Plotting on HP7475A from Debian MacMini

1. Convert SVG to HPGL with *vpype*

- **Open** a terminal window and **activate** your *vpype* virtual environment. On the Debian MacMini, do this with:
  `source ~/vpype-venv/bin/activate`
- **Ensure** *vpype* is working: `vpype --help`
- **Move** a copy of your SVG file into your current working directory. (On the Debian MacMini, you might wish to do this with a thumb drive, or `wget`, `rsync`, etc.)
- **Execute** a *vpype* command like the one below to convert the SVG into HPGL formatted specifically for the HP7475a. (You can **preview** your HPGL file in the browser using ShareCad.org.)

`vpype read input.svg write --device hp7475a --page-size letter --landscape output.hpgl`

- The *speed* of the HP7475A plotter can be adjusted from 0.38 to 38.1 cm/second, using the *vpype* `-velocity` command.
- A more elaborated *vpype* command can also scale, crop, and do complex optimizations on your design, as shown below. (Note: the command shown below is a single line of text.) Consult the *vpype* docs to use these commands wisely!

`vpype read input.svg scale 0.9 0.9 crop 0.5in 0.5in 10.0in 7.5in linesimplify reloop linemerge --tolerance 0.1mm linesort --no-flip write --device hp7475a --velocity 3 --page-size letter output.hpgl`

2. Prepare the HP7475A Plotter

- **Install** your pen cartridge into one of our custom adapters; it works with Pilot G-2 and many other pens. In order to insert and secure the cartridge, you'll need to adjust the M3 set screw with a 1.5mm hex wrench. The pen tip should protrude 3-4mm from the adapter.
- **Load** the plotter carousel with your pen(s). You'll need to depress the carousel's spring-loaded black rubber pen-caps in order to insert the pens.
- **Load** the plotter with letter-sized (A4, 8.5x11) paper as follows: Push the paper load lever (on the right side) upwards; align the paper against the left edge; and push the paper just up to the short white line in the upper left of the paper bed. Lower the lever.

3. Transmit HPGL to HP7475A via CuteCom on Debian

- On the Debian MacMini machine, **launch** the CuteCom terminal program.
- **Select** the correct USB interface where it lists *Devices* — probably `/dev/ttyUSB0`.
- **Click** on *Settings* in the upper right and **configure** CuteCom: Baudrate = 9600; Data Bits = 8; Flow Control = Hardware; Parity = None; Stop Bits = 1; Open Mode = Read/Write.
- **Close** the Settings panel and **click** *Open* on the main UI. Once the connection to the serial adapter has been established, the *Send file* button will become un-greyed. You can then **choose** your HPGL file, and it will be sent to the plotter!
- **IMPORTANT**: When you're done using the plotter, **raise** the paper load lever.