

RHIC BPM Meeting

July 10, 2008

Minutes

Attendees: Phil Cerniglia, Chris Degen, Rob Michnoff , Michiko Minty, Bob Olsen, Tom Russo

1. Discussed Progress and Status

- a. Justin and Chris performed initial calibration checks on approximately 10 units in 1006b. With an external calibration pulse, same amplitude on both A and B inputs, most units measured approximately 30 microns offset. The worst measurement about 50 microns and was recalibrated using the internal pulse. After calibration, the offset measurement was about 30 microns. One DX module was tested with the external input connected to the splitter input, and very little change was noted. These initial results are encouraging and may indicate that recalibration of all units IS NOT required.

Additional units in 1006b should be tested, and units in an alcove should also be tested. Additional tests should also include attenuating one of the A/B inputs to produce and check an expected position value. Performing an end-to-end test by connecting the test pulse to the end of the cables at the cryostat may also be worthwhile.

- b. Tom reported that 40 feedthroughs have been ordered.
- c. Phil reported that
 - 1005E IFE installation is complete and currently being tested.
 - 1007W IFE modules are currently being programmed in preparation for installation.
 - 1004B and 1002A installation will be next.
 - All units are expected to be installed by about the end of July.
- d. Bob reviewed the ADO code and found that the most recent ADO performs limit checks on the turn-by-turn position values and the Acorr and Bcorr values. After the meeting, Phil and Rob installed the new ADO in the lab system and confirmed that this is the likely cause of calibration errors that have been noted with the new ADO only. The threshold limits were changed, and errors are no longer being reported.

2. Upcoming efforts

Some specific work expected to be performed over the next few weeks includes:

- a. Continue TDR cable tests. Determine the cause of the 5 o'clock Blue Vertical Q1 timing difference of 2 ns, and the cause of the 5 o'clock Blue Horizontal Q1 jumpy signal. Additional TDR'ing of DX BPM cable pairs in 1008 may also be desirable to determine the end-to-end matching. (J. Cupolo, Rob, Justin)
- b. Continue checking calibration of IFE modules in 1006b and an alcove using the external signal. This will help us determine if calibration drifting has occurred, and therefore if calibration of all modules will be required.
- c. Prepare short reports for temperature tests that have been performed, including analog signal input variations, timing trigger variations, and attenuator variations. Also prepare a short report on the feedthrough tests that have been performed. (Justin)
- d. Identify the cause of measurement differences between the internal and external signals. Install and test with 0.1% resistors on the combiner board.
- e. Determine the feasibility of recalibrating with the internal pulse when the temperature is different from the original external calibration
- f. Store DSP code versions in clearcase. (Justin)
- g. Archive Altera gate array files in drafting area. (Justin)
- h. Continue generating list of known causes of BAD data (Rob, Todd, Michiko)
- i. Complete preparation of development system backup (Frank Naase, Justin)
- j. Plus additional work shown on the schedule

3. Longer term efforts

- a. Remap a few RHIC BPMs using the wire scanner unit, to double check the coefficients used to compute position.