Elec 422: VLSI Design I
Fall 1998

Notes on X Window Dumps.

November 10, 1998

X Window Dumps (xwd) and (xv)

An alternative to *cif2ps* and *pplot* is to use an X Window Dump of your *magic* files. This is useful for the top level routing where too much detail creates a very large Postscript file. An X Window Dump is best done by starting *magic* in the black-and-white or single bit plane mode as follows:

```
flammulated% magic -dXWIND1 invert1
```

Expand or unexpand the layout in *magic* to create the appropriate view of the circuit. Open a second Unix shell window and make sure that the *magic* graphics window is on top. Run *xwd* to capture the window in an intermediate format:

```
flammulated% xwd -out invert1.xwd
```

Press left mouse button in window of interest. The Xterminal will beep to indicate the start of the dump, and beep again when the dump is complete. This can take 10 seconds.

Now create a Postscript file by running *xpr* as follows:

```
flammulated% xpr -device ps -portrait -psfig -out invert1.ps invert1.xwd
```

This command will produce a Postscript file of the inverter cell.

The file *invert*1.*ps* will be a Postscript file in portrait mode and with bounding box information suitable to be used with *psfig* in a LaTeXdocument as follows. You may need to edit the bounding box information to get correct placement of the file in your LaTeXdocument.

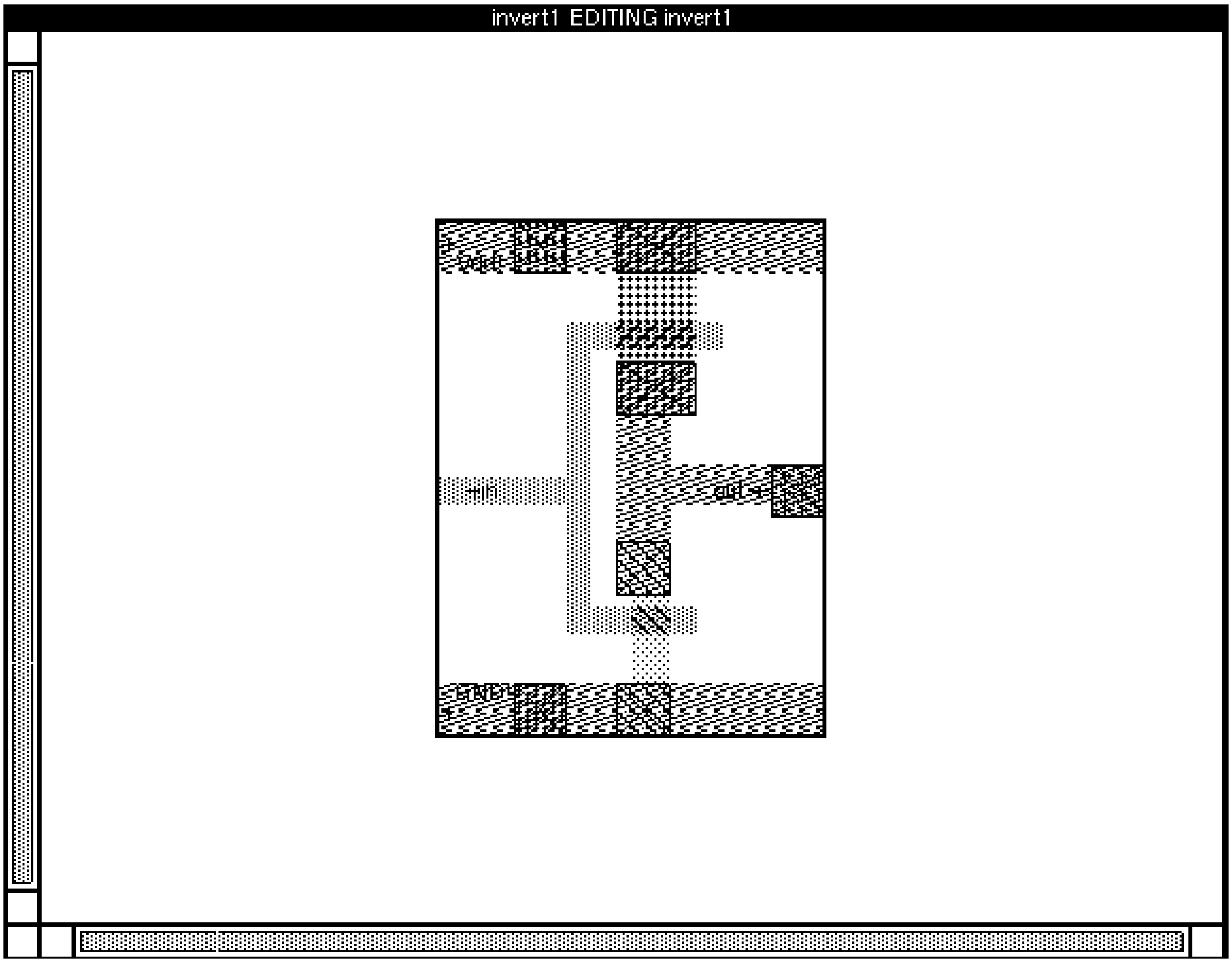

Figure 1: X Window dump of inverter cell.

An X Window Dump of a complete chip showing the padframe subcells, (by expanding the Vdd pad only), is shown in Figure 2. This design is part of a 16-bit CORDIC processor designed at Rice. The Postscript file *xychip.ps* is around 67K bytes and is much easier and quicker to print than the full plots produced by *cif2ps* or *pplot*.

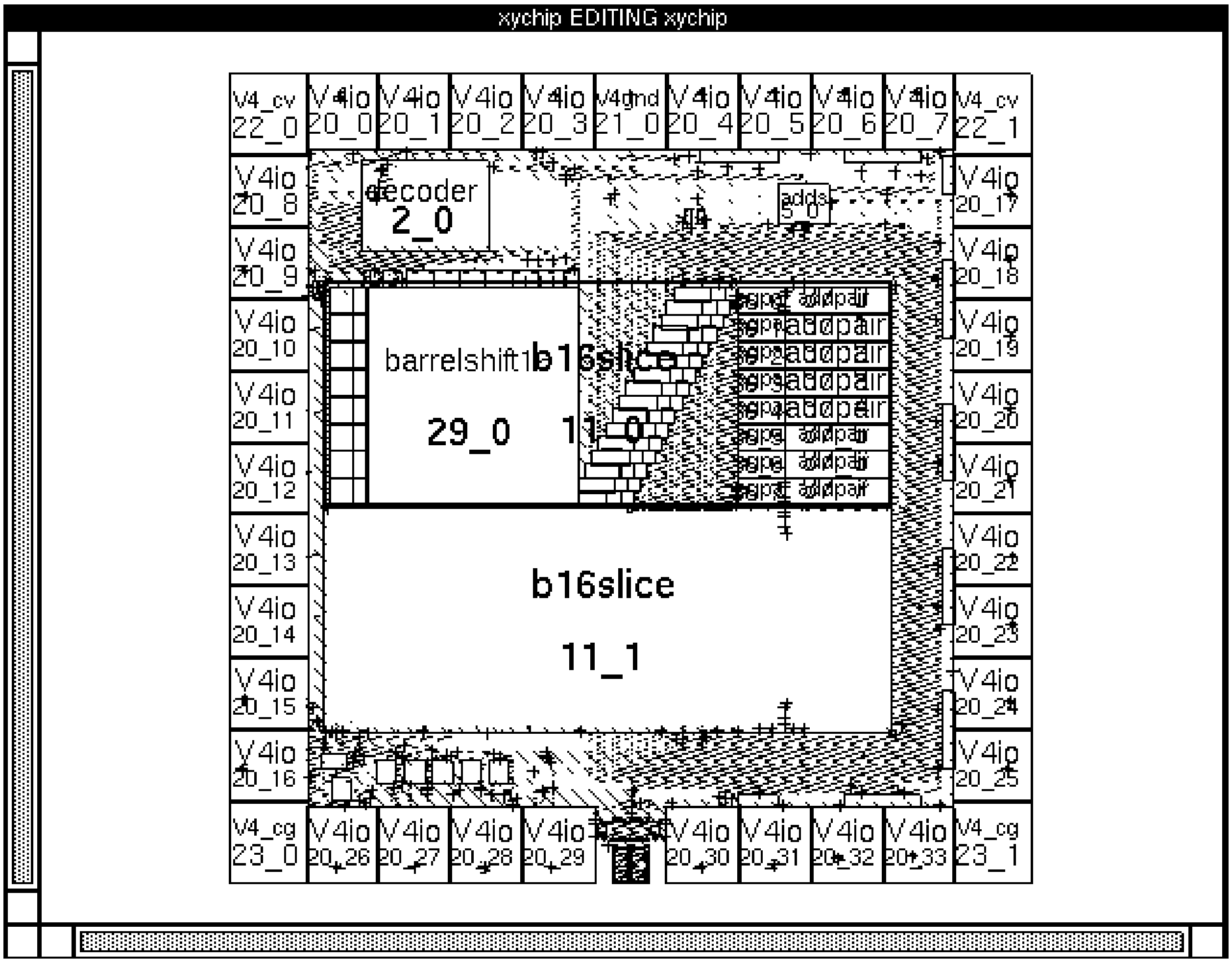

Figure 2: X Window dump of the xychip design.

A similar process can be done with the program *xv* which is a rather general purpose graphics format converter able to output Postscript, gif, and jpeg. In order to change the default *magic* window background color to white for printing, follow these steps.

From the "xv" controls window, first select 8-bit mode from the 24/8 Bit menu. Then select the "Color Editor" from the Windows menu. This pops up a color editor window. In the upper left "colormap editing" window, the colors that are found in the graphics file are listed.

Go to the window that you have loaded or "grabbed" from the X-windows screen. Click the left mouse button on the small box corresponding to the background color in the colormap editing sub-window. Then *xv* should highlight the color that you selected in the color box list and the dials should show the RGB values of the color. Spin the dials to 255 for RGB to get a white background.

You should then be able to apply the changes and save Postscript after doing this with the modified background, as shown in Figure 3.

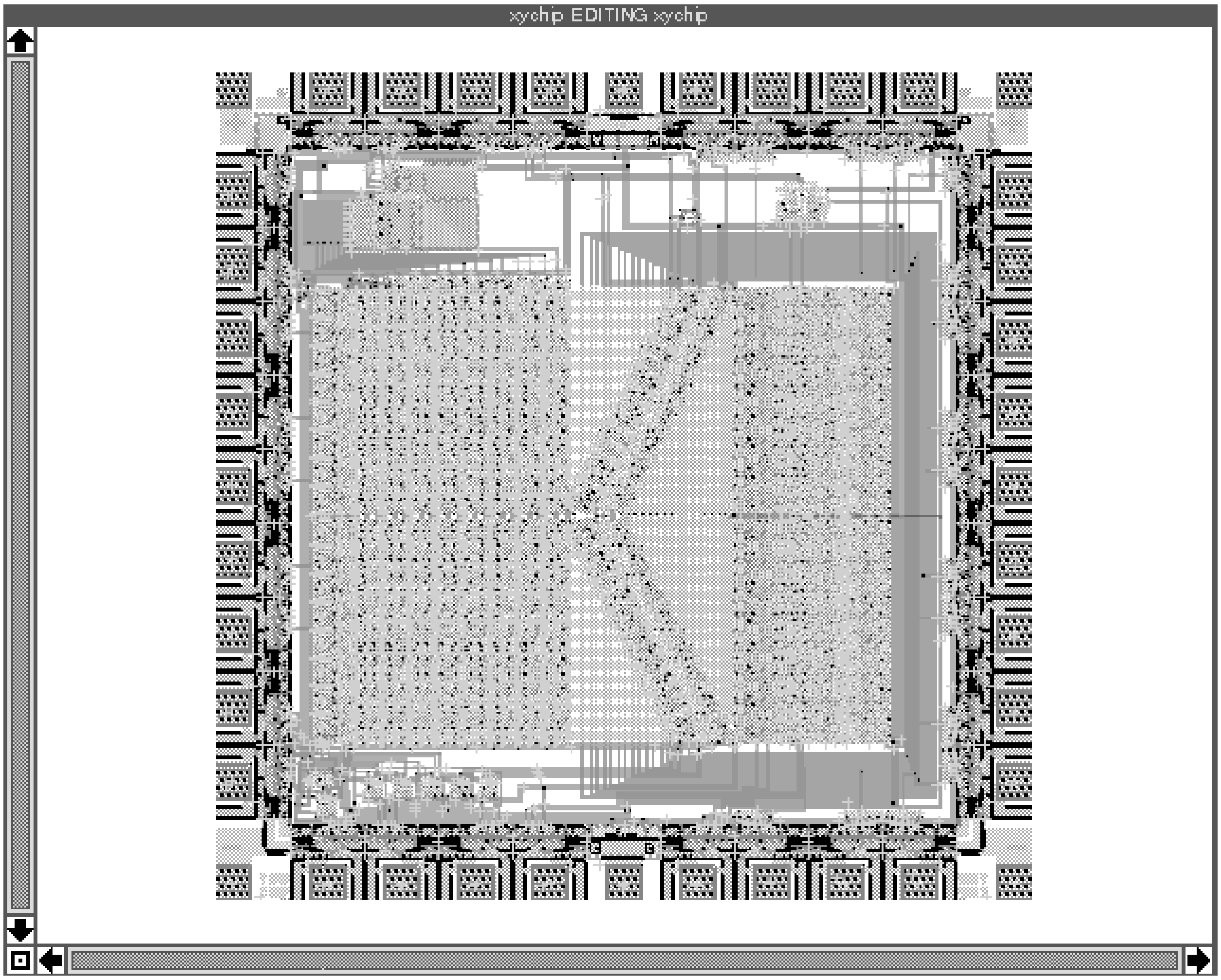

Figure 3: xv window dump of the xychip design.