



## HOME

Dreamers'  
Wine

Robert  
Goddard

Space Age  
Visions

Cassini  
Mission

CATS  
Quest

Open  
Skies

Open  
Minds

Clothe  
Minds

Fellow  
Travelers

Distant  
Orisons

Enduring  
Erudition

Kayak  
Computer



## Adding a Second CPU to the HP Kayak

### Finding the Proper Voltage Regulator Module

In the various dual-processor Kayak models, each processor installed requires its own, separate voltage regulator module or VRM. The same is true of other computer models that use HP's Slot 1 or Slot 2 processor modules. The type of VRM you need depends on what processors you use. The table below contains all the information I've been able to find (as of January 2008) on the specifications of HP VRMs and which processors they match. The information is incomplete because HP no longer supports most of these modules.

### Voltage regulator modules available for HP workstations using Intel P2 & P3 processors

HP Part Number	Mfr. & Part Number	Input Voltage	Output Voltage	Output Current	For Processor(s)	Inventory Status
0950-2837	Delta 05S2020A	5VDC	2.8VDC	20A	Pentium II & III Katmai	No longer supplied <sup>1</sup>
0950-2847	Celestica 073-20742-45				P2/P3 Xeon	Not shown on Partsurfer
0950-2848	VXI/Celestica 073-20740-30	5VDC	2.8VDC	19A	Pentium II	No longer supplied <sup>2</sup>
0950-3066		5VDC	2.1-3.5VDC	10A	Pentium Pro	No longer supplied
0950-3188	Delta 05S2806A	5VDC	2.8VDC	6A	Pentium MMX P55C	Still carried by HP
0950-3265	VXI/Celestica 073-20740-30	5VDC	2.0VDC	19A	Pentium II	Replaced by 0950-2848 <sup>2</sup>
0950-3310		5VDC	2.8VDC	20A	Pentium II & III Katmai	Replaced by 0950-2837 <sup>1</sup>
0950-3363	Delta 05S2020U1	5VDC	2.8VDC	17A	Pentium III Coppermine	No longer supplied

## Voltage regulator modules available for HP workstations using Intel P2 & P3 processors

HP Part Number	Mfr. & Part Number	Input Voltage	Output Voltage	Output Current	For Processor(s)	Inventory Status
0950-3389	Delta 05S2020B	5VDC	2.8VDC	20A	Pentium II Xeon	No longer supplied

Fortunately, once you identify the type of module you need, you'll almost certainly be able to find it. Obsolete HP parts of all kinds are available from a host of distributors. In most cases, VRMs for Kayaks and computers of similar vintage are quite reasonably priced. If you can't find the specific module you need, or want a lower price, give eBay a try.

If you're in search of more information, your first stop should be [HP Partsurfer](#). Searching on the part number should get you the basic specs and a list of computers that use that module. HP's discussion forums can also be useful, although the information about Kayaks will be dated and takes some persistence to uncover.

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<sup>1</sup> Hewlett-Packard generally assigns its part numbers in sequence. It's unclear why a module with a higher part number (hence more recent) was replaced by an older one. More important, I haven't found the reason for the change. I have been able to determine that both types have the same ratings for input voltage, output voltage, and current. My best guess is that it has to do with the range of control voltages. This matters because 0950-2837 is rare, while 0950-3310 is fairly plentiful on the surplus market.

<sup>2</sup> I have no idea why these different VRMs carry the same manufacturer part number. I've seen it on several sites. If I had to bet, I'd bet the manufacturer's number goes with 0950-2848.