

Product Support Bulletin

Subject: Proper Method for Running Benchmark and Diagnostics Programs

Date: 06/04/93

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PSB No: S-0158

Originator: MWT

This bulletin describes the proper method for running any benchmark or diagnostics programs. This applies to any computer system.

In most cases, the computer should be started using an MS-DOS boot diskette that's 'clean' - in other words, one with no CONFIG.SYS or AUTOEXEC.BAT files. The appropriate executable can then be run, either from diskette or hard drive.

There will be some exceptions to the above rule. In attempting to benchmark or troubleshoot any add-on that requires a device driver (CD-ROM, local area network, etc.), obviously the necessary device driver(s) must be loaded. Also, some programs will require a minimum number of FILES or BUFFERS to be defined in the CONFIG.SYS file. Such programs will usually display this requirement if they are run without the necessary CONFIG.SYS file.

For the most consistent results, use the absolute minimal boot configuration that's allowed by the hardware being tested.

Product Support Bulletin

Subject: Virus Contamination of EISA Series Reference Diskette

Date: 12/04/92

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PSB No: S-0149

Originator: KAS

The purpose of this bulletin is to notify you that some copies of the EISA Series Reference Disk #2 on 5.25" media may be contaminated with Michelangelo virus. This virus has not been detected on 3.5" media or other diskettes.

This virus has been verified in the boot sector of revision 1.04 of the Reference Disk #2 on 5.25" media. Please note that it is necessary to boot from this diskette to cause infection of the system's hard disk drive. Normal procedure is to boot only from Reference Disk #1.

NOTE: Infection of the system's hard disk drive may cause corruption of the hard disk drive FAT file, if the virus is activated on Michelangelo's birthday, March 6. This may result in an inability to access data on the hard disk drive.

A virus-free copy of Disk #2 is available on the Epson Product Support RBBS. It is in the EISA File Library and is called REF2_N92.EXE. This file is a self-extracting file. It should be downloaded with protocol (such as XMODEM) and then executed.

Product Support Bulletin

Subject: Installing OS/2 2.0 on Epson EISA Series Computers

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PSB No: S-0144
Originator: MWT

The original VGA/SVGA display driver (BVHSVG.A.DLL) as shipped with the retail distribution of IBM's OS/2 2.0 is known to cause failures when used with a display adapter implementing the Western Digital WD90C30 or WD90C31 VGA controller and 1MB or more of VRAM. Note that this is the configuration of the Epson VGA Option Kit display adapter (product code A808941). The symptom is that when OS/2 is installed and the system is rebooted, the OS/2 logo screen is displayed with the message "Loading, please wait...." and then the screen goes blank and the error code "C0000005" is printed in the upper left hand corner. The system is halted.

IBM has since released via their National Support Center Bulletin Board System (NSC BBS, (494) 8356600) a revised version of the display driver that corrects this problem. This file is used to replace the original BVHSVG.A.DLL file. How this is done depends on which file system - FAT or HPFS - was specified during the OS/2 installation.

FAT

Once the OS installation is complete, insert a DOS bootable diskette in drive A that also contains the updated BVHSVG.A.DLL file and press Enter to re-boot. At the DOS A: prompt, log onto the C drive and enter the command "CD \OS2\DLL" to change to the driver directory. Then enter "REN BVHSVG.A.DLL BVHSVG.A.OLD" to preserve the original driver. Now enter "COPY A:*.DLL" to copy the updated driver. When the copy is completed, remove the diskette and press Ctrl-Alt-Del to start OS/2.

HPFS

Once the OS installation is complete, insert the OS/2 Installation diskette in drive A and press Enter to re-boot. It will load the OS/2 kernel, display the IBM logo screen and prompt you to insert Diskette 1 and press Enter. Do so now. It will then display the OS/2 logo screen and the message "Loading, please wait....". After several moments it will change to the "Welcome to OS/2" screen. Press Escape. The screen will clear, the message "Operating System/2 Command Interpreter Version 2.0" will display and the OS/2 prompt [A:\] will appear. Remove the Diskette 1 and insert the diskette with the updated driver file.

Log to the C drive and enter the command "CD \OS2\DLL" to change to the driver directory. Then enter "REN BVHSVGA.DLL BVHSVGA.OLD" to preserve the original driver. Now enter "COPY A:*.DLC" to copy the updated driver. When the copy is completed, remove the diskette and press Ctrl-Alt-Del to start OS/2.

SUMMARY

The above procedures have been used to successfully install OS/2 on both **EISA** Series computers (desktop and tower), using all three CPU boards. Note that it requires either BIOS version 1.06 (486SX/25 or 486DX/33) or 1.07 (4860X/50), both of which are available from file library BIOS on the Epson BBS. It has been installed on systems with 4MB of RAM as well as with 12MB of RAM.

Product Support Bulletin

Subject: EISA Series - Questions and Answers

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GENERAL

Q. What is EISA? And what is the Epson EISA Series?

- A. EISA stands for Extended Industry Standard Architecture. This is a 32-bit superset of the 16-bit ISA, or AT, expansion bus architecture. It is compatible with 8-bit (XT) and 16-bit (AT) expansion boards, as well as 32-bit EISA expansion boards. Due to features such as the increased bandwidth and bus-mastering capability, EISA expansion boards provide improved performance and throughput. This is particularly important for I/O intensive peripherals such as network interface cards, video display adapters and hard disk drive controllers.

The Epson EISA Series consists of both a desktop and a floor-standing or tower chassis, capable of accepting a number of different processor boards. This allows either system to be tailored for exact, specific needs without compromise.

Q. What's the difference between the desktop and the tower system? How are they alike?

- A. The desktop system has five EISA expansion slots, a 235 watt power supply and can accept up to five mass storage devices, with three being externally accessible. The tower has eight EISA expansion slots, a 300 watt power supply and can accept up to six mass storage devices, with four being externally accessible. Note that all five expansion slots in the desktop support bus-mastering boards, whereas only slots 1 through 5 and slot 8 in the tower support bus-mastering.

Otherwise, the two systems are exactly alike - they use the same processor boards, SIM modules, disk drives, etc.

Q. What is bus-mastering?

- A. Bus-mastering is a method for letting a peripheral device take control of the system. Without bus-mastering, a peripheral uses up CPU resources for various services. A bus-mastering device is referred to as being "intelligent" - that is, it has on-board control circuitry that lets it perform the intended function without accessing the CPU. The EISA architecture also provides "fair arbitration", insuring that no one device monopolizes system resources.

Q. What interfaces are provided with each system?

- A. Each system includes a floppy disk drive interface (up to two drives supported), an IDE hard disk drive interface (also supporting up to two drives), a parallel port, two serial ports and ports for the PS/2-style keyboard and mouse.

Q. Is a video adapter included?

- A. No. Due to the wide range of applications that either system may be used for, Epson decided to let each customer pick their own display system. For example, if the tower unit is being used as a file server, you wouldn't need the same display capabilities as you would with the desktop unit being used as a CAD/CAM workstation. Epson does have a VGA Option Kit available. It comes with 1 MB of video RAM, the Sierra Hi-Color RAMDAC and supports resolutions up to 1024 by 768 by 256 colors, interlaced and non-interlaced.

CPU/MEMORY

Q. What processor boards are available?

- A. There are currently two processor boards:

486SX/25 (25 MHz); 8KB internal cache memory; sockets for optional Weitek WTL4167 and Intel 80487SX math coprocessors

486DX/33 (33 MHz); 8KB internal cache memory; 64KB Intel 82485MA-33 Turbocache module (write-through, two-way set associative); socket for optional Weitek WTL4167 math coprocessor

Q. Will the 486SX/25 processor board work with the new Intel OverDrive chip?

- A. Yes. It installs in the 80487SX socket and provides a 50 MHz internal clock for the CPU, as well as implementing the math coprocessor circuit.

Q. What other processor boards will be available?

- A. A 486DX/50 (50 MHz) processor board will be available in the second quarter of 1992. And, because of the modular design, future enhancements can be quickly implemented as CPU technology advances.

Q. What's the standard memory configuration? What's the total memory capacity?

A. Both systems come standard with 4MB of RAM, expandable using 1, 4 or 8MB SIMMs up to a maximum of 64MB. The SIMMs must be 70ns, 72-pin (36 bit), gold-leaded fast page mode type.

Q. What are the allowable SIMM combinations?

A. SIMMs may be installed in many different ways. The eight SIMM sockets are divided into two banks; bank 0 consists of sockets U12 through U15 and bank 1 consists of sockets U16 through U19. Logically, each bank is made up of two rows - bank 0 has rows 0 (U12/U13) and 1 (U14/U15), and bank 1 has rows 2 (U16/U17) and 3 (U18/U19). The following guidelines apply:

All SIMMs in a row must be the same size

The exception to the previous guideline is that any row can be left empty

MASS STORAGE

Q. What factory drive configurations are available?

A. Both the desktop and the tower systems are available with either a 5.25", 1.2MB floppy disk drive (FDD) or a 3.5", 1.44MB FDD. There is no factory hard disk drive (HDD) configuration.

Q. What disk drive options are available?

A. Any of the Epson supplied IDE HDDs (40MB, 100MB/120MB and 200MB/240MB) as well as a high-performance 340MB SCSI HDD and separate host adapter kit. The SCSI host adapter kit also includes high-performance drivers for DOS, OS/2, UNIX and Novell NetWare. Of course, one additional FDD (either 3.5" or 5.25") may also be installed.

Q. What about backup options?

A. The Epson 250MB Tape Backup Unit (TBU) can be used in either system, even if there are two FDDs installed.

BIOS/SYSTEM SOFTWARE

Q. What BIOS is used in the EISA Series?

A. The system BIOS was jointly developed by Phoenix Technologies and Seiko Epson. This collaboration insures full compliance with the EISA specification as well as an extremely high level of compatibility with existing hardware and software products.

Q. How is the BIOS physically and logically configured?

A. Physically, it's stored in two separate components - a 64KB EPROM and a 64KB flash memory chip. Logically, it's divided into the "loadable" BIOS (EPROM) and the processor-dependent BIOS in flash memory. The loadable BIOS contains the code that controls the very low-level power-on functions and insures (or loads) the correct processor-dependent BIOS. This code is extremely stable and should not require any changes. The flash BIOS contains the higher-level system control code. This code would change if the processor board was upgraded or if a BIOS revision became necessary.

Q. What is flash memory?

A. Flash memory is a relatively new type of non-volatile memory. Instead of an EPROM which has to be physically removed and erased using a strong ultraviolet light source, the entire contents of flash memory can be electrically erased and then incrementally reprogrammed with the component still installed.

Q. How is the flash memory reprogrammed?

A. If the loadable BIOS detects a processor board ID different from the loadable BIOS, or if the flash BIOS checksum is bad, the loadable BIOS will prompt the user to load the correct BIOS from the Reference diskette. The user may also initiate this reprogramming by running the System Configuration utility and setting the "System BIOS update" option to ENABLED. This would allow a new BIOS revision to be installed quickly and easily, without opening the computer.

Q. How would I get a BIOS upgrade file?

A. Either from an Epson Customer Care Center or by downloading it from the Product Support Bulletin Board System (BBS) at (310) 782-4531.

Q. Is MS-DOS included?

A. No. All current Epson computers are sold with no operating system included. This provides the greatest degree of flexibility for our customers. Of course, any one of three MS-DOS versions (3.30, 4.01 and 5.00) may be purchased as an option.

Q. Is any software included?

A. Yes. Microsoft Windows 3.0a, Bitstream Facelift and Asymetrix DayBook is included, as well as the EISA Series Reference diskettes. The Reference diskettes provide the EISA Configuration utility, the Diagnostic program and a variety of configuration files for ISA expansion boards.

Early in the production cycle, the Windows bundle will be upgraded to version 3.10. Anyone that purchased one of the EISA Series systems after April 6, 1992, that included Windows 3.0a will have an upgrade path from Epson to version 3.10. For details on the upgrade, please call the Customer Support Center at (800) 922-8911.