HEC Status Report

LARG Meeting 20.5.1999

Content

- Module Production
- QA/QC aspects
- Testbeam

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HEC Modules
Start-up of Series
CU Absorber Plates

- Alberta:
  - Plates for 4 front modules completed
  - Next set of 4 in production
  - Rate: 1 modules / months
  - Constant supply of raw copper
  - 2nd shift starting July for rear modules
- Dubna:
  - Plates for 1 front modules completed
  - Second module ready by end of May
  - Rate: 1 module / 5 weeks
  - CU material for two more modules available, then stop due to lack of money.
- Protvino:
  - Plates for 3 rear modules completed
  - Production stopped due to lack of money for CU plates
- Molniya:
  - Plates for 2 rear modules completed
  - CU for 4 more modules in house

HEC Modules
Start-up of Series
Read-Out Structure

- PAD Boards: TRIUMF
  - Production in full operation
  - Rate: 8 boards / day
  - Boards for 13 modules produced and delivered

- EST Boards: LPI Moscow
  - Production in full operation
  - Rate: 8 boards / day
  - Failure rate 2-3 %
  - Boards for 11 modules produced
  - Custom problems improving?
  - Production will be stopped in July due to lack of money.

HEC Modules
Start-up of Series
Cold Electronics

- Signal cabling harnesses: MPI Munich
  - Delivery started
    Front module sGerman industry
    Rear harnesses Protvino electronics shop
  - Acceptance tests for 8 mdoules successful
  - Clearance for first half given
- HV harnesses: IEP Kosice
  - Production y for first 10 modules accepted
- Module ditribution boards and patch pannels:
  IEP Kosice
  - Production for testbeam needs completed
  - Series production starting
- Amplifier electronics: MPI Munich
  - GaAs chips in QC mass tests
  - All motherboards produced
  - 25 of 360 PSB boards assembled and tested
  - Cryo test facility for production measurements of PSB boards in operation

HEC Modules
Start-up of Series
Module Assembly

- Assembly sites

  Three of four assembly sites produced at least one module.
  - Dubna: 1 Front module complete
  - Munich: 2 rear modules complete,
    one more in progress
  - Protvino: Site being prepared
  - TRIUMF: 1 front module complete,
    second module in progress

- Final commissioning of sites during the next months

HEC
QA/QC Aspects

- ATLAS QC data base:
  - HEC uses flat file data bases for QC data
  - Accepted during workshop
- Module assembly jig:
  - Mechanical acceptance test for modules at CERN defined.
  - Testing tool accepted
- QC procedure for modules arrivng at CERN:
  - Warm and cold tests
  - Detailed procedure in preparation
  - Common equipment still missing

HEC
Testbeam and Cold Tests

- Testbeam in June:
  - Schedule looks very tight
  - 5 (6?) modules to arrive 7.-14.6.
  - Mating frames (wheel assembly) close to completion at Alberta
  - New electronics setup under test in Munich

    still missing cables and pigtails

- Cold test of min HEC cryostat:

  First load of four modules foreseen for November

Long Shaping Time in 4th Longitudinal Segment in HEC Summary

- Small signals:
  - Improvement for MIP by factor twofor medium luminosities
  - Might expect improveent to S/N= 5
    for muons in eta range 1.7 to 2.5.
  - Potentially strong help in identification of muons in conjunction with muon chmbers.
- Jets:
  - No obvious improvements

- Realisation: Possible by redesign of patch panel and introduction of one special FEB per quarter.

- Total Cost: ~ 150 kCHF