Mac Portable

1MB soldered on, special socket for expansion card. No SIMM sockets. No virtual memory, no 32–bit addressing.

Standard Memory: Up to 5MB total can be installed using the expansion card. The card can hold 1, 2, 3, or 4MB. (Apple specifications allow up to 8MB, but 4MB is largest that was ever manufactured.) The original Portable uses static RAM, and the later, Backlit Portable uses Pseudo–Static RAM. The two types are not interchangeable, nor can they be used on any other Macintosh. Portable and PowerBook RAM are not interchangeable.

Virtual Memory: The 68000 CPU in the Mac Portable has no Memory Management Unit (which is required to run virtual memory). There is currently no upgrade path to provide an MMU to the Portable and there will probably never be one.

High Memory: Not available.

PowerBook 100

2MB soldered on, special slot for RAM expansion card. No SIMM sockets. No virtual memory, no 32–bit addressing.

Standard Memory: Up to 8MB can be installed using the expansion card. The card can hold 2MB, 4MB, or 6MB. The 6MB cards are available only from third parties (not Apple). PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy memory customized for a PowerBook 100. Some third parties offer special DRAM that works similarly to the TSOP. No extra software is required to address the full 8MB.

Virtual Memory: The 68000 CPU in the PowerBook 100 has no Memory Management Unit which is required to run virtual memory. There is currently no upgrade path to provide an MMU to the PB100 and there will probably never be one.

High Memory: Not available.

PowerBook 140, 145 and 145B

140, 145 has 2MB soldered on, 145B has 4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing (but not useful). The PowerBook 140 and 145 have identical memory configurations.

Standard Memory: Up to 8MB can be installed using the expansion card. The card can

hold 2MB, 4MB, or 6MB. The 6MB cards are available only from third parties (not Apple). PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy memory customized for a PowerBook 140/145/170. Some third parties offer special DRAM that works similarly to the TSOP. No extra software is required to address the full 8MB.

Virtual Memory: The 68030 CPU in the PowerBook 140/145/145B has a built–in Memory Management Unit. Therefore, the PB140/145/145B can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: 32–bit addressing is available, but since only 8MB can be installed it is not very useful. In most cases, it should be left Off.

PowerBook 160

4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing.

Standard Memory: 8MB can be installed using Apple's 4MB expansion kit, or up to 14MB can be installed using third–party expansion cards. PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy 85ns or faster RAM for a PowerBook 160/180. Some third parties offer special DRAM that works similarly to the TSOP.

Virtual Memory: The 68030 CPU in the PowerBook 160 has a built–in Memory Management Unit. Therefore, the PB160 can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: Up to 14MB of physical RAM may be installed in a PowerBook 160 using third party expansion boards. Use System 7 standard 32–bit addressing.

PowerBook 165c

4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing.

Standard Memory: 8MB can be installed using Apple's 4MB expansion kit, or up to 14MB can be installed using third–party expansion cards. PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy 85ns or faster RAM for a PowerBook 165c. Some third parties offer special DRAM that works similarly to the TSOP.

Virtual Memory: The 68030 CPU in the PowerBook 165c has a built–in Memory Management Unit. Therefore, the PB165c can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: Up to 14MB of physical RAM may be installed in a PowerBook 165c using third party expansion boards. Use System 7 standard 32–bit addressing.

PowerBook 170

2MB soldered on, 2MB expansion card installed. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing (but not useful).

Standard Memory: Up to 8MB can be installed using the expansion card. 2MB expansion card can be replaced with 4MB or 6MB cards. The 6MB cards are available only from third parties (not Apple). PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy memory customized for a PowerBook 140/145/170. Third parties offer special DRAM that works similarly to the TSOP. No extra software is required to address the full 8MB.

Virtual Memory: The 68030 CPU in the PowerBook 170 has a built–in Memory Management Unit. Therefore, the PB 170 can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: 32–bit addressing is available, but since only 8MB can be installed it is not very useful. In most cases, it should be left Off.

PowerBook 180 and 180C

4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing.

Standard Memory: 8MB can be installed using Apple's 4MB expansion kit, or up to 14MB can be installed using third–party expansion cards. PowerBooks use Pseudo–Static Thin Small–Outline Packages (or TSOPs). You must buy 85ns or faster RAM for a PowerBook 180C. Some third parties offer special DRAM that works similarly to the TSOP.

Virtual Memory: The 68030 CPU in the PowerBook 180/180C has a built–in Memory Management Unit. Therefore, the PB 180/180C can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly

reducing battery life.

High Memory: Up to 14MB of physical RAM may be installed in a PowerBook 180 using third party expansion boards. Use System 7 standard 32–bit addressing.

PowerBook Duo 210

4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing.

Standard Memory: Up to 12MB can be installed using Apple's 4MB or 8MB PowerBook Duo expansion kit, or up to 24MB can be installed using third–party expansion cards. RAM is unique for the PowerBook Duo (called low–power, self–refreshing dynamic RAM), and must run 80ns or faster.

Virtual Memory: The 68030 CPU in the Duo 210 has a built–in Memory Management Unit. Therefore, the PBD 210 can run virtual memory without requiring any additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: Up to 24MB of physical RAM may be installed in a PowerBook Duo 210 using third party expansion boards. Use System 7 standard 32–bit addressing.

PowerBook Duo 230

4MB soldered on, special slot for expansion card. No SIMM sockets. Virtual memory (but not recommended), 32–bit addressing.

Standard Memory: Up to 12MB can be installed using Apple's 4MB or 8MB PowerBook Duo expansion kit, or up to 24MB can be installed using third–party expansion cards. RAM is unique for the PowerBook Duo (called low–power, self–refreshing dynamic RAM), and must run 80ns or faster.

Virtual Memory: The 68030 CPU in the Duo 230 has a built–in Memory Management Unit. Therefore, the PBD 230 can run virtual memory without additional hardware. However, use of virtual memory while on battery power is not recommended because it requires the hard drive to constantly spin, significantly reducing battery life.

High Memory: Up to 24MB of physical RAM may be installed in a PowerBook Duo 230 using third party expansion boards. Use System 7 standard 32–bit addressing.

Macintosh Duo Dock

Video RAM: The Macintosh Duo Dock has 512K of 68–pin VRAM soldered on and 1 expansion slot in 1 bank. The standard 512K of VRAM is enough to support 8–bit color on all monitors up to and including the 16" color monitor. This can be expanded up to 1MB, which is enough to support 16–bit color on all monitors up to and including the 16" color monitor. The Duo Dock only supports 100ns 512K VRAM SIMMs.

Macintosh Duo MiniDock

Video RAM: The Macintosh Duo MiniDock has 512K of 68–pin VRAM soldered on. This is enough to support 8–bit color on all monitors up to and including the 16" color monitor.   512K is the maximum amount of VRAM that can be installed in the Duo MiniDock.