

Switch Settings for rp44x0/rx4640 FRUs

The rx4640 and rp44x0 platforms share many common FRU assemblies. Unfortunately, some of these common FRU assemblies have switches on them that must be set DIFFERENTLY when installed in the rx4640 vs. the rp44x0. As a result, there has occasionally been confusion and unnecessary repair time in the field whenever one of the following FRUs is replaced:

1. The "Augustus" I/O Baseboard FRU (P/N A6961-69201)
2. The "Diaton" CPU Extender FRU (P/N A6961-69007)

The "Augustus" I/O Baseboard FRU:

This assembly is the I/O Baseboard FRU and contains, among other things, the System Firmware/PDC code, the Mercury LBA chips, the CORE I/O modules, and the PCI slots. Also on this board are two "DIP Switch" banks of importance – switch bank "S5102" and "S5103". On each of these DIP switch banks there is one switch that needs to be checked/set whenever replacing an Augustus board. These switches control the following features:

- Core VGA port Enable/Disable (DIP Switch #1 on Switch Bank S5102)

This switch is used to either Enable (for the rp4640) or Disable (for the rp44x0) the Core VGA functionality. Improper setting of this switch will cause an rx4640 to not "see" an attached VGA console. Likewise, it may cause an rp4440 to "see" the VGA hardware when it should not. The core VGA port is not supported within HP-UX for the rp44x0.

Note that access to these switch banks is quite easy when the FRU is removed from the system. However, if the FRU is INSTALLED in the system it will be necessary to first remove the center fan module (module #1). Removing this fan module will reveal a cut-out area in the sheet metal of the Augustus board that allows access to the switch banks per the picture below.

- Itanium Processor Type Select (DIP Switch #4 on Switch Bank S5103)

This switch is used to select the type of Itanium2 processor that is installed on the CPU Extender board. To date, there are only 2 different types of Itanium2 processors supported on the rx4640 system:

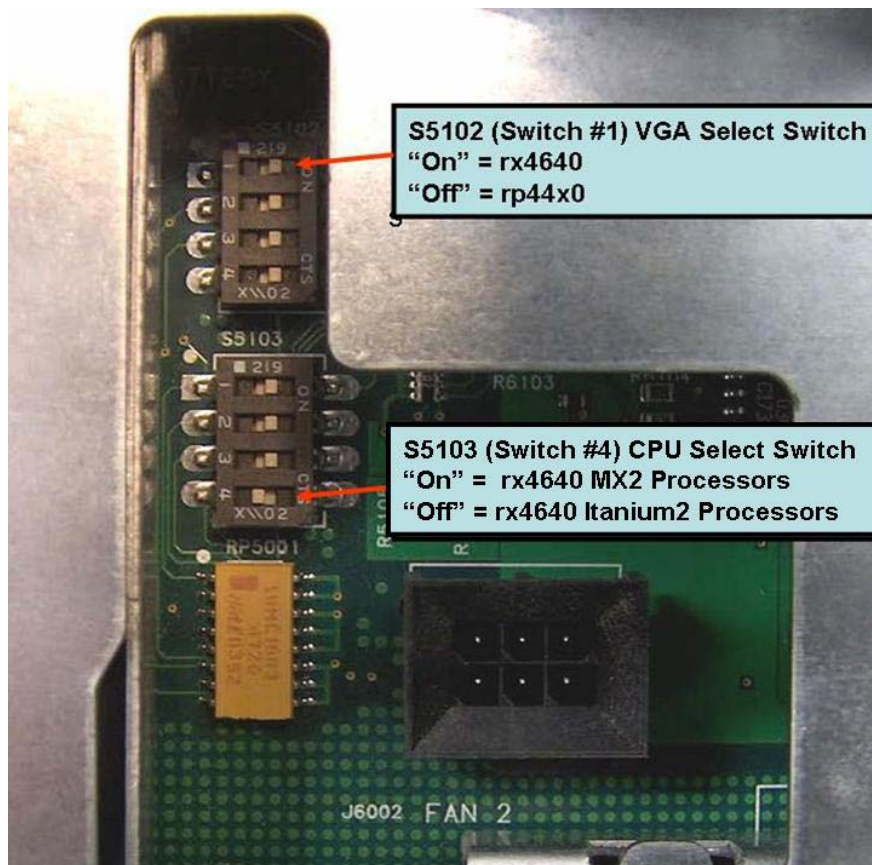
- "Madison/Mad9M" Processors ("Itanium2" processors). To select this type of processor, the switch should be in the OFF position.
- "Hondo" processors ("MX2" processors). To select this type of processor, the switch should be in the ON position.

Get this switch wrong on an rx4640 system and I am not sure what will happen but it probably will not be good. In all likelihood the system

will not enter into POST. The position of this particular switch is a "don't care" for the rp4440 because it only utilizes PA-RISC processors.



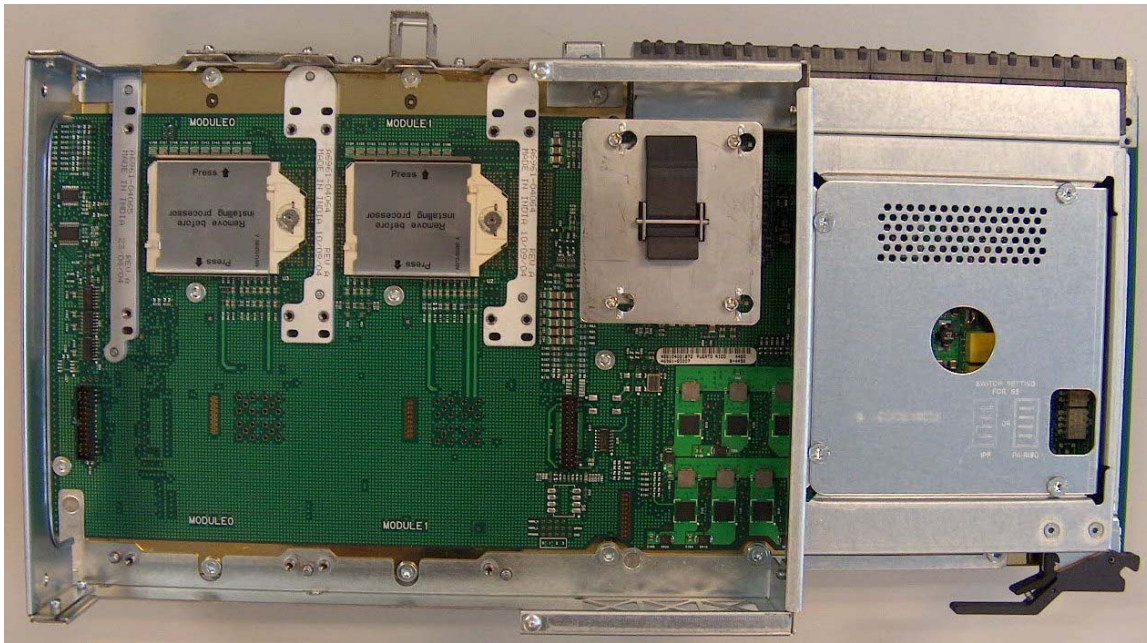
Once you gain access to the switch banks, the picture below will show you which switch bank and dip switch performs which function in which position. Note that the "other" dip switches are for factory use only and should be in the "ON" position.



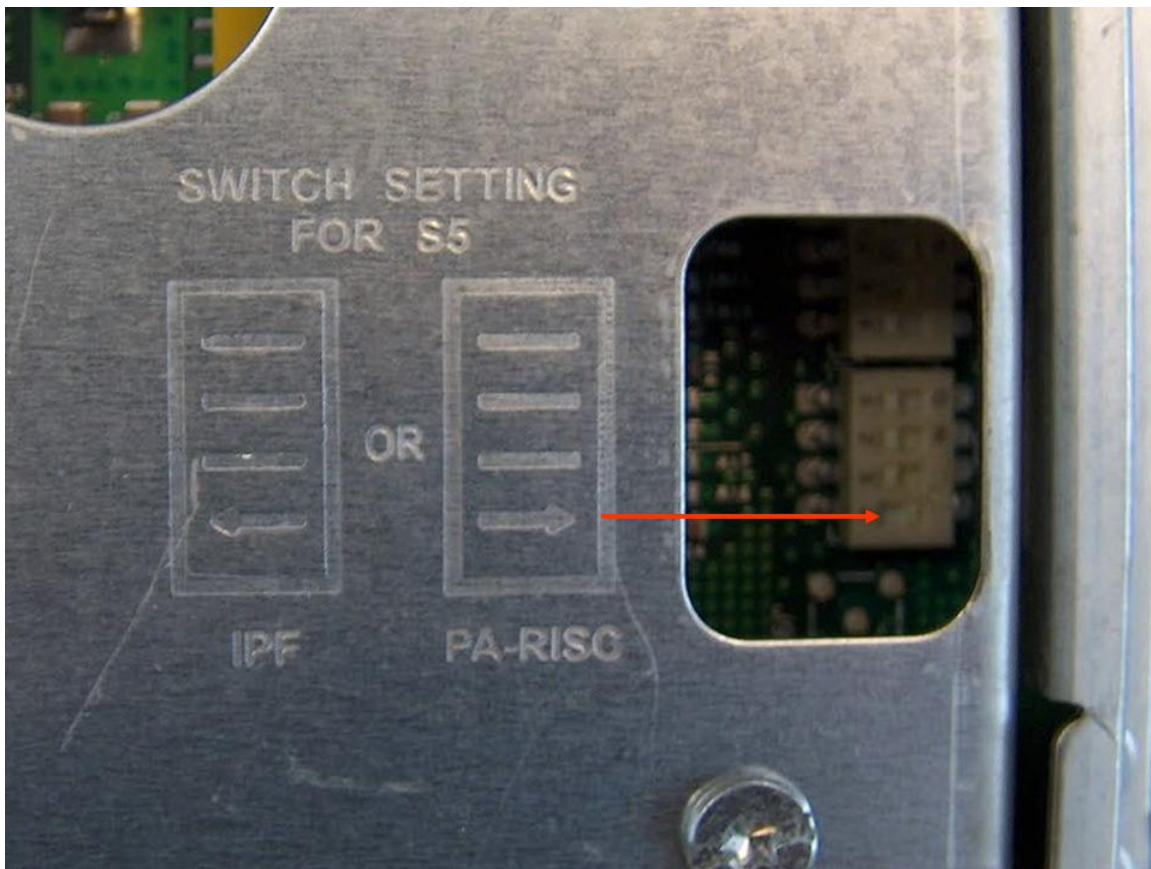
The "Diaton" CPU Extender FRU:

This assembly is the CPU Extender FRU and contains, among other things, the Processor Chip sockets and the "Pluto" or "XZ1 CEC chip". Also on this board are five "DIP Switch" banks – one of which is easily accessible thru a sheet metal hole cut in the top of the assembly (S5). One of the switches in switch bank S5 is VERY IMPORTANT as it is used to select type of processor (i.e. PA-RISC vs. Itanium) installed. In essence, it selects the firmware type to execute when powering up the server. Get this one wrong and the system will not enter into POST (Power On Self Test). This can be a very confusing type of failure because the system will simply not begin POST but will not give you a REASON for not entering POST. Eventually, it will log an "FSB Timeout" error but noting else.

To gain access to these switch banks, it will be necessary to remove the CPU Extender completely. Position the fully removed CPU Extender per the picture below:



Notice that there SHOULD BE a legend stamped in the sheet metal showing which switch in switch bank S5 (the lowest switch if the CPU Extender is positioned as shown) selects which processor type. A close-up of the sheet metal stamping is shown below:



As this picture shows, the switch should be set to the right ("ON") position for "PA-RISC" (e.g. "Mako" PA8800 or "Mako64" PA8900) processors. Set it to the left ("Off") for Itanium2 or MX2 Intel "IPF" processors.

Finally, note that switch banks 1 thru 4 beneath the sheet metal will determine which processors are "enabled" and will determine the Front Side Bus Frequency setting – as well as select misc. control bits. These switch banks should not be disturbed! For Switch bank S5 set the "other" switches to the "Off" position.