Status of the Anode Front-end Electronics

EMU Meeting, CERN, June 15, 2001

T. Ferguson

1. Preamplifier ASIC

   (a) Received 1700 final production chips back from the foundry/packager in March, 2001.

   (b) The first-pass test found that all our performance requirements were met (see N. Bondar's talk at the March meeting). But only 60% of the chips had all channels working.

   (c) Received 1100 fully-populated final production boards back from the manufacturer (ACC Electronix) in April. Boards were tested at the company right after production. Excellent quality control.

   (d) Have performed final testing on 250 boards. Results are very good, with only a few percent of the boards having problems.

(e) Are now changing over our test facility so that it can do 10 boards at once instead of 2. Also finalizing test requirements and database storage of results. (See talk by I. Vorobiev in the Software Session.)

(f) Worked with MOSIS engineer for a month to try to find the reason for low yield. Nothing wrong uncovered. Will stay with same masks.

(g) Received quotation from MOSIS yesterday for full chip production (26,000 chips). Will place order next week.

2. LVDS-to-TTL, Time-Delay ASIC

   (a) Received 158 pre-production chips from MOSIS in April. Found 1 chip dead. All others had very good time characteristics.

   (b) Made final production chip submission to MOSIS on May 31. Should receive 24,000 chips back in August.

3. All other supporting hardware – screws, shielding plates, thermal pads, etc., are now at Fermilab.

4. Anode Output Cables

   (a) Finalized the cable labeling scheme. Manufacturer puts final label on all cables and packages them by chamber.

   (b) Company producing 1000 cables per month.

   (c) Have made several sample cable harnesses – takes 2 people about 1 hour per harness.

   (d) Producing a detailed harness production manual, which will include annotated pictures and a video.

   (e) Decided that the foreign FAST sites will make harnesses for their chambers. Still discussing this with US FAST sites.