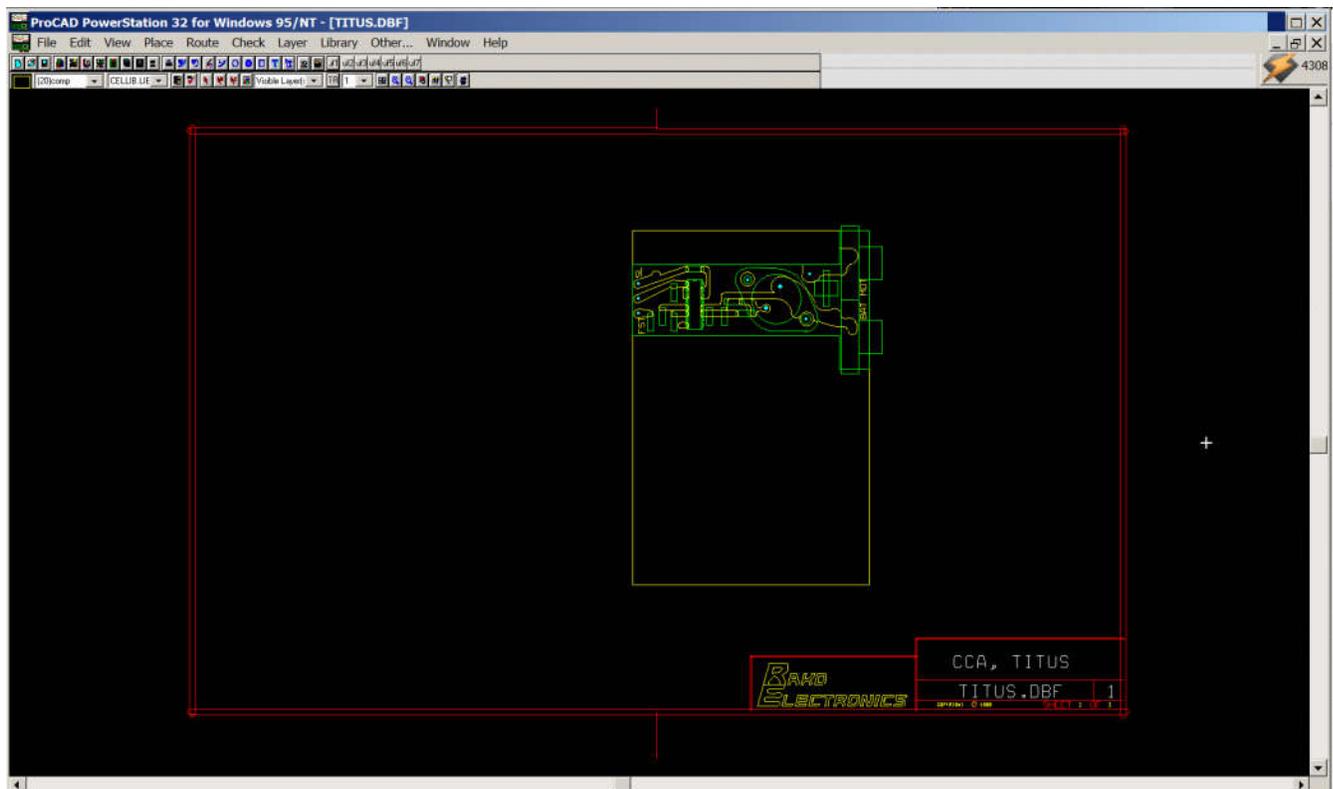




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## Suffering with ProCAD

**The small business solution is not always the most optimum. At least not in 1997.**



When I became a consultant I adopted PC CAD software to do schematics and lay out circuit cards. I purchased a package called ProCAD from a local vendor in Silicon Valley.

In retrospect, it was a very advanced system. One great feature was the software interface was a global editor. It could draw schematics as well as lay out circuit boards. It had features like "snap to pin" so you were sure the schematic connections were valid.

The program was written in Fortran and began life on minicomputers. The company that sold it, Interactive CAD Systems, had figured out how to compile it on a PC. It first came out for DOS. The program was so big it took all 640kbytes in an old PC. If you ran the Print command or any other TSR (terminate and stay resident) program, ProCad would not load. It used 3rd party drivers for video and printers.

This highlights the headache of the pioneer software developers. You had to make your program work, as well as get it to properly interface with dozens of different hardware devices. Microsoft sold Windows by transferring the device driver problem back to the hardware device manufacturers. That was a good deal for the programmers and that is why Bill Gates was smart, he always takes the programmers side.

By 1997, the time I wrote the letter of complaint below, ProCad was a windows application. You can tell from my problems that Microsoft's promise of removing the workload of driver support from the application programmers was really an elaborate fraud.

ProCad is still in business and I am sure they have fixed all these issues long ago. I should download a demo and try it out. I know they were sure ahead of their time. Me, I adopted Orcad and its Layout package by 1998, and lately have been leaning towards Altium.

**So here is my letter from 1997, to the ProCAD people:**

Thank you for your assistance in getting the latest update of Procad and for discounting me the cost of the hardware lock removal. As I told you on the phone, now that I am running Pentium class computers the performance of Procad is satisfactory.

Unfortunately I have had some problems which are making me feel that I may have to return the product for a refund and buy a copy of Orcad's entry and layout tools. The problems I have had are as follows:

1) Text is mis-sized on plots. We spoke about this on the phone and we hoped the upgrade would fix this. It happens even when I use NT's Laserjet II driver. It seems to be data dependent. As a consultant the look of my documents must be very professional. I had to FAX some drawings to a client in France with a bunch of handwritten corrections. As time was critical I could not switch to vector (non-true-type) text and relocate everything in time to meet my deadline. For now I am using the vector text workaround.

2) The Proplot program crashes when I try to plot out the solder side of the board (cond4.dbf). This is the most serious problem. It even crashes when I export the file as a Gerber, read it into a new dbf and try to plot it.

The only way I was able to generate a plot to FAX to France was to export the file as a DXF and bring it into Autocad. This caused further problems because when you place a padstack on layer one in Procad and freeze layer one, the pads still display on other layers.

In Autocad, a block inserted onto a frozen layer does not display any pads even on the unfrozen layers. This means you can't suppress the instantiation text without also suppressing the padstacks. I moved the text to layer 0 and finally got a plot out of Autocad.

I have laid some routes on top of other routes of the same net because I couldn't get the ratsnest to layout the way I wanted, but this should not crash the program. The crash manifests itself by Proplot simply disappearing after about 47% completion.

3) Inability of drill program to identify holes and my new library parts. I had to build a 96-pin din connector for both the schematic and layout. It's a little annoying not having a standard Eurocard DIN connector available but your product is less costly than most others. You do have a rather flexible editing environment. But for the life of me I cannot figure out why the DRC\$HOL 112 attribute in my part is not being picked up by the drill program. (the part in question is J2).

4) Another very serious problem is the inability of the netlister to tie two different net names together. In this design I have identified the connector pins by giving the net name the number of the pin.

I tried putting the connector itself on a "frozen layer" per your tutorial/help file but was unable to do this without problems (I forget the exact difficulty) but instead I put the connector off to the side of the title block in an area not plotted out. Here I tied the labeled nets to the actual connector.

The problem is that there were pins that tied together so that Procap error-ed out; as well as places where these labeled nets tied into my power nets called Chassis, Com1, Com2 and +5\_VME. These also generated errors.

I had to place these routes by hand. If the rats nest connectivity is flawed I really see a potential "Time Bomb" problem with the product. A later rev or a different engineer might not catch these problems. It is essential to me to break connectors up on the schematic. I give lectures about schematic form and stress "inputs on the left, outputs on the right". I almost always have to break up connectors.

5) The Rats-nest does not seem to have connectivity related to the show-signal command. This is an extremely serious problem since if I can't trust the connectivity I may as well lay out the board in AutoCad. For the size of the board I am giving you copies of, this would be a time savings.

The problem manifests itself on the file called cond5.dbf. If I do a show signal of the signal "chassis" it seems to show the correct signals. If I ask for a show signal of "+5\_VME" the program highlights the +5\_VME signal along with the Chassis signal. Yet I do resolves and DRC's and get no errors. How can this be. I have spent hours looking for a short on these nets to no avail. They do share vertexes but on different layers (20 and 23). Am I missing something? (cond5.dbf also crashes Proplot, I have included the .ctr file)

## Conclusion

I have called Orcad for a quote for a complete package but I really believe in you and the small business solution. I can't see there being a problem with windows NT or my computer. I have 32 meg of memory on an Intel motherboard. No other programs have manifested any problems. If you think these problems can be solved in the very near future I would like to continue using Procad despite the lack of library parts and many other quirks. Please advise me I you think these are solvable problems and how long to achieve a fix. I have enclosed a disk with all the pertinent files. As you might guess these are confidential so please handle them with care.

[Update 2018: I got my old 4.5 version to install on Win7. I installed it from floppies on a XP box and copied the executables to my Win7 computer. I run it in (x86) mode.