

Electronic Project Panel Labels

Let your computer help.

by Marion D. Kitchens K4GOK

After finishing the electronics on your latest project, the next matter at hand is a suitable enclosure, followed immediately by the problem of labeling. How do you make your electronic marvel look like a professional piece of work? There are a number of different ways to accomplish that task, all with various degrees of difficulty and varying qualities of results. Many hams resolve this problem with rub-on lettering, stick-on tape labels, etc.

With the advent of desktop publishing on personal computers, there is another way that is quick and easy, and produces top quality results. The desktop publishing technique has several advantages over other methods. It allows you to design the panel

electronically, so changes are easy to make without the hassle of physically changing things. This way you can get the layout exactly the way you want it, before "cutting metal." The only limit to the degree of detail and complexity is your imagination: You can put whatever you want on the panel, including graphic images. If you can do it on the computer, you can put it on a panel.

As a practical matter, a printed copy of the panel layout can be used as a template for drilling holes and making cutouts on the physical panel. This assures proper alignment and location of switches, jacks, indicator lights, etc.

This article describes the desktop publishing method and the resolution of the pitfalls

the author encountered. Hams who build electronics projects are encouraged to "dress them up" with professional-looking panels and labeling.

Making a Panel

I recommend making an initial rough pencil layout of the panel. Make sure that you plan for all the switches, control functions and the like that the project either does have, or may have in the future. Leave room for additions or embellishments to your project. See Photo D for an example of a rear panel showing jacks for just such future embellishments.

Use your favorite desktop publishing software to make a full-size layout of the panel.



Photo A. The "CONSTANT CURRENT," panel made with a 9-pin dot matrix printer.

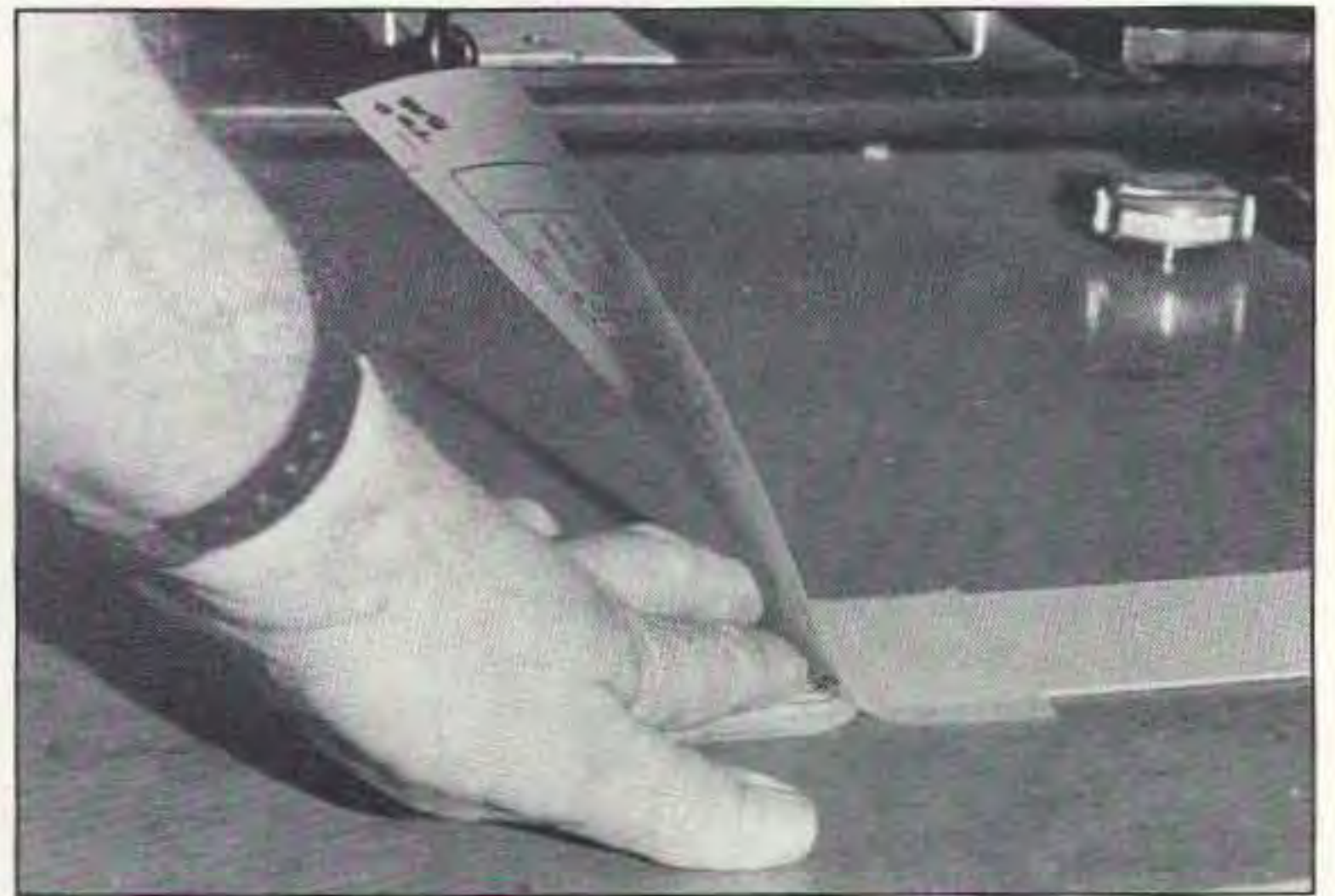


Photo C. The "roll on" technique recommended for application of the film.



Photo B. Front panel of "FREQUENCY MASTER," showing the computer-generated panel layout.

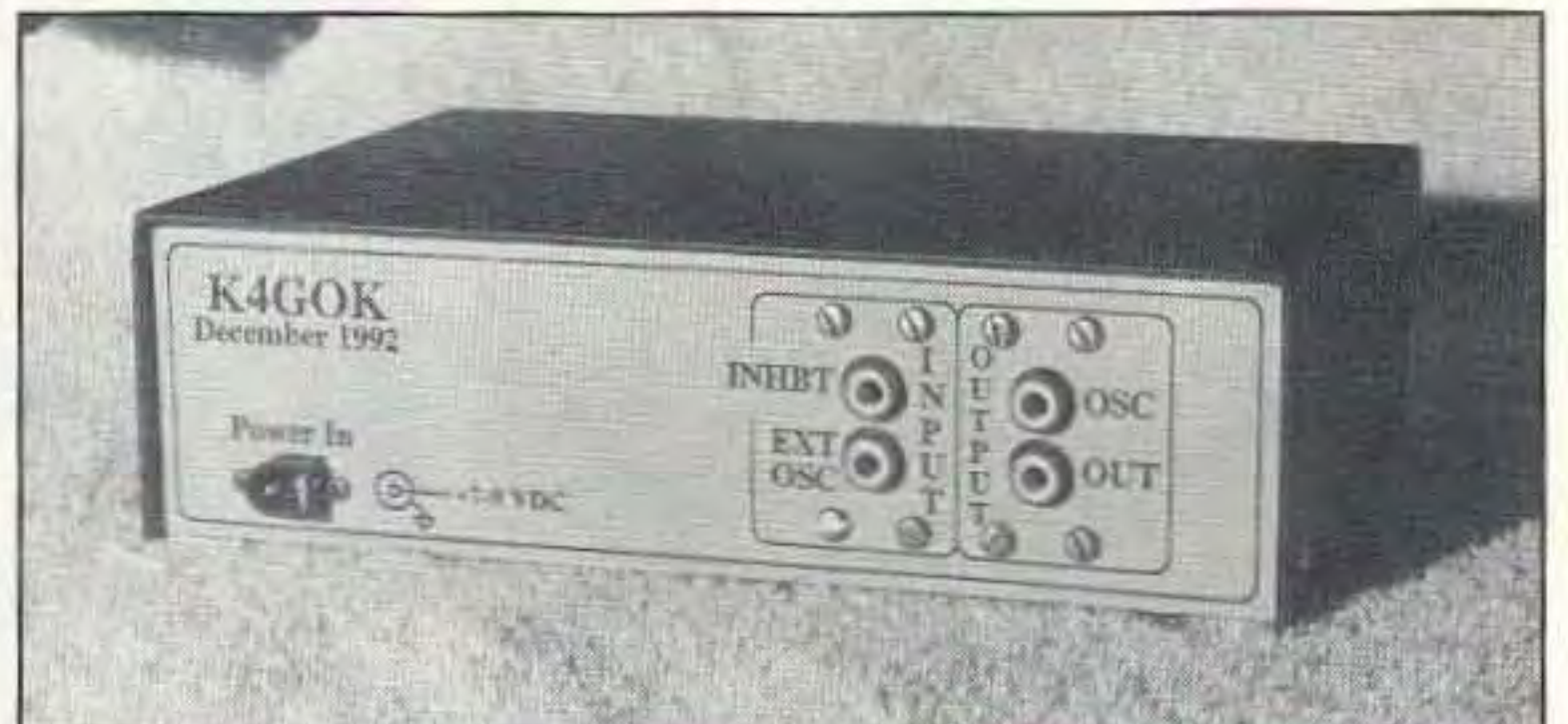


Photo D. The rear panel, showing provisions for "embellishments" as mentioned in the text.

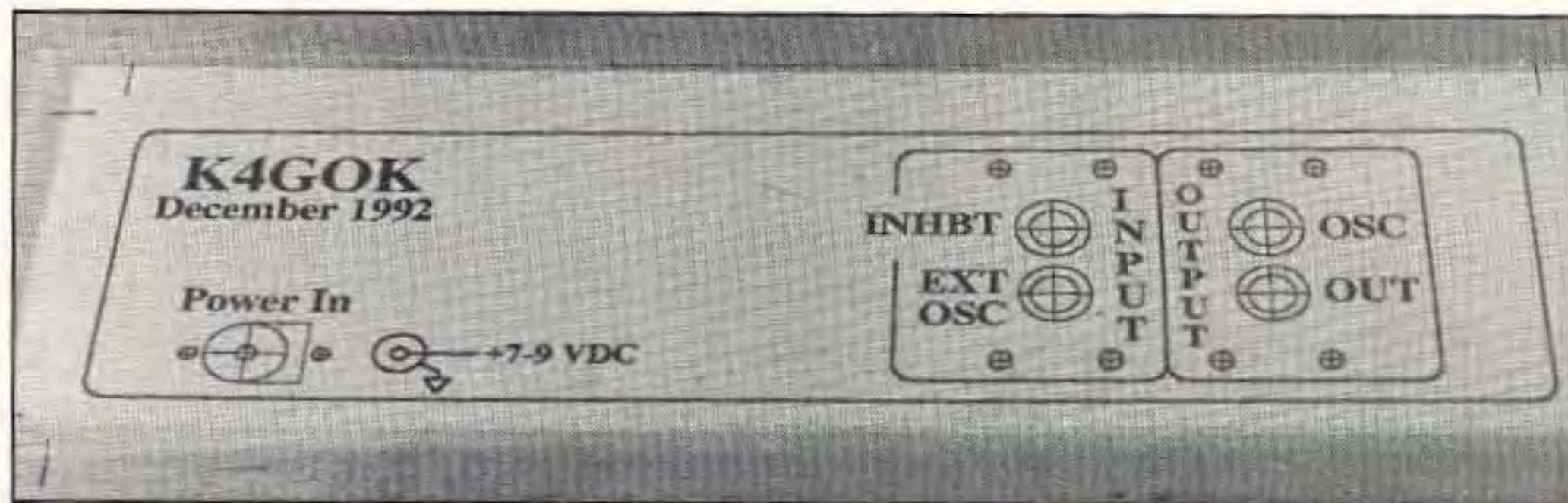


Photo E. A painted panel with the film in place, ready for cutting to shape and drilling.

Make sure you have it the way you want it: The finished product will be exactly like that in the computer. Print out a copy of the finished layout to be sure it is OK. For best results, I recommend a laser printer, but 9-pin dot matrix printers can also produce quite good products. The "CONSTANT CURRENT" panel shown in Photo A was done with a 9-pin dot matrix printer.

Take your final artwork to your local copy shop. Make a copy on paper, and a copy on transparent stick-on film. The film used for making the "FREQUENCY MASTER" panel shown in Photo B was called Graphic Applique Film. It was the brand offered by my local copy shop, and should be available widely. It works well, without stretching or distortion during application.

I recommend completing all the metal work and painting before applying the film.

This results in the best-looking panel, but it also requires careful alignment of the film before sticking it in place. The film sticks tightly and can pull the paint off if it is lifted for realignment. Use the paper copy for drilling and cutting the panel. Rubber cement works great for sticking the paper copy to the metal panel. I found out the hard way that "100%" size on most copy machines is not actually 100%. But if you use the paper copy, it will be the same size as the film you will be applying later. When cutting the panel from the material you use (I used double-clad PCB here), leave a small tab on one end. I left about 3/4" on the end of the "FREQUENCY MASTER" panel (Photo B). This tab serves as a place to stick the film down while aligning it with the panel. Cut off the tab after applying the film.

Alternatively, the film can be applied be-

fore drilling and cutting the panel. If you use this technique, sharp drills and cutting tools must be used to prevent damaging the film during that operation.

Apply the film by aligning it carefully and sticking it down to the tab. Bend the film so that the stiff backing will "unroll," and rub the film down with your finger as it comes in contact with the painted panel. See Photo C. Apply only a small area at a time. Make sure all the small air bubbles are rubbed out as you go. Any trapped air will not come out later. It is important that the air be rubbed out as the film is applied.

The edges of the film can either be rolled around the edges of the panel and stuck to the backside, or trimmed neatly to the panel edges with a sharp X-acto knife. I recommend putting a thin bead of white glue around the trimmed edges to prevent clumsy handling from lifting the film during use.

The film needs no protection for normal handling—the lettering seems to be durable. Once the film is applied to the painted panel it is ready for use.

Using the desktop publishing technique produces craftsman-quality labeling for home-brew electronic projects. The results are comparable with rub-on lettering and India ink, and can be achieved with considerably less time and effort. I recommend this technique for all who enjoy building electronic projects.