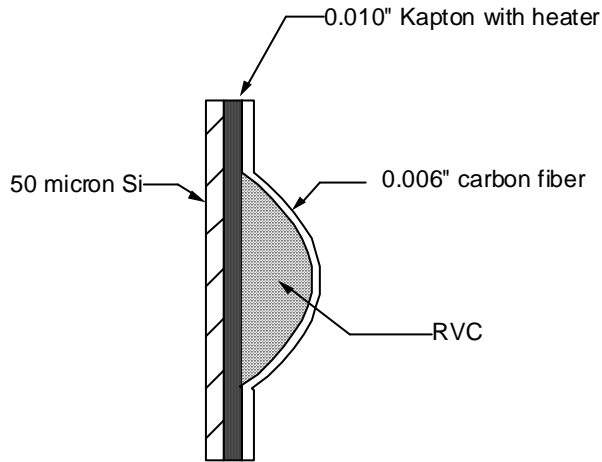


4/6/04 LG  
DRAFT

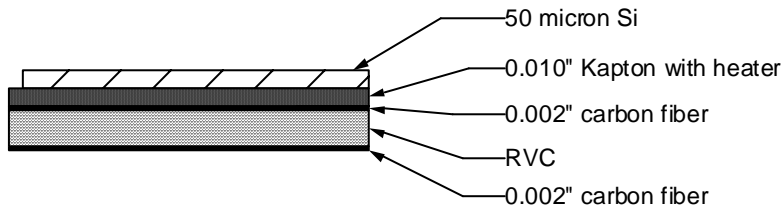
Current Design Proposals for the LBNL Pixel Detector September Ladder Prototype Test

There are currently several proposals for the hardware to be produced for the September ladder test of the LBNL pixel detector. The initial proposal was to construct the hardware shown below.

For mechanical testing – fundamental frequency, stiffness, thermal properties, vibrational properties, cooling tests.

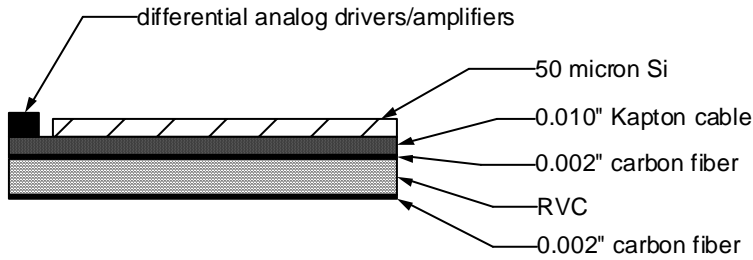


**Figure 1**



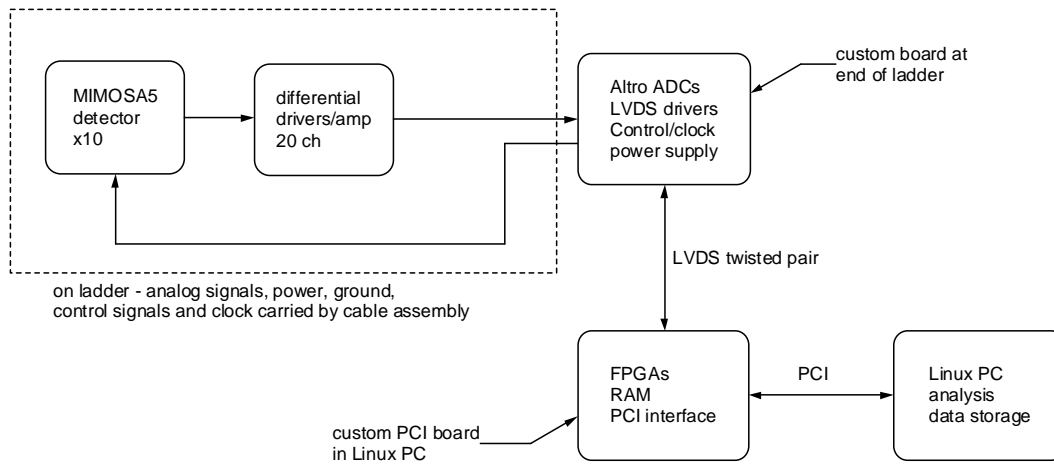
**Figure 2**

We intend to make 1 each of the assemblies shown in figures 1, 2. In addition, we will make 1 spare carrier of each type with ready to have the appropriate electrically correct cable glued as shown.



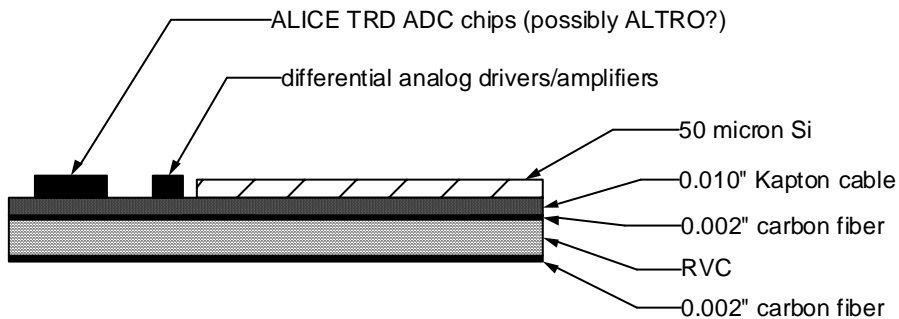
**Figure 3**

For system electronics and detector performance we intended to produce the system shown schematically below.



**Figure 4**

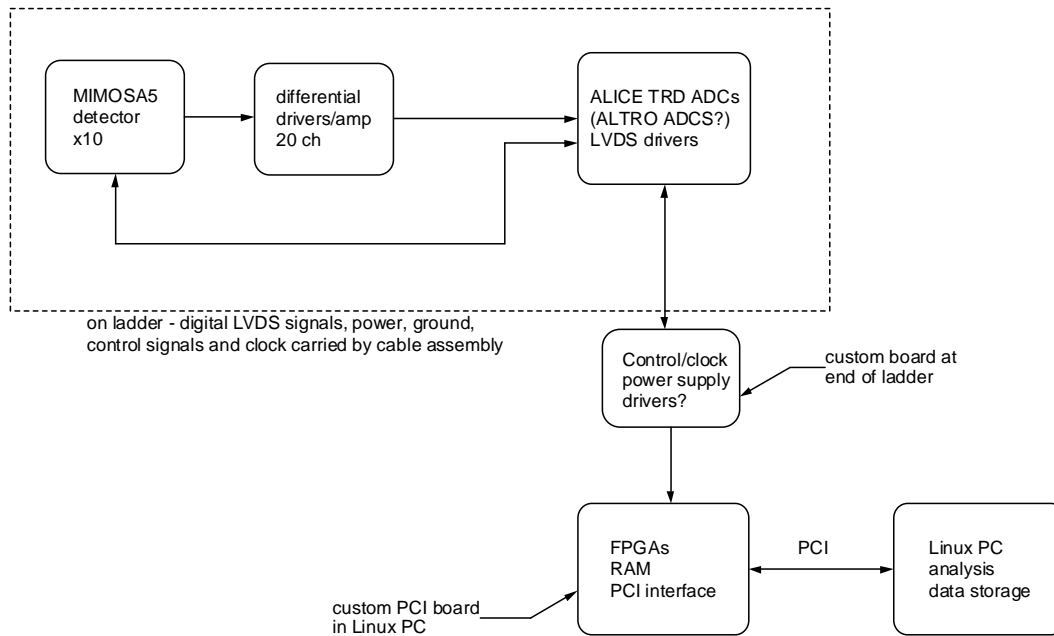
After discussions with Volker and new information about the availability of a different ADC that may be what is ultimately used in Robin's chip. We also consider producing the following electronic and detector performance system.



Carrier structure and cable are significantly wider for electronic performance test ladder.

**Figure 5**

The corresponding system schematic is shown below



**Figure 6**

The ALICE TRD ADC chips come as bare silicon that we can attach and wirebond to. The ALTRO chips come prepackaged and are ~1" x 1". We would need to make 2 different cables to test both ADC designs as well as adding the necessary non-overlapping control circuitry.

The mechanical models will provide the mechanical and thermal material properties measurements that we need to do. The electronic system is rife with new possibilities.