

PWB Drawing Sheet Index

The printed wiring board (PWB) human-readable drawing (filename: SWOPA2620PWB1_ALL.pdf) includes sheets described below. Print at 1:1 scale ("Actual Size", not "Fit to Page") on 8.5" x 11.0" (US "Letter" size) paper in "Landscape" orientation.

Sheet 1: SWOPA2620PWB1_BRD Overview of the PWB as used in the intended assembly. Magnified component placement view. Fabrication notes used by the PWB etching house.

Sheet 2: OUTLINE_INTERFACE Overall dimensions. Identification and location of interface pins. Comparison to footprint and interface of "traditional" discrete opamp module. Note that this is the view looking DOWN through the board from the top (component) side. (It is NOT a view looking at the bottom side.) The significance of this sheet can be summarized as: A PCB assembly based on this PWB can be installed in an existing chassis or manifold designed to accept API 2520, or John Hardy JE990, modules ONLY if there is at least 0.200" clearance on the output-pin end of the module, AND at least 0.100" clearance on the two sides adjacent to the output-pin end, AND there is a socket for pin 7 but no offset adjustment circuitry connected to it.

Sheet 3: DRILL_LOCATIONS View showing all holes. Locations of selected component mounting holes. (Locations of the remaining component mounting holes can be derived using pinout drawings of the components.) Hole locations are actually defined in the Excellon drill file, included in the "Gerbers" folder. This sheet is most likely used as a check-print for sample inspections to verify that boards were manufactured correctly.

Sheet 4: TOP_COPPER Pads and traces on the top (component) side of the PWB.

Sheet 5: TOP_COPPER_ONLY Same as sheet 4, but the drawing title block and border has been removed and the top circuit layer has been magnified to fit the page (magnification factor approx 3.8:1). Of particular interest to masochists wanting to replicate this layout in a different PWB program. May also be used for home etching of PCB's (using, e.g., toner transfer) if you spend enough time finagling the printer scale factor.

Sheet 6: BOTTOM_COPPER Pads and traces on the bottom side (traditionally called the "solder side") of the PWB. Note that this is a view "looking through" the PWB from the top side, which is a de-facto standard for the PCB fabrication industry.

Sheet 7: BTM_COPPER_ONLY Same as sheet 6, but the drawing title block and border has been removed and the bottom circuit layer has been magnified to fit the page.

Sheet 8: BTM_COPPER_MIRROR A "mirror image" of sheet 7. (Note that the etched copper drawing number reads correctly from left to right.) This is the image a home constructor might use for the bottom side of his board - if he's willing to not only finagle the scale factor, but also wrestle with top/bottom registration.

Sheet 9: TOP_SILK Component outlines, reference designators, and other information printed in ink on the top side of the board. (Traditionally called the "silkscreen" or "legend" layer.) As you can see, there isn't room on this

board for all reference designators - refer to the component placement diagram on sheet 1.

Sheet 10: TOP_SILK_ONLY Same as sheet 9, but the drawing title block and border has been removed and the silkscreen layer has been magnified to fit the page.

Sheet 11: BOTTOM_JUMPERS Approximate placement of jumpers on the BOTTOM side of a PCB assembly using a SINGLE_SIDED PWB, to replace the connections that would be made on the bottom side of a two-sided PWB. Bottom-side jumpers will probably be easier to install than top-side jumpers, but may be more susceptible to damage. Insert suitable lengths of AWG #30 or AWG #28 insulated wire in the via holes and solder in place. Secure the jumpers with suitable adhesive (e.g., electronics-grade silicone rubber, cyanoacrylate, polystyrene coating ("Q-Dope"), etc). Note that jumpers are NOT used when you have a TWO-SIDED PWB!

Sheet 12: TOP_JUMPERS Approximate placement of jumpers on the TOP side of a PCB assembly using a SINGLE_SIDED PWB, to replace the connections that would be made on the bottom side of a two-sided PWB. Insert suitable lengths of AWG #30 or AWG #28 insulated wire in the via holes and solder in place. Top-side jumpers will probably be more difficult to install than bottom-side jumpers, but may be better protected from damage. Note that jumpers are NOT used when you have a TWO-SIDED PWB!