keyboard/Mouse port	Yes: Rear of unit (<i>supports "Y" Connector</i>)
One S-Video out port	Yes: Rear of unit
One NTSC/PAL out port	Yes: Rear of unit
One Fast Infrared port	Yes: Rear of unit (<i>IrDA 1.1:4 Mbps compatible</i>)
One External Floppy Drive port	Yes: Left side
Two Universal Serial Bus (USB) ports	Yes: Left side (<i>Supports 127 devices. Throughput Rate: 12Mbps/sec.</i>)
One Power switch	Yes: Left side
One Reset Button	Yes: Left side
Noteworthy security lock port	Yes: Left side (<i>Use when docked</i>)
One RJ-11 port for internal modem (supplied)	Yes: Right side
One Cellular Modem port ⁴	Yes: Right side
One External Camera port	Yes: Right side (<i>Proprietary 26-pin connector</i>)
KEYBOARD	
84keys, 3mm Travel	Yes: 12 dedicated function keys; Cursor control (8 Keys, Inverted "T")
Windows 95 support	Yes
Keyboard tilt	Yes
Numeric keypad (Integrated Overlay)	Yes
Integrated Pointing Device	AccuPoint™
Enhanced Port Replicator II (Optional)	Part# PA2716U
Two Type III CardBus ready PC Card slots	Yes: each slot supports one card
Supported Interfaces	Serial, parallel, PS/2 keyboard, PS/2 mouse, DC in, SVGA monitor, FDD port, lock slot, joystick/MIDI, audio line-in, line-out, headphone, microphone
Desk Station V Plus (Optional)	Part# PA2710U
Supported Interfaces	(2) Full length 32-bit PCI/16-bit ISA slots; (1) Half Length 32-bit PCI slot; (2) Type III PC Card slots; (1) SCSI II; (1) 5.25" half height drive bay; (1) Select Bay for Modular FDD or CD-ROM
Ports	Serial, parallel, PS/2 keyboard, PS/2 mouse, DC in, SVGA monitor, FDD port, lock slot, joystick/MIDI, audio line-in, line-out, headphone, microphone
Other features	Designed for Windows 95 and PNP; Hot Docking Support

3. Slot supports two Type II PC Cards or one Type III PC Card.

4.Requires the purchase of appropriate cellular cable: 991-40042.

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POWER

60W Autosensing External AC Adapter	5.51"L x 2.95"W x .98" --- .95 lbs. (Part#:NW2444U)		
Input (Voltage/Frequency)	100-240V; 50-60Hz		
Output (Voltage/Amps)	15 VDC; 4.0A (max)		
Battery Type: Li-Ion (3.6V 1200mAh, 12 cells)	Yes: Part# PA2445UR (2.83"W x 1.14"H x 6.61"L) -- 1.1 lbs.		
Battery Life	<u>One battery</u>	<u>Two batteries</u>	
Full Power mode	3+ hrs.	6+ hrs.	
Low Power mode	4 hrs.	8 hrs.	
Recharge Time: Main Battery ⁵ (Computer Off/On)	<u>Notebook alone</u> 2.5 hrs./3.2 hrs.	<u>Docked In Port Replicator</u> 3.8 - 4.0 hrs./5-12 hrs.	<u>Docked In Desk Station</u> 4-5 hrs./ 6-12 hrs.
Power Savings	MaxTime®; APM v.1.2 BIOS support; CPU Sleep mode; Display Auto Off LCD Brightness switch (software); HDD Auto Off		

DIMENSIONS

WEIGHT (includes 1.1 lbs. battery)⁶ 12.0"W x 9.4"D x 2.1"H
 7.6 lbs. (with FDD installed); 7.9 lbs. (with DVD-ROM installed)

BUNDLED SOFTWARE: Windows 95; RingZero RingCentral V1.0 telephony application; Microsoft VidCap software; Puma Intellisync 97; Video Brush scanning software; Microsoft Netmeeting 2.1; Intel Proshare 2.0; Microsoft Internet Explorer 3.02 (Export Version); Yamaha Station; Mediamatics MPEG Arcade Pak; Maxtime; HW Setup; Fn-esse

Included on CD: Internet Explorer 4.0 (Export Version); LANDesk Client Manager 3.2, Intel Video Interactive (32-bit,v.4.1) On-line registration; Online manual. *Units ship with Windows95 Companion CD and Enhanced Recovery CD.*

SECURITY Lock slot, Password:power-on, supervisor, HDD access, Docking station eject

WARRANTY 3 YR Parts & Labor (battery 1 year)

ENVIRONMENTAL SPECIFICATIONS

	<u>Operating</u>	<u>Non-operating</u>
Temperature:	41°F (5°C) to 95°F (35°C)	-4°F (-20°C) to 149°F (65°C)
Thermal Gradient 20° C per hour (max.)	--	--
Relative Humidity: Operating	20% to 80% non-condensing	10% to 90% non-condensing
Altitude: Operating	-197 to 9,843ft. (-60 to 3000m)	-197 to 32,808ft. (-60 to 10,000m)
Shock: Operating	10G (11ms); 1.5G w/CD-ROM installed	60G (11ms); 50G w/CD-ROM installed
Vibration: Operating	0.5G; 0.25G (5~500Hz) w/CD-ROM	1G; 1G (5~500Hz) w/CD-ROM

5. Recharge time may vary depending on condition of battery, and consumption of power for function performed during recharge: eg. use of LCD, HDD/CD-ROM, sound and modem, CardBus card in Port Replicator or PCI card in Desk Station V Plus. 6. Optional 2nd battery PA2446UR weights 1.15 lbs.