Packard Bell 470 M/Board

Specification

- **Battery :** 3.0V DC Lithium soldered on motherboard
- **BIOS :** 128 KB - Phoenix Flash BIOS V1.25
- **Bus Architecture :** PCI/ISA based system bus
- **Cache :** Write Back: 8 KB Internal (Level 1) Cache External (Level 2)
- **CPU :** Intel 486 processor
- **Interfaces :**
  - 1 DB-25 Parallel.
  - 1 RS232, DB-9 Serial.
  - 1 15-pin HD VGA.
  - 1 PS/2 Mouse.
  - 1 PS/2 Keyboard.
- **RAM :** 4 MB Standard on Motherboard 128 MB Maximum on Motherboard.
- **Speaker :** Piezoelectric soldered on motherboard.
- **UART :** Compatability Compatible with the 16C550 UART.
- **Video :** Built in Cirrus Logic Alpine GD5434

Jumpers

* Indicates default value.

Jumper	Pin/Setting	Description
J8 (JPWDCLR)	Closed Open	Clear Password * Normal Operation
J9 (Jcol)	Closed Open	* Colour Monochrome
J12 (Jirq9) IRQ 9 Enable	Closed Open	* Enable Disable
J13 (Jio) I/O Controller	1-2 2-3	Disabled * Enabled
J14 (Jbte) Boot Select	1-2 2-3	Boot Block * Normal
J15 (Jvgae) On-board VGA	1-2 2-3	Disabled * Enabled
J16 (Jpare) Parity Chcking	1-2 2-3	* Enabled Disabled
J23/J25 External Cache	Any 1-2 2-3	No Cache 128kb/512kb 256kb
J25 (Jcsize) Cache Size	Any OPEN 1-2 1-2, 3-4	No Cache 128kb 256kb 512kb
J27 (Jdak)	1-2	* Channel 1

	2-3	Channel 3
J30 (Jeride)	1-2 3-4	* Enabled Disabled
J31 (Jbte) Onboard Battery	3-4 OPEN	* Enabled Disabled
J32 (Jsel)	1-2 2-3	25MHz 33MHz
J33 (Jsx)	1-2. 3-4 5-6	All other CPUs * SX CPU
J34 (Jret)	1-2 3-4	Reserved * All CPU
J35 (Jldev)	CLOSED OPEN	* Enabled Disabled
J36 (j3.3v)	1-2, 3-4 3-5, 4-6	3.3v CPU * 5v CPU
J37 (Jmul) P24C Clock	No Jumper 1-2 3-4	* X3 Internal Clock Other Multiplier X2 Internal Clock
J40 (Jspk) Onboard Speaker	Closed Open	* Enabled Disabled

Note - J23 & J25 are ignored if no ext. cache is installed. Both jumpers must be set the same.

Battery

Uses a 3.6 volt lithium battery. Remove the jumper on pins 3-4 of J31 (Jbte) battery connector. The battery connector is keyed and will only go in one way.

Cache Upgrade

Tag and DB Ram are 15ns. Cache Ram is 20ns. See jumpers section for necessary jumper changes.

Cache Chip Type	128K	256K	512K
Tag SRAM (U50)	One 32Kx8	One 32Kx8	One 32Kx8
DB SRAM (U65/66)	One 64Kx1	One 64Kx1	One 64Kx1
Cache (U60,61,62,63,U46,47,48,49)	Four 32Kx8	Eight 128Kx8	Four 128Kx8

CPU Upgrades

Uses 237 pin type 3 socket. To open the upgrade processor socket, pull the tab/lever straight up from the side of the socket (closest to the back of the motherboard) and pull towards the front. The following jumpers are used :

Upgrade Socket	J32 CLK SPD	J33 CPU SX	J34 P24T OR S	J36 CPU V	J37 P24C MUL
80486SX-25	1-2	5-6	2-3	3-5,4-6	2-3

80486SX-33	2-3	5-6	2-3	3-5,4-6	2-3
80486SX2-50	1-2	1-2,3-4	2-3	3-5,4-6	2-3
80486SX2-66	2-3	1-2,3-4	2-3	3-5,4-6	2-3
80486DX-25	1-2	1-2,3-4	2-3	3-5,4-6	2-3
80486DX-33	2-3	1-2,3-4	2-3	3-5,4-6	2-3
80486DX2-50	1-2	1-2,3-4	2-3	3-5,4-6	2-3
80486DX2-66	2-3	1-2,3-4	2-3	3-5,4-6	2-3
80486DX4-100	2-3	1-2,3-4	2-3	1-3,2-4	2-3
P24T	1-2	1-2,3-4	2-3	3-5,4-6	2-3

The DX4-120 CPU requires a 486 system to be able to run at 40 MHz clock speed. This motherboard have not been qualified to run at that speed. However, they will run at 33 MHz which will yield 100 MHz DX4 speed.

Memory Upgrades

SIMM speed must be 70ns or faster. This system has four SIMM sockets which are labelled SIMM1, SIMM2, SIMM3 and SIMM4. The SIMM's are 1/2/4/8/16/32MB 72-pin and can be x32 or x36. The motherboard design does not require parity checking, hence x32 SIMMs can be purchased. The SMT memory is automatically disabled when all four SIMM sockets are occupied.

Speaker

Use an 8 ohm, .5 watt computer speaker. Remove the jumper on pins 3-4 of the J40 (Jspk) connector. The Speaker will connect to pins 1 and 4. (pin 1= +5 volts, pin 4= speaker ground)