

Rutgers University PSI43 HDI Adapter board

This note explains proper grounding procedure for the PSI43 HDI adapter board. The board was designed with intention to simplify signal level shifting for negative supplied CMOS chip. Due to this reason, PSI43 chip ground level is shifted by +2.5V by TBM power supply circuitry. Copper pours on the board are connected to chip's ground and, therefore, are at +2.5V potential relative to the AC main ground. One has to be careful while working with the adapter board and prevent any occasional connections to the copper pours. See the picture below.

For High Voltage ground connection, a pin next to the middle of the 34-pin connector should be used. This is the only real ground available on the HDI adapter board. It can also be used for scope ground connection if one wants to look at the signals on the board. The HV capacitor ground pad connected to +2.5V virtual ground. **Do not connect that pad to the actual ground!** If true ground connection of the capacitor is desirable, cut the trace between via and ground pad and use a wire to connect it to the actual ground (see picture below).

