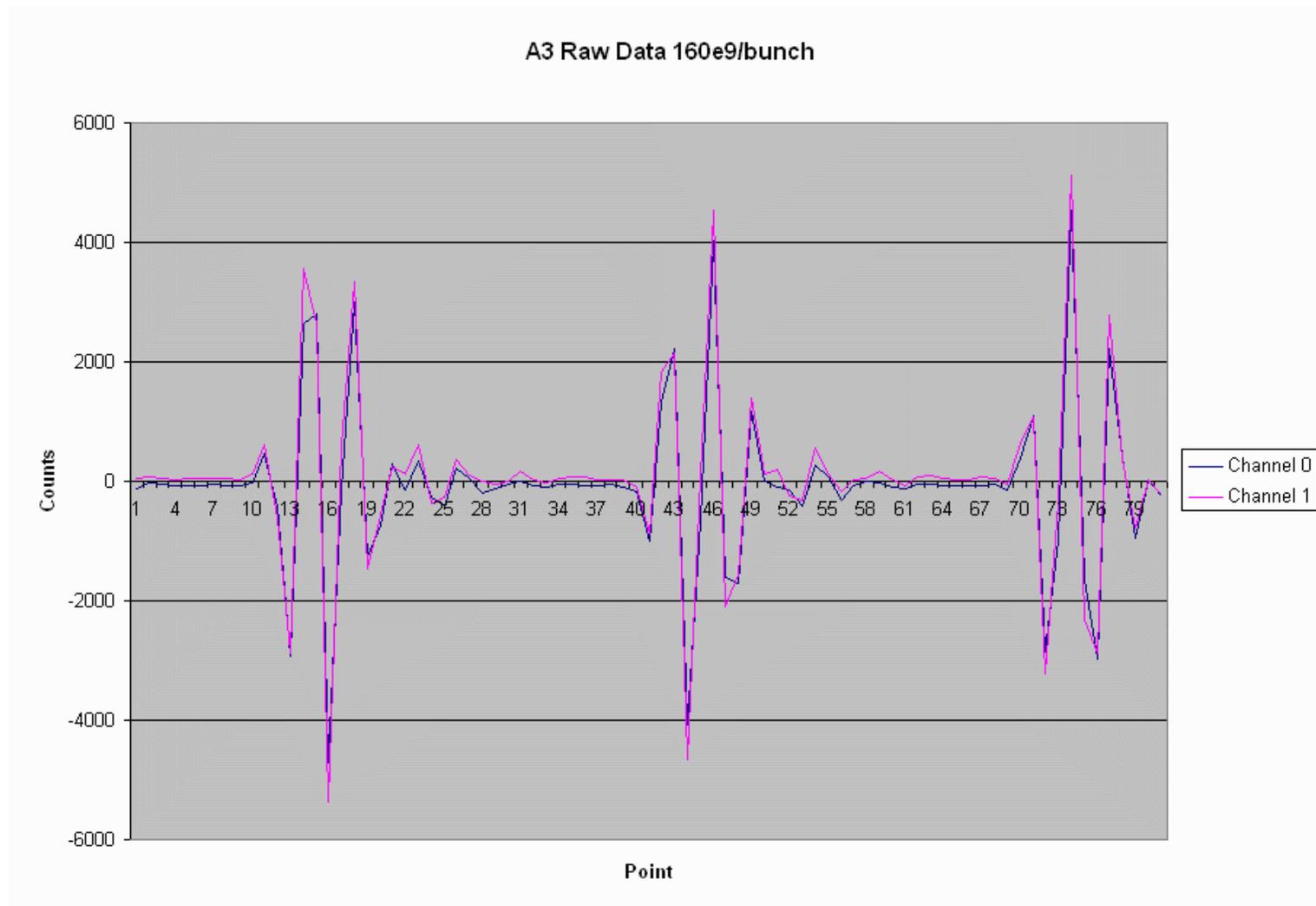


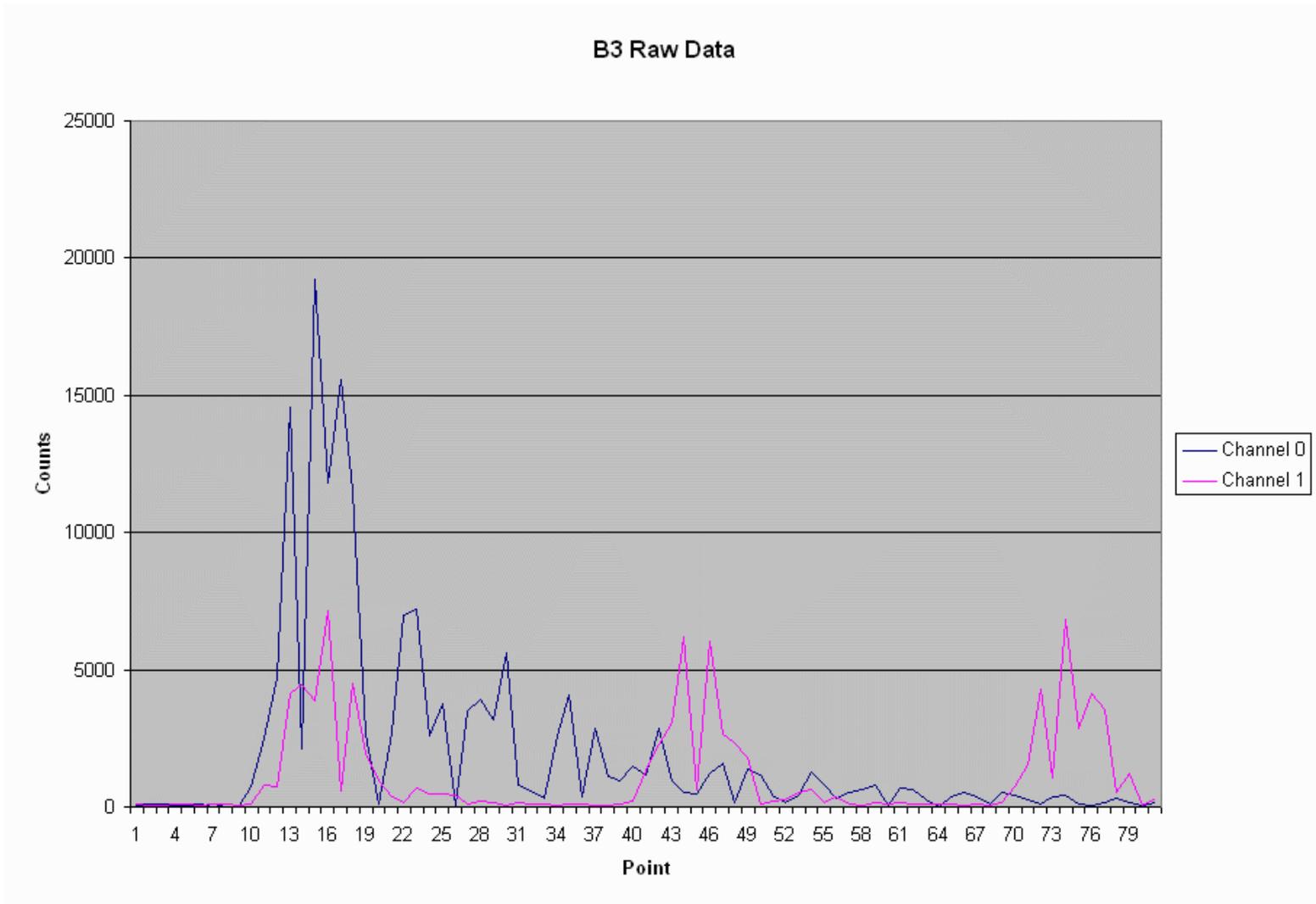
Plans for Test Stand TBT Testing

- Examine different bandwidth and gain configurations for TBT. Optimize for single bunch.
- Examine settings for uncoalesced beam.
- Test timing consistency of first turn of TBT trigger.

Raw Data from A3 System During Store



Raw Beam Signal vs Fake Beam

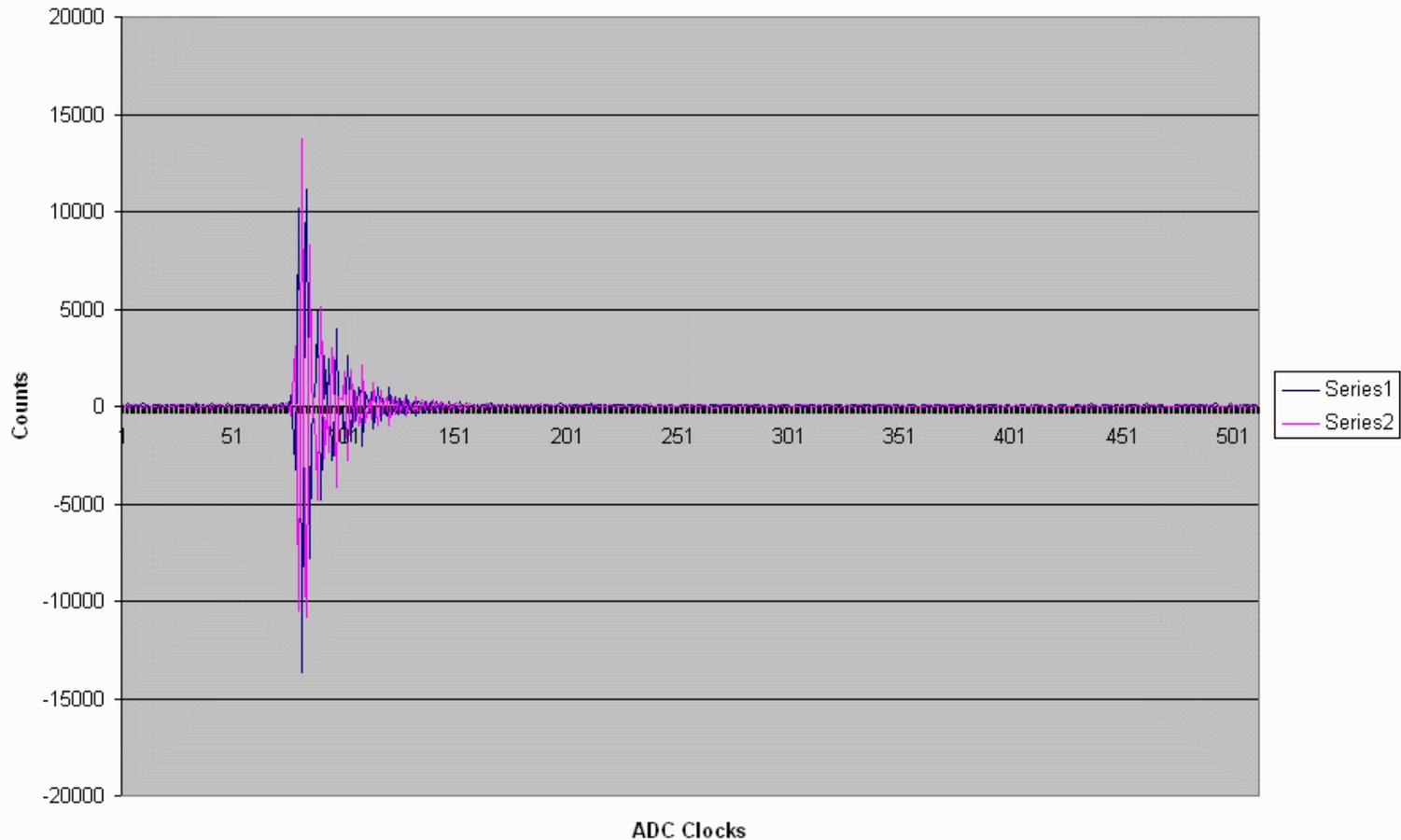


TBT Raw Data Conclusions

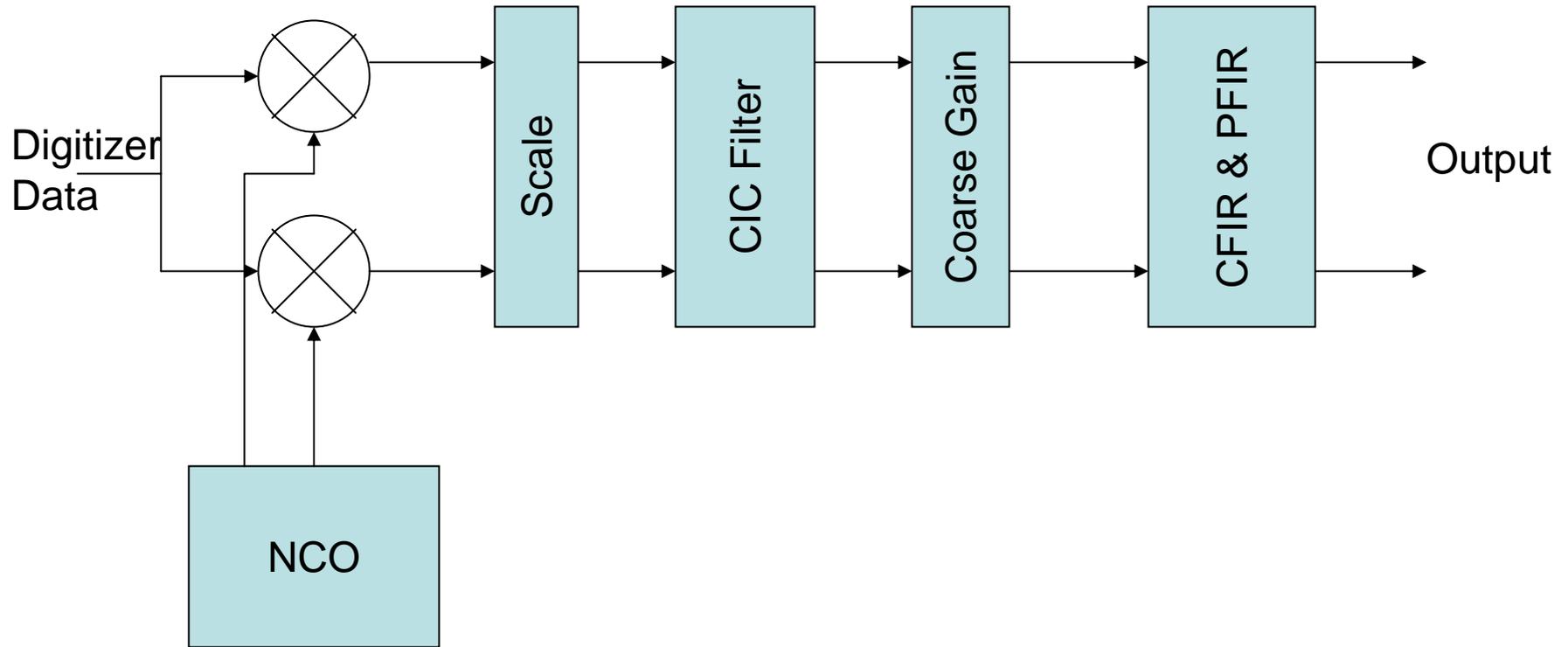
- Beam signal rings filter for at most 16 samples of data.
- Fake beam signal rings much longer due to electrical bounce on the trigger generator.
- Minimum Greychip decimation is 16 samples.
- Set Greychip for minimum decimation.

New Delay for 53 MHz Ensemble Settings

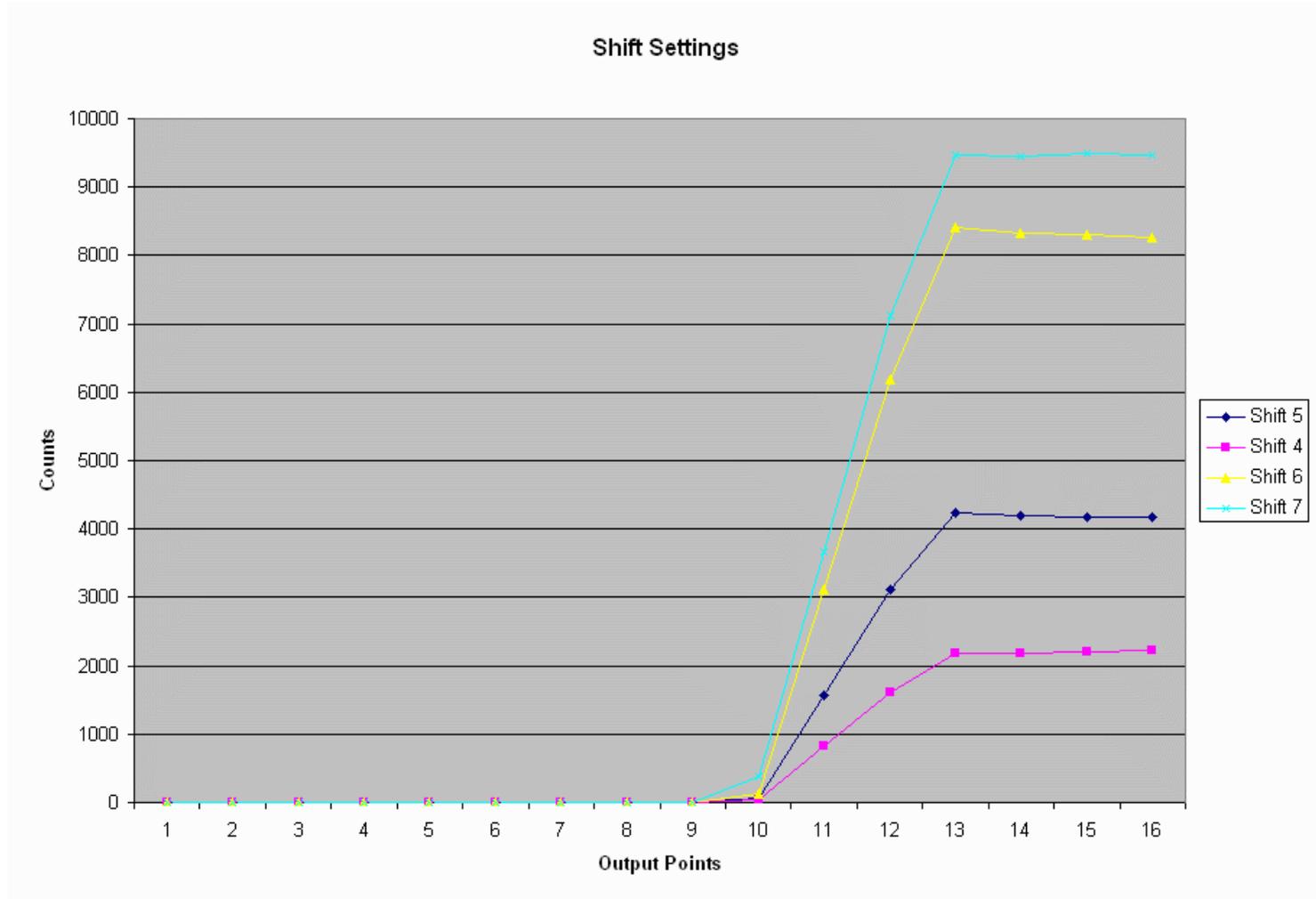
B3 Raw Data TBT Timed



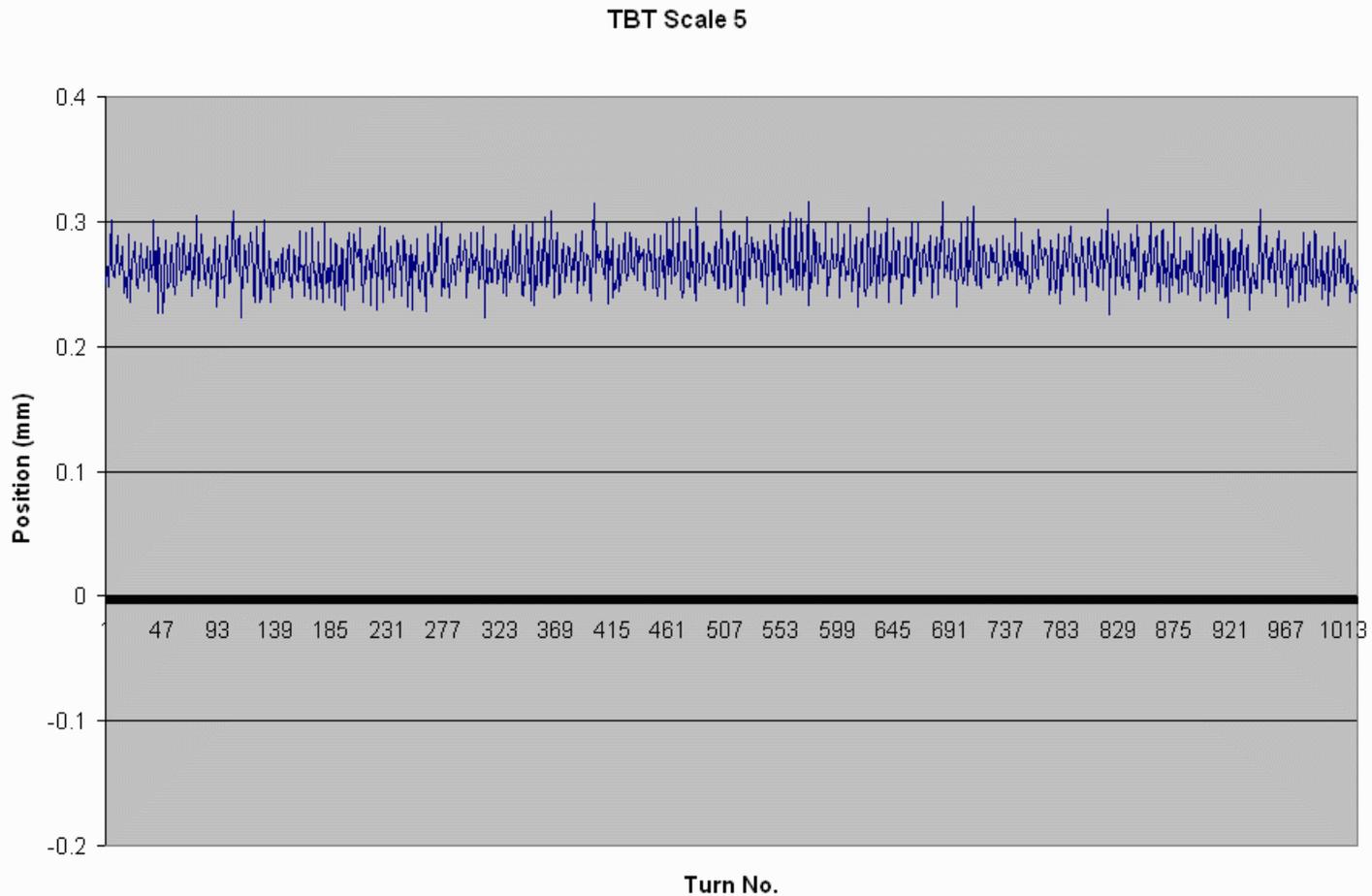
Greychip Gain Block Diagram



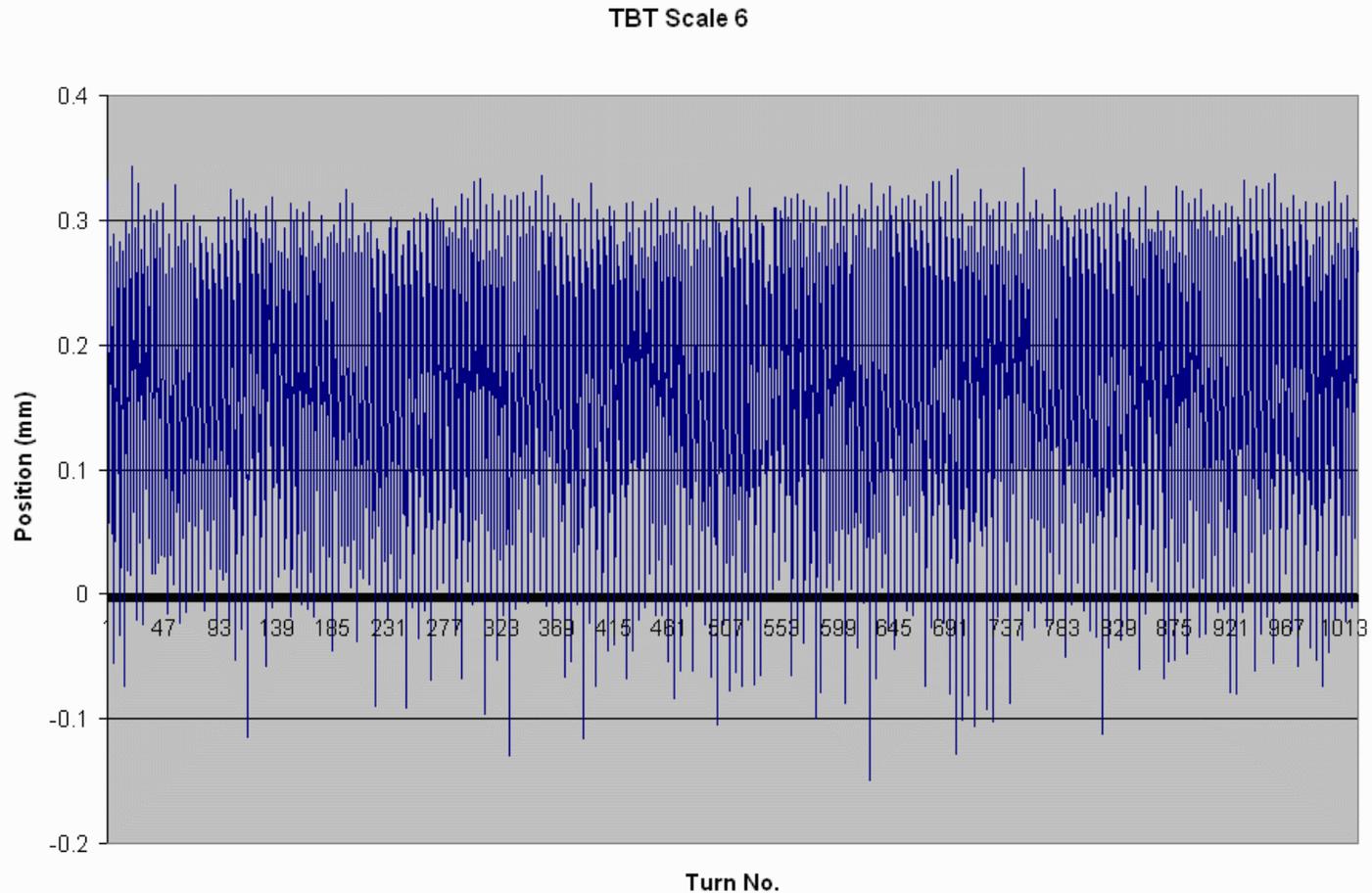
Test Stand Ensemble Output for Different Shift Settings



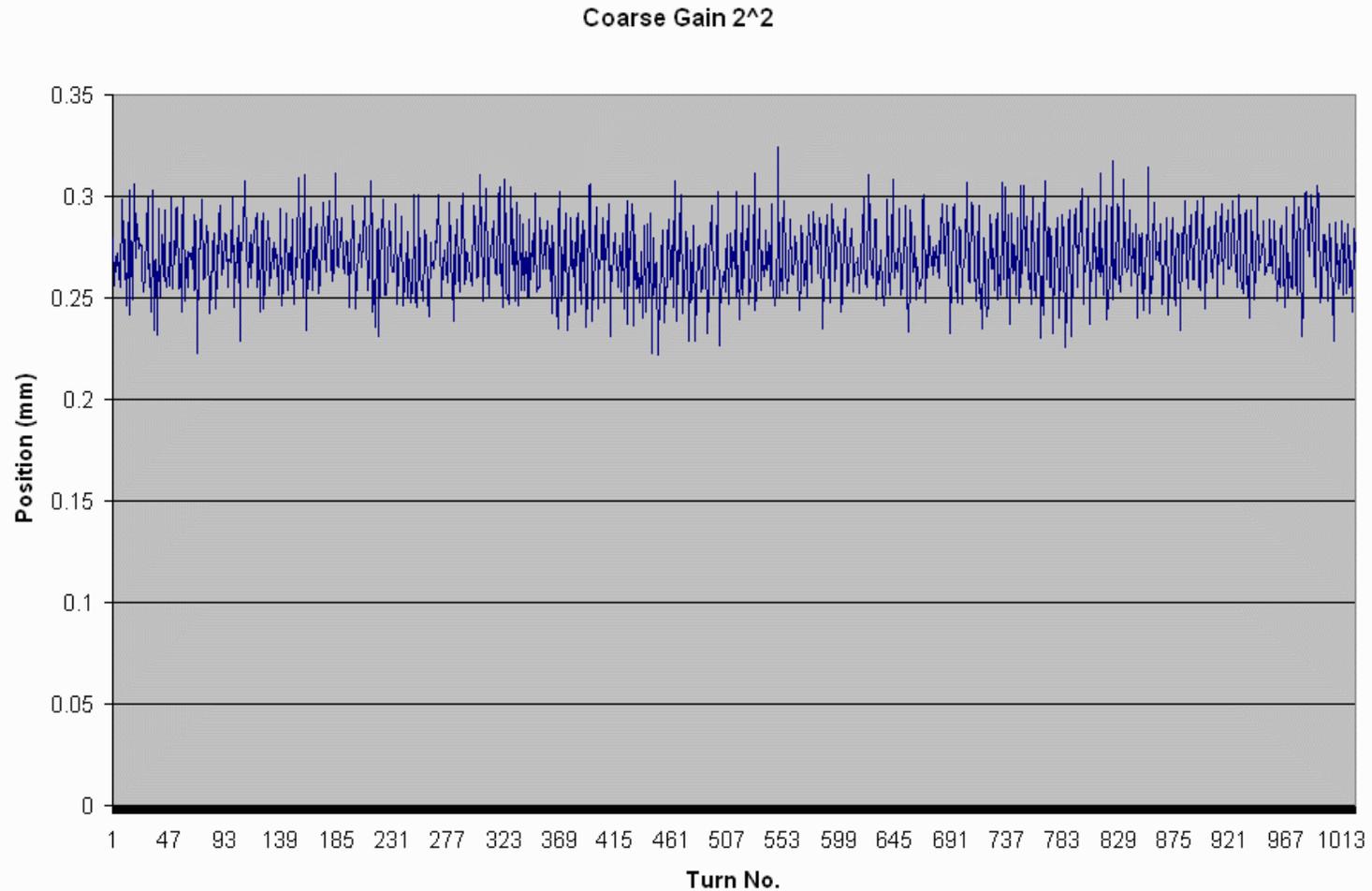
Shift 5 TBT Study



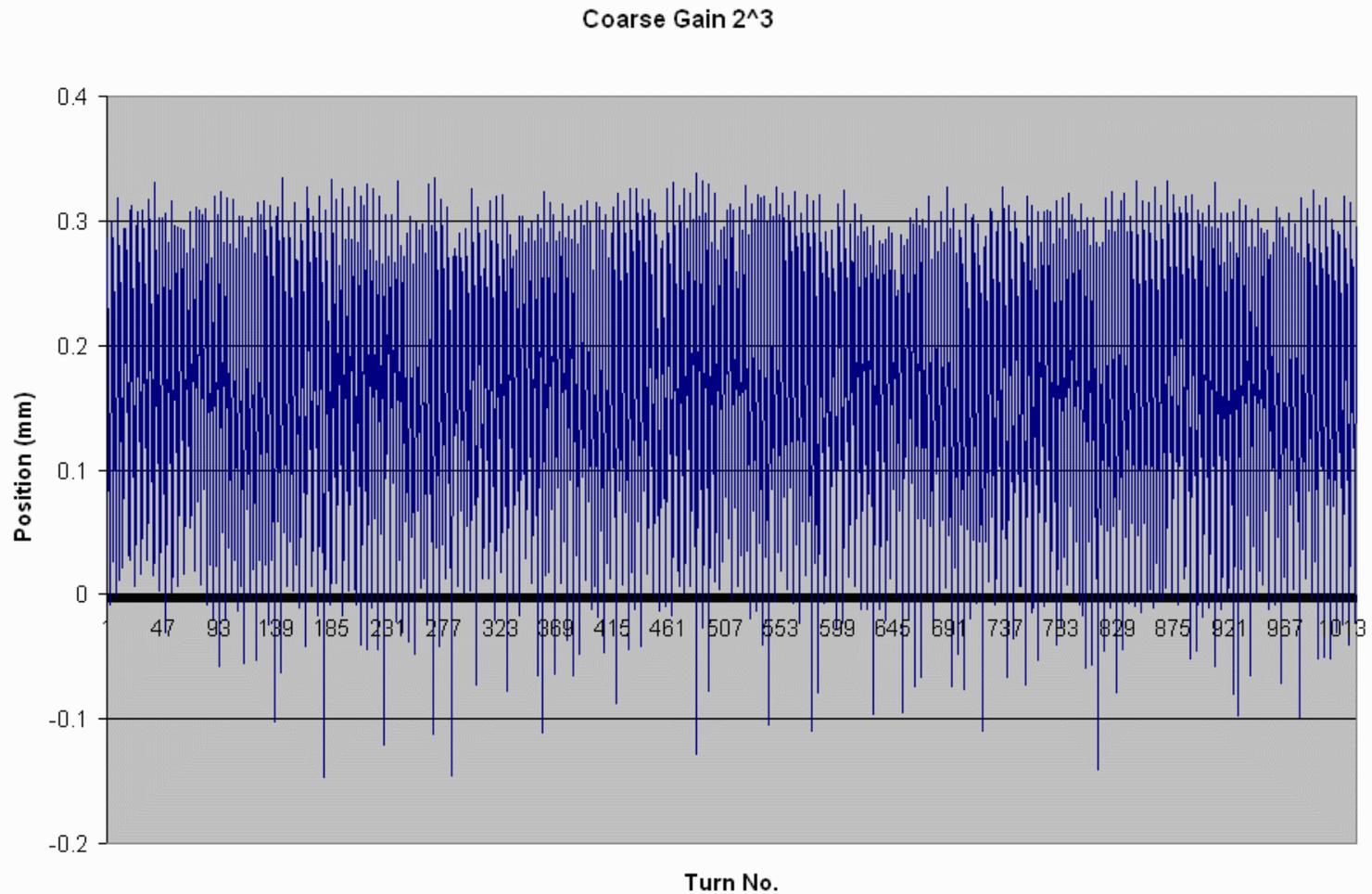
Shift 6 TBT Study



Coarse 2 TBT Study



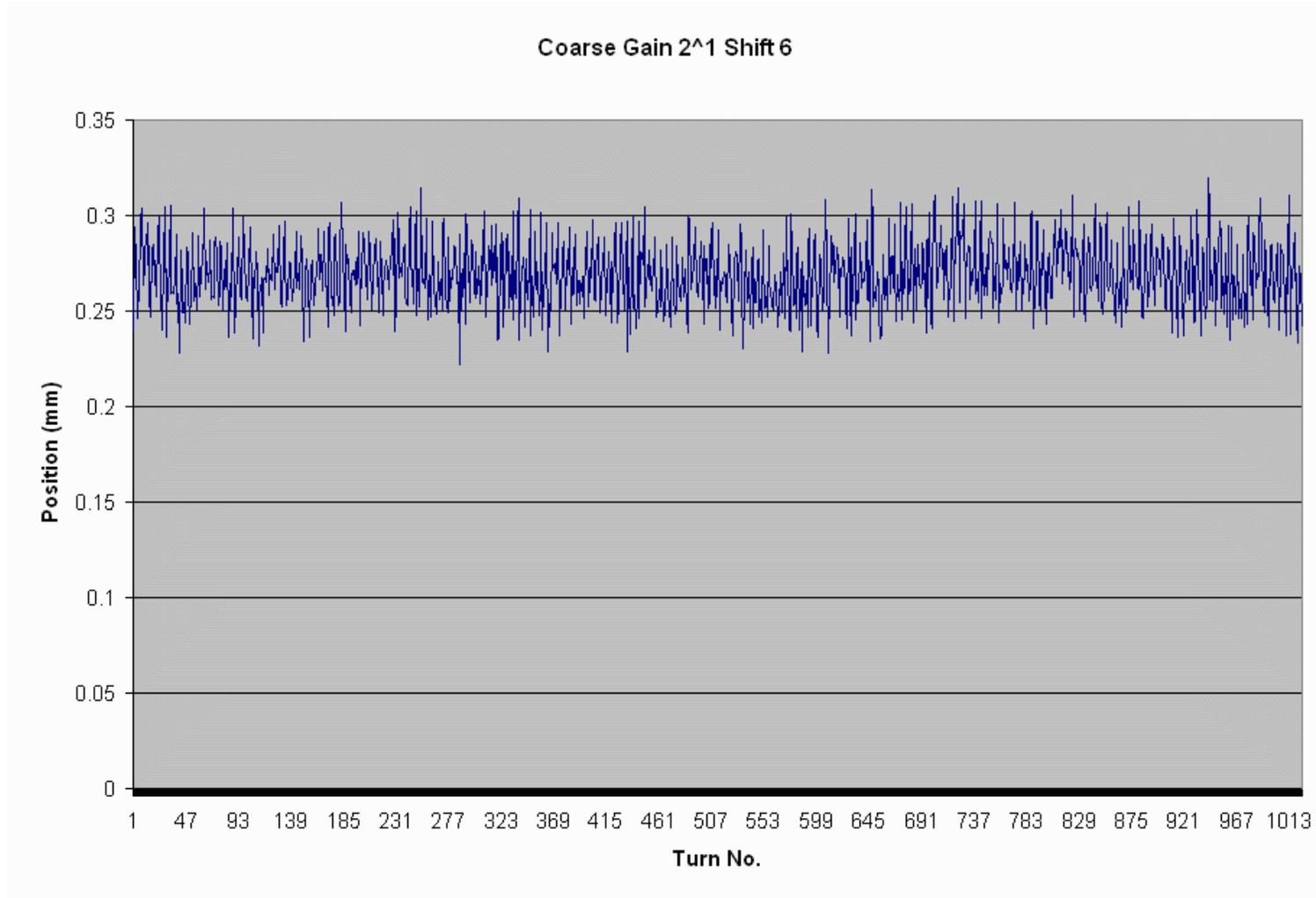
Coarse 3 TBT Study



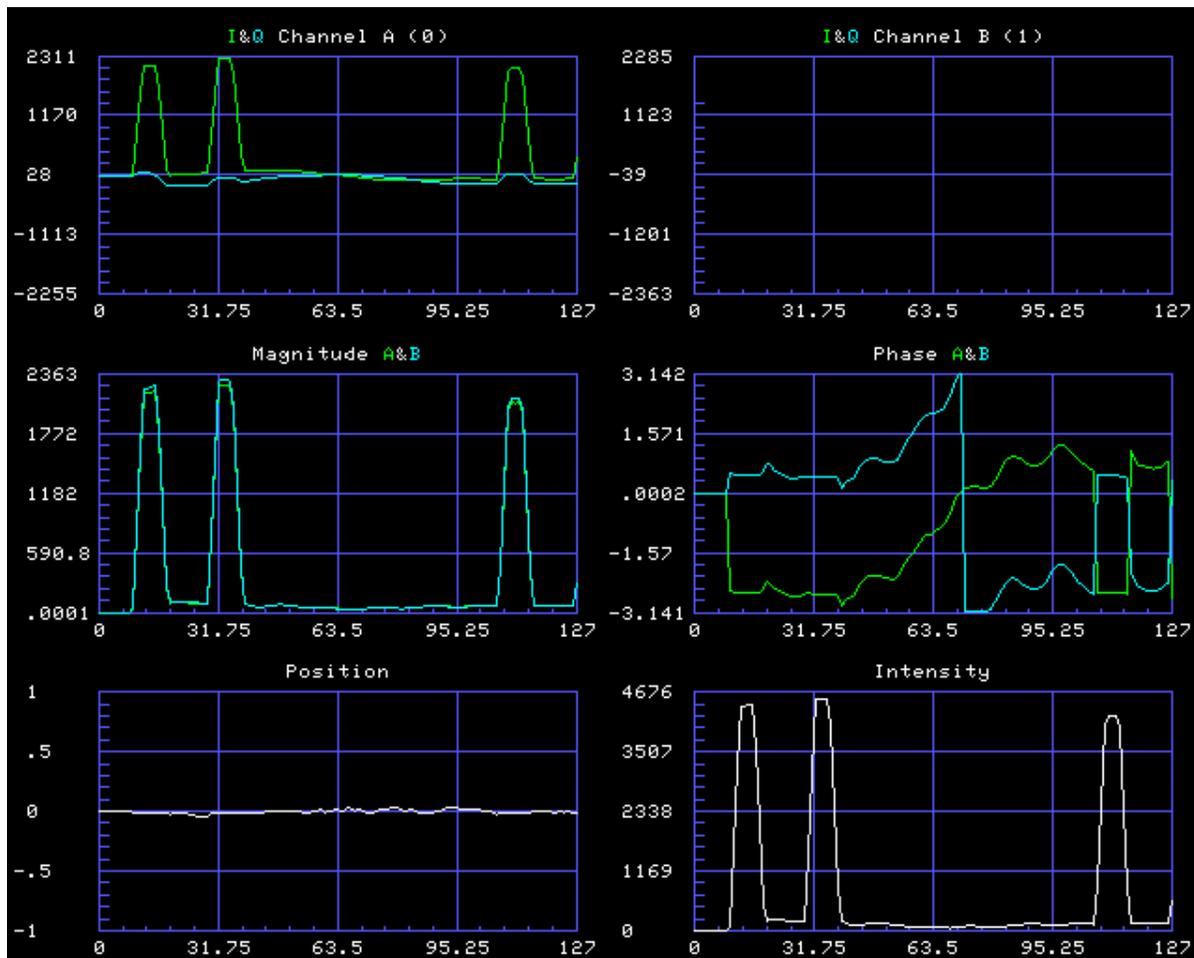
Gain Study Conclusions

- Shift saturates after a setting of 6 bit shift.
- Six bit shift shows irregularities in TBT data.
- Same irregularities seen when changing coarse gain settings.
- Saturation is downstream of CIC (CFIR or PFIR?)
- Maximize gain in front of CIC. Reduce gain upstream for best frontend dynamic range.

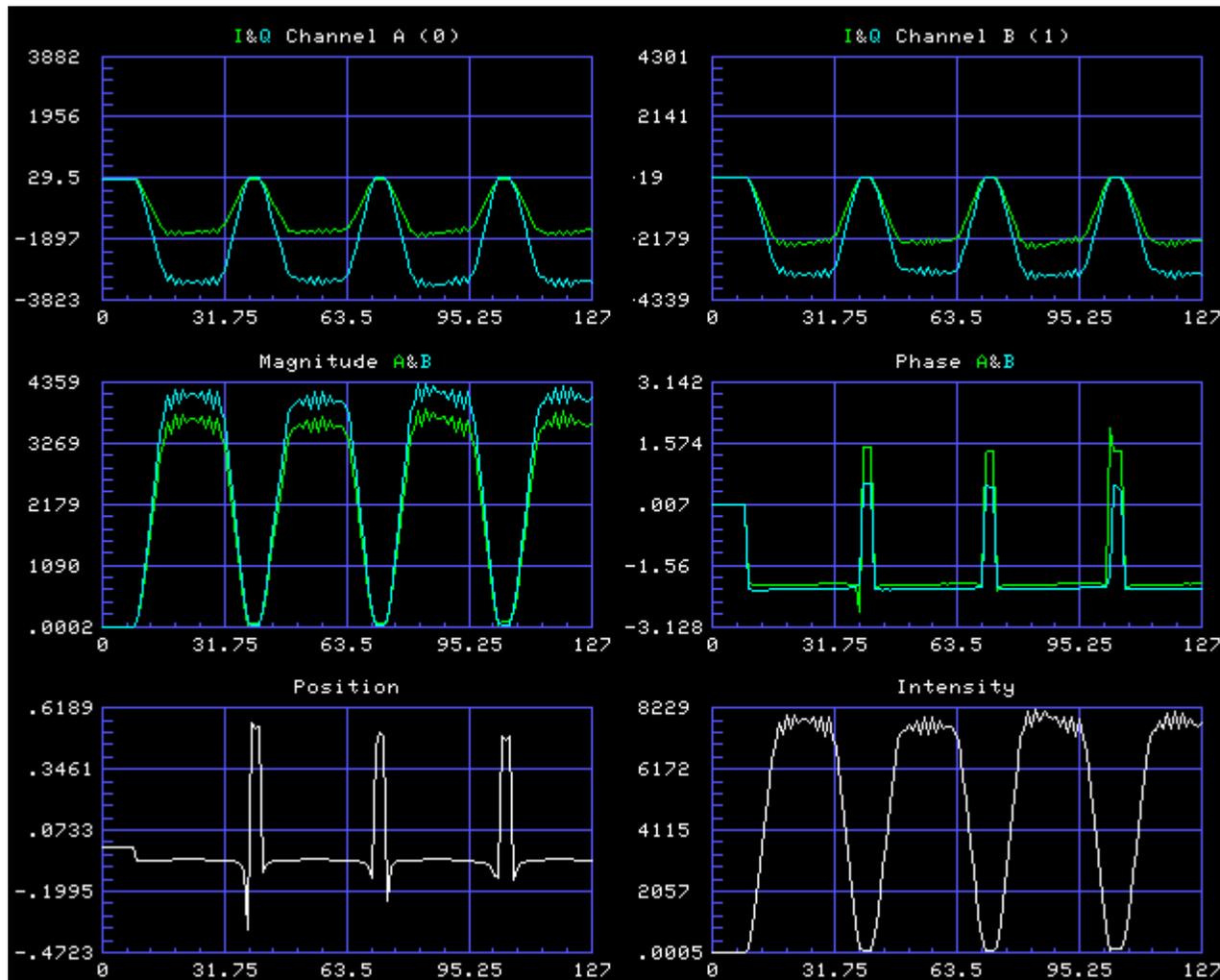
TBT Final Settings



New Settings with Multiple Bunches



New Settings Looking at Beam (36x36)



First Look at Uncoalesced Beam

