Product Support Bulletin

Subject: Common Questions and Answers for the Epson Endeavor 486C Computers

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GENERAL

Q1. What is the Epson Endeavor 486C computer?

A. The Epson Endeavor 4SX/25C, 4DX/33C and 4DX2/50C represent an enhancement to the new Endeavor family of entry-level computer products. Along with an affordable price, the new Endeavor series offers Intel™ i486™ processing power and upgrade solutions for a wide range of computing applications. In addition to the performance that these systems offer, users will appreciate the convenience of a small footprint, and complete system integration. Key features include:

- Choice of Intel 486SX/25, 486DX/33 or 486DX2/50 processor
- Built-in math coprocessor (4DX/33 and 4DX2/50); math coprocessor support in the 4SX/25 model
- Intel OverDrive™ Support (4SX/25 and 4DX/33)
- Zero Insertion Force (ZIF) socket for easy processor upgrades
- 8KB internal cache (built-in CPU)
- 0KB SRAM secondary cache installed on main system board; upgradable up to 256KB using 8KB or 32KB SRAM (optional)
- Small-footprint case incorporates
  - Four ISA 16-bit option slots (three full-length, one third-length)
  - Three drive bays; two external, one internal
  - Built-in Super VGA video support
  - Two serial, Bi-directional Parallel, Mouse and Keyboard ports
  - Built-in floppy and IDE hard drive controller/interface
- Choice of 120MB Quantum, 170MB Conner or 240MB Quantum Hard Disk Drive

What is the Epson Endeavor 486C Computer?
(continued)

- 4MB Base RAM, parity checked. 0 wait states; expandable to 36MB with SIMMS on main board
- VGA video (512KB on main board; upgradeable to 1 MB) Cirrus logic GD5442 video display controller
- Alternate VGA feature connector for additional graphics capabilities
- System and video BIOS can be relocated in shadow RAM for increased system performance
- ROM based system SETUP
- Password security
- Virus warning abilities included in BIOS
- Bundled with MS-DOS® 6.0, Microsoft® Windows™ 3.1 and a mouse (MS-DOS and Windows are pre-loaded on the hard drive)

Q2. What is the target market for this computer?

A. The Epson Endeavor 4SX/25C, 4DX/33C and 4DX2/50C computers are targeted at the following markets.

- Home office and small-business users seeking maximum performance at today's low prices.
- Work at home users who need an efficient and cost-effective system that's compatible with all their business software.
- Businesses in search of a low-cost network node that can handle current and future applications.

Q3. What interfaces and controllers are integrated on the motherboard?

A. The Epson Endeavor 4SX/25C, 4DX/33C and 4DX2/50C computers come standard with a built-in IDE hard disk drive interface, a floppy disk drive controller, a super VGA video adapter, alternate VGA feature connector, two serial interfaces, a bi-directional parallel interface, a PS/2 style mouse port and PS/2 style keyboard port all integrated on the main system board.

Q4. What /eve/s of password security are provided with the Epson Endeavor 486C computer?

A. The Endeavor 486C series of computers offer two levels of password security to ensure that unauthorized users do not change the system's SETUP configuration or obtain access to the system.

- Password security to obtain system access
- Password security to access SETUP menus

CPU

Q5. What microprocessors are being offered with the Epson Endeavor 486C series computer?

A. The Epson Endeavor 4SX/25C comes standard with an Intel™ i486SX™ microprocessor (CPU) running at 25MHz. The Epson Endeavor 4DX/33C comes standard with an Intel™ i486DX™ CPU running at 33MHz. The Epson Endeavor 4DX2/50C comes standard with an Intel™ DX2/50™ CPU running at 50MHz. Common features of the different microprocessors include backward compatibility with the 8088, 8086, 80286, and 80386 CPUs and a built-in 8KB cache. For system flexibility, the built-in CPU cache can be disabled via SETUP.

The™ i486DX/33 and DX2/50 CPUs contains an on-chip numeric coprocessor to increase the speed of floating point operations. This coprocessor is backward compatible with the 387DX and 387SX math coprocessors and complies to ANSI/IEEE standard 754-1985.

Q6. What processor upgrades are available in the Epson Endeavor 486C computer?

A. The Epson Endeavor 4SX/25C computer can be upgraded by installing an Intel™ i487SX™ or Intel Overdrive CPU in the processor socket. Both of these CPUs improve system performance by adding a numeric coprocessor to speed up floating point calculations. The Intel Overdrive CPU doubles the processor's internal speed to further increase system performance.

The Epson Endeavor 4DX/33C computer can be upgraded by installing an Intel Overdrive CPU in the processor socket. Like the Intel Overdrive CPU for the 4SX/25, the Intel Overdrive CPU for the 4DX/33 also doubles the processor's internal speed to further increase system performance.

BIOS

Q7. What BIOS comes with the Epson Endeavor 486C computer?

A. The Epson Endeavor 486C series computers incorporate an AMI/Seiko Epson BIOS that contains both the system and video BIOS. This BIOS is contained in a single EPROM device that is installed in a pluggable socket on the computer's main system board (motherboard).

Q8. How is SETUP accessed and what information is contained in setup?

A. To access SETUP, press the "DEL" key after POST (Power On Self-Test) completes the memory test but before the computer loads the operating system. There are two pages of setup information.

STATUS PAGE
- System Date and Time
- Floppy Drive Type Selection A: B: (360K, 1.2M, 720K, 1.44M and None)
- HDD Drive Type Selection C: D: (Type Number or User-Defined)
- Video Type (Not Installed, CGA80, VGA/PGA/EGA, CGA40, and Mono)
- System Speed (Fast/Slow)
- Boot Sequence (Drive A,C or C/A)
- Floppy Seek (Enable/Disable)
- Virus Protection (Enabled/Disabled)

OPTIONS PAGE
- Shadow Setup (System, Video or System/Video)
- Keyboard Setup (Test, Numlock On/Off, Rate, and Delay)
- Peripherals Setup
  Serial Port Address
  3f8h, 2f8h IRQ4/IRQ3 (Com1/Com2, Com1+Com2) or (Disabled)
- Parallel Port Address
  378h, 0278h (Uni-LPT1/2 Bi-LPT1/2), or (Disabled)
- PS/2 Mouse (Enabled/Disabled)
- On-B/D FDC Select (Enabled/Disabled)
- IDE HDC Select (Enabled/Disabled)

VIDEO

Q9. What video adapter comes standard (built-in) with the Epson Endeavor 486C computer?

A. The Epson Endeavor 486C series computers utilize a Cirrus GD5422 VGA graphics controller as its built-in video adapter. These computers include 512KB of video memory which may be upgraded to a full 1 MB of memory by installing pluggable memory chips.

The Cirrus VGA graphics controller is 100% hardware and BIOS-compatible with IBM® VGA display standards.

Q10. What type of RAM chips are used to upgrade the video memory to a full 1MB on the Epson Endeavor 486C computer?

A. Increasing the Epson Endeavor 486C series computer's video memory requires four 256K x 4 bit, 70ns 20-pin DRAM ZIP (Zig-zag lnline Package) chips. These chips install on the computer's main logic board in sockets VM00, VM01, VM02 and VM03.

To ensure compatibility, we have tested the following DRAM ZIP chips and confirmed that they operate properly when upgrading the video memory:

Supported Video ZIP Chips

MANUFACTURER	PART NUMBER
Goldstar®	GM71C4256AZ-70
Micron®	MT4C42562-6, MT4C4256Z-7
Samsung®	KM44C256CZ-6, KM44C256CZ-7

Q11. What video modes are supported by the Epson Endeavor 486C computer?

List below is a table that shows the Epson Endeavor 486C series computer's supported video modes and the memory requirements to obtain each mode:

Mode	Resolution	Colors	Memory Rewired
VGA	640 x 480	16	512KB
Extended, 512KB memory required	640 x 480	256	512KB
	640 x 480	32,768*	512KB
	640 x 480	65,536*	512KB
	800 x 600	16	512KB
	800 x 600	256	512KB
Extended, 1 MB memory required	640 x 480	16,777,216**	1MB
	800 x 600	32,768*	1MB
	800 x 600	65,536*	1MB
	1024 x 768	16	1MB
	1024 x 768	256	1MB
	1024 x 768	256	1MB

Note: "*" indicates a Hi-Color mode and "**" indicates True Color mode.

Q12. What software video drivers are provided with the Epson Endeavor 486C computer?

There are two diskettes included that feature video drivers for many popular software programs and also include video utilities. The key drivers included are:

Lotus 1-2-3 Rel. 2.x,3, Lotus Symphony Rel. 2.0, Windows 3.1, WordPerfect 5.1
The VGA video utilities included are: CLMODE and SETRES. These utilities are useful when customizing system settings such as video modes or refresh rates.

MEMORY

Q13. What is the standard memory configuration and maximum amount of system memory that can be used in the Epson Endeavor 486C computer?

A. The Epson Endeavor 486C series computers come standard with 4MB of system memory. This memory is soldered on the main system board.

There are two SIMM sockets on the main system board. These sockets accept 1 MB, 4MB or 16MB SIMMs. Optional SlMMs may be purchased to increase the computer's memory up to a maximum of 36MB.

NOTE: The SlMMs used must be 70ns or faster, 32 or 36-bit, 72-pin, fast page mode type.

Q14. What are the valid system memory configurations for the Epson Endeavor 486C computer?

A. The following table shows the possible SIMM configurations for the Epson Endeavor 486C series computers; do not install memory in any other configuration.

SIMM 1	SIMM 2	Total Memory
0	0	4MB*
1MB	0	5MB**
4MB	0	8MB**
1MB	4MB	9MB**
4MB	4MB	12MB
16MB	0	20MB**
1MB	16MB	21MB**
4MB	16MB	24MB**
16MB	16MB	36MB

* Standard memory on the system board

** SIMMS can occupy either socket

MEMORY (continued)

Supported SIMMs

Manufacturer	Description	Size	Original Manufacturer Part No.
Samsung	1M x 36	4MB	KMM5361000A(B,C)-7
	4M x 36	16MB	KMM536400A(B,C)-7
	256K x 36	1MB	KMM536256C-7
	1M x 32 (w/o parity)	4MB	KMM5321000BV-7
Goldstar	1M x 36	4MB	GMM7361000SG-70
	1M x 32 (w/o parity)	4MB	GMM7321000SG-70

CACHE

Q15. Can the Endeavor 486C computers include secondary cache?

A. Yes. The system board is capable of supporting up to 256KB of external SRAM cache memory.

There are ten CACHE sockets on the main system board. These sockets accept 8KB or 32KB SRAM chips installed in the sockets of BANK0 and BANK1. BANK0 must be filled before BANK1.

The SRAM type used for sockets U15 and U16 must match the type installed in the banks.

Cache size	Bank 0	Bank 1	U15	U16
0KB				
32KB	4x8KB	0	1x8KB	1x8KB
64KB	4x8KB	4x8KB	1x8KB	1x8KB
128KB	4x32KB	0	1x32KB	1x32KB
256KB	4x32KB	4x8KB	1x32KB	1x32KB

CACHE (continued)

Supported Cache Memory SRAM DIP Chips

Socket	Manufacturer	Original Manufacturer Part No.
U15, 16 (15-ns)	Alliance	AS7C256-15PC
	Winbond	W24257AK-15
	Samsung	KM68257BP-15
	Micron	MT5C42568-15
U17-20, 56-59 (20ns)	Alliance	AS7C256-20PC
	Winbond	W24256(7)AK-20
	UMC	UM61256-20
	Samsung	KM68257BP-20
	Micron	MT5C42568-15

(Build To Order)

Q16. What are installable options from Epson?

RAM
VIDEO RAM
SRAM
CHOICE OF FDD's
CHOICE OF HDD's
TBU
FAX MODEM
SCANNER I/F
MULTI-MEDIA
SCSI I/F

MASS STORAGE

Q17. What factory floppy and hard disk drive configurations are offered with the Epson Endeavor 486C computer?

A. The Epson Endeavor 4SX/25C, 4DX/33C and 4DX2/50C computers are available in three factory configurations. All three configurations come standard with a 1.44MB floppy disk drive.

The Epson Endeavor 486C series computers is built to customer's order by the factory.

LAN COMPATIBILITY

Q18. What local Area Networks have been tested on the Epson Endeavor 486C computer?

A. The system is tested and approved as Novell NetWare "Workstations" with the following Novell products:

Netware (v2.2)	NetWare 3270 LAN Workstation (v2.0)
Netware (v3.11)	OnLAN/PC (v1.3)
Netware Lite (v1.1)	NetWare Link/64 (v1.1)
DR DOS (v6.0)	NetWare Link/T1 (v1.1)
Novell Print Server (v1.21)	NetWare Link/X.25 (v1.00)
Netware Access Server (v1.3)	NetWare Asyn Remote Router (v1.2a)
LAN Workplace for DOS (v4.01)	NetWare Asyn Comm Server (v3.0)

NETWORK BOARDS TESTED

Q19. What Network boards have been tested on the Epson Endeavor 486C computer?

TEST PRODUCTS NAME	MANUFACTURER
Etherlink II	3Com
Etherlink III	3Com
Etherlink 16	3Com
IBM Token Ring Adapter 16/4	IBM
IBM Token Ring Adapter II	IBM
NE1000	Novell
NE2000	Novell
NE2100	Novell
RX NET	Novell
SMC ARCNET 190ST	SMC