

LG

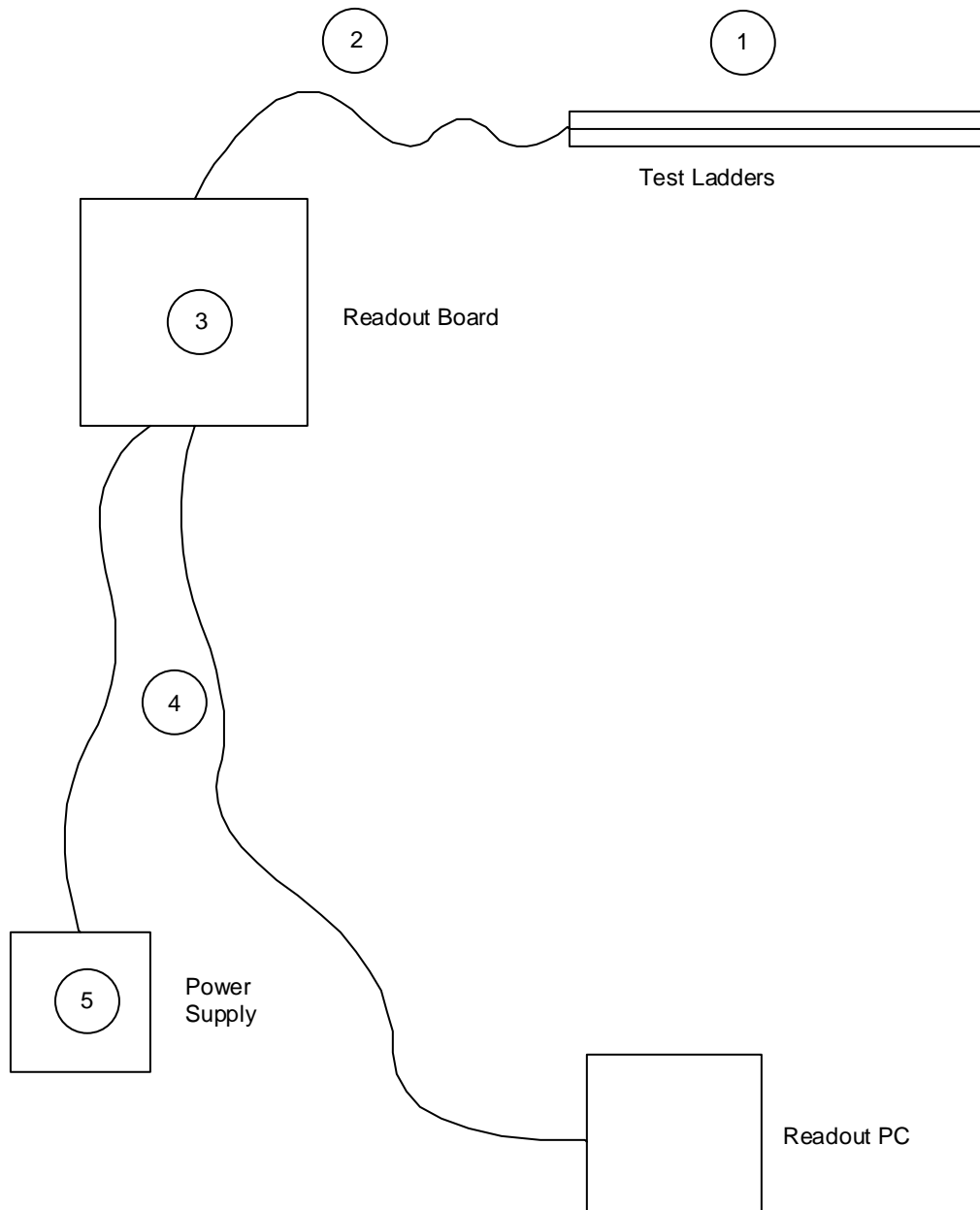
February 23, 2006

Proposed HFT Test Hardware for installation in STAR in Summer 2006.

We intend to test some of our prototyped hardware for the HFT and install it in the summer 2006 shutdown. The goals for this test are;

- Testing our prototype readout electronics.
- Establishment and testing the interfaces to STAR DAQ and Trigger in a run environment.
- The readout of APS detectors in the STAR running environment (we would like to get as close to the beam pipe as possible).
- Possible tracking through 2 APS detectors mounted in a “back-to-back” configuration.

The testing will involve some hardware designs that we hope to incorporate into our final detector design, thus the physical sizes and layouts of some of the test pieces are larger than needed for the immediate purpose. But designing for the expected final configuration keeps as much as possible of the design work that we do relevant to the final construction, as well as providing a better test of our designs. We propose to insert the following hardware into the STAR detector as part of the ongoing research and development for the HFT. Shown graphically below;



Part #	Item	Size	Notes
1	Two test ladders with 1-2 detectors mounted on each.	Approximately 10' x 2" x 2"	These would be full sized ladder dimension prototypes.
2	Twisted pair cables	3-5 feet long	Low voltage power and control in and signal out from the sensors on the board. Max of 3.3V on all power or signal.

3	Readout Board	Approximately 12" x 10" x 3"	Contains a Stratix development board, DDL, motherboard and daughter card for HFT. Current limiting regulators are located on the motherboard. The Stratix is a commercial product.
4	Twisted pair cables / fiber optic cable	Sufficient length to get the Power Supply and Readout PC away from the high field region.	1 power supply cable @ 5V 2 fiber optic cables Twisted pair cables for TCD interface, JTAG, etc. Stratix power supply cable @ 12V
5	Power Supply	Approximately 12" x 6" x 5"	5V bench power supply