

Hacking a SunPCi card – anyone tried this?

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- *From:* Chris Jones <luginut808@xxxxxxxxxxxxxxxxxxxx>
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Hi all,

I have access to, and the opportunity to play with, (though not at present ownership of) a large number of no-longer-required SunPCI cards. The model is Penguin, Bios V1.1.2 441B. These are basically an AMD x86 PC on a PCI card which plugs into the bus of a SPARC based sun workstation, to allow Sun users to run M\$ windows / PC programs without getting a separate box, power supply, hard drive, network connection etc. The card has a 400MHz AMD cpu, 2 DIMM banks, its own graphics chipset (SiS 5598), W48C67 clock generation, ESS1869F audio chip, Winbond W83877TF peripherals, it has USB1.1 I think, some slightly modified Award bios, a PIC16C64A programmed by Sun, AFAIK to emulate a keyboard and mouse (to get the input from the Sun keyboard and mouse and to provide this to the PC by emulating the hardware. The sticker on the PIC says MSKB 18 (c)1998), and it has an intel 21554 PCI bus bridge, to allow the Sun to access the PC memory I think, (or vice versa?) which allows the PC to render its screen inside a window on the sun desktop, although there is the option to use the internal graphics hardware on the SunPCI card and the VGA connector on the card edge. The card seems to also have an IDE interface though the connector has not been soldered on since the normal usage is to access the a file on the Sun hard drive via some software on the Sun CPU over the PCI bus bridge somehow.

Anyhow, what I would like to be able to do is to make the card boot without the Sun workstation attached. It would be a nice little linux PC with only 25W maximum power consumption, and has USB so keyboard and mouse, network and possibly even hard drive etc. could be attached, and could be used as a VOIP box or for web browsing or whatever.

Just applying power doesn't seem to do it – I tried plugging it into the PCI bus of an old PC and the fan worked but nothing else. I think either: the PIC microcontroller or the Intel bus bridge IC might be holding the SunPCi in reset, or the modified bios on the SunPCi card might be unwilling to boot without some words of encouragement from a genuine Sun workstation, or something I haven't thought of.

If I plug it into the Sun machine and run the software on the SPARC cpu that tells the SunPCI to boot, then from what I remember, the internal video port of the SunPCI does become active and shows some text whilst the bios boots properly and then when Win98 runs off the emulated hard drive, the

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video is switched over to the window on the Sun desktop, so if it were possible to boot the SunPCi without the Sun then I ought to see someth