

After studying various design examples and chip data sheets, the simplest hardware design for the SPEAR 3 Power Supply Controller would be to use the Motorola MPC860T PowerPC and either a National DP8346A DsPHYTER or LXD970 Level One Ethernet interface IC.

Data sheets and schematics for these devices can be found at:

[Intel Celeron Processor, 810 Chipset and Schematics](#)

[Motorola MPC860T](#)

[National DsPHYTER](#)

[Level One LXD970](#)

Advantages and disadvantages of various architectures for SPEAR 3 Power Supply Controller

System		Pros	Cons
INTEL Processor/810 Chip set		Software drivers and support available	3 Chip solution PGA and BGA Devices Higher risk design No General Purpose BUS for DAC interface
	PCI Interface	Interface to Commercial Ethernet Chips. PMC Interface to Commercial Products	Costly Requires more overhead, connectors. PCI interface to DAC's
DSP TMS320Cxxx		1 Chip solution Simple I/O interface to DAC's	No Interface to Ethernet Chipset (PCI or MII) Lack of Software drivers and support for Ethernet
AMD ELAN SC520		1 Chip solution General Purpose BUS for Xilinx DAC interface	BGA Device
	PCI Interface	Interface to Commercial Ethernet Chips. PMC Interface to Commercial Products	Costly. Requires more overhead, connectors.
Motorola Power PC Microcontroller MPC860T/855 T		1 Chip solution Software drivers and support available.; MII interface to commercial Ethernet Chips General purpose BUS for DAC interface	BGA Device

Number of chips are for the CPU support only. All designs will require memory, ethernet , and an FPGA for DAC interface.