ToroidMeeting-May-10-06

Toroid Electronics Meeting Minutes, May 10, 2006

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Contents

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Attendees:

Steve Smith	John Dusatko	Tim Montagne
Hamid Shoaee	David Dowell	Sheng Peng
Mike Browne	Bob Fuller	Stephen Norum
Patrick Krejcik	Cecile Limborg	Michael Cecere

Agenda:

1. **D. Dowell**: Toroid Physics Requirements Review
2. **T. Montagne**: Toroid Mechanical Design Update
3. **M. Cecere**: Hybrid Electronics Design

Presentation Materials:

Hybrid Electronics Presentation, M. Cecere (PPT Format)

Minutes:

1. **D. Dowell- Design Requirements**
   a. Don't need to lift design requirement for waveform transfer
      i. Will be available on all installations, Toroids and Faraday Cups
   b. Asked for 500MHz BW monitoring abilities,
      i. Presented solution will offer 130MHz sampling rate, which will be good for waveform acquistion and charge determination
      ii. If this isn't sufficient for diagnostic purposes a fast O-scope can be utilized at that location
2. **T. Montagne- Mechanical Design Status**
   a. More information available at tomorrow's (5/11/06) FDR
   b. Will be 12 turns on primary
   c. Not sure of calibartion coil single turn manifestation
3. **M. Cecere- Hyrbid Electronics**
   a. Presented Hybrid solution design including Analog Electronics and Digital Electronics section for waveform capture/transfer
   b. Analog Design-
      i. two possible manifestations, Time-slice integration, or BW seperation of component signals.
      ii. decided to stick with Integration technique
      iii. Serial link type still in discussion. RS-232 not attractive to anyone. possibly I2C would be functional.
      iv. question raised if the digital acquisition board could be used as a communication channel. but this function would require that that board always be present, and represents a a circular route of commands/data from BCM host IOC
   c. Digital Electronics
      i. Use Ron Akre's 4 channel 130MSPS ADC board with EPICS IOC host for waveform acquisition and network transfer.
      ii. Board could also be used to calculate beam charge, Coldfire processor fast enough for this application.
         1. signal would need to be stretched for this purpose, no problems here
   d. Analog Board and Digital Board can be put in the same box or kept in two seperate, 1u high boxes, immediately adjacent to the IOC crate

Action Items:

1. **M. Cecere** Check with B. Fuller on rack positions and locations and wiring.
2. **M. Cecere** Determine host IOC ADC requirements.
3. **M. Cecere** Determine communication link between host IOC and FPGA on analog Board

4. **M. Cecere** Check with Ron Akre on availability of his 4-channel board
5. **M. Cecere** Develop Analog Electronics design details