



Figure 1. Sony Vaio

Specifications

Processor

- Model PCV-70: Intel Pentium 166MHz
- Model PCV-90: Intel Pentium 200MHz

Memory

- 32MB EDO RAM standard, expands to 128MB

I/O Expansion Slots

- Three PCI slots, two ISA slots, one shared PCI/ISA slot

Diskette Drive

- One 3.5", 1.44MB diskette drive

Integrated Features

- Two universal serial bus interfaces.
- Super I/O controller.
- Audio.
- Dual channel PCI bus mastering IDE.
- Video.
- SRS sound.
- Parallel port.
- Keyboard.
- Mouse.
- Floppy controller.
- CD-ROM.

Internal Expansion Bays

- Two drive bays

I/O Architecture (Bus's supported)

- PCI/ISA

Power Supply

- 200 Watts

Diagnostics

- Normal Post Diags performed on power up of system.
- For Advanced Diags use a PC Diagnostic Utility.
- Troubleshoot according to errors found in test.
- The Sony "Happy Sound" that you hear during a warm boot is a good test that the hardware is operating properly.
- On a cold boot, the monitor must be turned on first before the sound is heard.

CMOS Access

- QAPlus/FE

Tools and Software Requirements

- Flat bladed screwdriver or Torx T-15
- Needle nose pliers
- Anti-static wrist strap
- 25 pin and 9 pin loopback plugs
- Diagnostics and formatted blank diskettes

System Board, Jumper J10E1

Configuration Jumper Settings

Jumper	Setting	Function
J10E1		
Section A		
	1-2 *	Password feature on
	2-3	Password feature off
	4-5 *	CMOS is saved
	5-6	CMOS is cleared
Section B		
	1-2 *	BIOS setup access on
	2-3	BIOS setup access off
	4-5 *	BIOS recover is normal
	5-6	BIOS recover is on
Section C		Processor speed ratio ¹
Section D		Host bus speed ¹

* Default, ¹ Tables for these sections follow.

System Board, Jumper J10E1

Processor/System Board Speed Settings

CPU Freq.	Host Bus Freq.	BUS Freq. Ratio	PCI Freq.	ISA Freq.	Jumper Settings J10E1-C	Jumper Settings J10E1-D
200	66	3x	33	8.33	1-2 & 5-6	1-2 & 5-6
166	66	2.5x	33	8.33	1-2 & 5-6	2-3 & 5-6
150	60	2.5x	30	7.5	2-3 & 4-5	2-3 & 5-6
133	66	2x	33	8.33	1-2 & 5-6	2-3 & 4-5
120	60	2x	30	7.5	2-3 & 4-5	2-3 & 4-5
100	66	1.5x	33	8.33	1-2 & 5-6	1-2 & 4-5
90	60	1.5x	30	7.5	2-3 & 4-5	1-2 & 4-5
75	50	1.5x	25	6.77	2-3 & 5-6	1-2 & 4-5

IRQ Settings

- IRQ9 is the only IRQ that is user available. All other IRQs are being utilized by Sony.

Removal Procedures

- Turn off the computer and any peripheral devices.
- Disconnect AC power cord from outlet and system.
- Disconnect all peripheral devices from the computer.

How to remove left side panel:

- Push the rear latch to release the left side panel.
- Slide the panel back until it stops.
- Pull the panel straight out to remove it.

How to remove the rear panel:

- Push the tabs to unsnap and remove the rear panel.

Field Replaceable Units

Memory	OEM Part
16MB EDO RAM	1-759-335-11

Internal Hard Drives	OEM Part
PCV-70 2.1GB HDD	1-759-330-11
PCV-90 2.5GB HDD	1-759-331-11

System Boards	OEM Part
ATX System Board	1-589-930-11

Processors	OEM Part
PCV-70 ICP54C-166	8-759-444-30
PCV-90 ICP54C-200	8-759-444-31

CD-ROM Drives	OEM Part
CD ROM 8x	8-427-081-50

Diskette Drives	OEM Part
FDD 3 mode	8-426-409-05

Miscellaneous	OEM Part
AC cord	1-777-786-11
Mouse	1-759-290-11
Keyboard	1-759-289-11
Power unit	1-468-163-11
Modem	1-589-931-11

System Notes:

Contract Type:

The contract for this machine is a **labor only** contract. Sony ships the parts second day service. You must arrive within a two hour window prior to DF time. No CC expect for directions. Any delay notify ROC T/S from 888-476-6972, Opt. 8. If no answer call Sony. Forms with part must be completed and returned per instructions. Package used part in a two way box, affix label and call UPS for pickup at user location. Use contract # TSS020, SCO1, write the full serial number in the OEM serial number field, the Sony part number and model number in the comments field. All defers must be done by the ROC. Any/all out of scope work must have HD approval and individual QSARs.

Standard Operating System:

The standard operating system is Windows 95.

Startup Problems:

The computer may start in modes that indicate that there is a problem. The modes are:

- Safe Mode
- Hang Up Mode
- An error message box may open
- Something unexpected may happen

Startup Problems Overview:

The differences between a hardware, software, or a CMS setup boot problem at start up are indicated by the following signs:

- If the computer **does not** come up with a "OS Load in Progress" message the problem may be CMS or hardware related.
- If the operating system begins to load and an error comes up that states "OS Load in Progress" this indicates that the problem is software related.

OS Files Startup Problems:

- OS startup problems are normally related to a damaged or missing driver or a set of files that the machine needs are no longer where they should be on the hard drive.
- The most important files to the system are the **MSDOS.SYS, CONFIG.SYS, AUTOEXEC.BAT, WIN.INI, SYSTEM.INI, SYSTEM.DAT** and **USER.DAT** files. It is important that you verify that these files are not damaged and do not contain any errors.

Safe Mode Boot:

- A safe mode boot is usually a temporary condition that is caused by an error occurring during the previous startup process. Safe mode boots can be corrected sometimes by restarting the computer.
- The OS may begin in the Safe Mode if a problem is detected during startup. It is important that the startup process be completed before trying to restart the system.
- Some safe Mode bypasses involve booting with the following files only to minimize the number of drivers loading and to reduce overall system overhead. These files are:
 - **CONFIG.SYS**
 - **AUTOEXEC.BAT**
 - **[BOOT]** and **[386ENH]** sections of **SYSTEM.INI** file.

Troubleshooting with Boot up Options

If the unit always starts in the Safe Mode or does not complete the startup sequence properly, this may indicate that certain driver files are corrupt or missing. The following is a list of alternative boot options to try should this occur:

To access boot up options:

- Turn on the computer.
- Press F8 when the message "OS Load in Progress" appears.
- An option menu appears.

Step by Step Confirmation Boot Option:

- Select "Step-by-Step Confirmation" opt from boot menu
- Answer "yes" at each prompt, if an error occurs information about the error will be displayed as well as the line number on which the problem occurred.
- If the "Step-by-Step Confirmation" does not locate any problems use the "Logged" boot option next.

"Logged" Boot Option:

- Select "Logged" from the boot menu.
- The startup steps are then recorded in a file called **BOOTLOG.TXT**.
- This process records which step was successful or which step failed.

“Logged” Boot Option, continued:

- You can read or print BOOTLOG.TXT with any text editor.
- The information in the BOOTLOG.TXT file will contain comments regarding what happened during startup.
- Look for “LoadFail” statements specifically.

Booting with backup registries:

- Backup the SYSTEM.DAT, USER.DAT, SYSTEM.DA0, and USER.DA0 files to a floppy diskette.
- Rename the SYSTEM.DA0 and the USER.DA0 files to SYSTEM.DAT and USER.DAT.
- Restart the system.
- Restore the original files if the problem still exists.

Beep	Error Message	Description
1	Refresh failure	Memory refresh on motherboard is failing.
2	Parity error	Parity is not supported on this product.
3	Base 64KB memory failure	Memory failure in first 64KB.
4	Timer not operational	Memory failure in first 64KB or Timer 1 on motherboard malfunctioning.
5	Processor error	Processor generated an error
6	8042 - Gate A20 failure	Keyboard controller may be failing. BIOS can't switch to protected mode.
7	Processor exception interrupt error	The processor generated an exception interrupt.
8	Display memory read/write	System video adapter is either missing or its memory is faulty.
9	ROM checksum error	ROM checksum value does not match the value encoded in BIOS.
10	CMOS shutdown register Rd/Wrt error	Shutdown register for CMOS RAM failed.

Upgrading the Flash BIOS

The flash BIOS is upgraded with an FMUP disk. To create this diskette, double click on BIOS.BAT located in the CD's BIOS folder. Follow instructions as they appear on screen.

Flashing the BIOS IC:

- Create a BIOS FMUP diskette from the image CD.
- Boot the computer from the FMUP disk.
- Computer will boot BIOS upload/download check menu.
- Save the old BIOS file to disk.
- Load the new BIOS file to the computer.
- When complete, reset the CMOS memory IC.

Resetting CMOS:

- With the computer turned off, move jumper “A” from pins 4-5 to 5-6.
- Restart the computer.
- Shut down the computer when the message “NVRAM Cleared By Jumper” shows on screen.
- Move jumper “A” back to pins 4-5.
- Restart the computer.

Desktop Management Interface (DMI)

The Desktop Management Interface Control Panel is an Intel based application that displays comprehensive diagnostic and other information about the system and its components. The DMI control panel can access system information and manipulate its components. The DMI control panel is organized into four sections:

DMI Service Layer

- This section contains information on the DMI system itself. It does not contain information on troubleshooting the computer.

Intel PC System Description

- This section contains a lot of useful troubleshooting information about the system hardware components and peripherals. It is divided into 37 hardware groups that are self explanatory. Some of the groups have sub groups.

Intel Software Inventory Discovery

- This section contains software and operating system information that can be used to troubleshoot a unit.

PC Summary

- This section contains information on SIMM configuration, diskette drive, hard drive, CD ROM, printer and serial ports, as well as a hardware profile.