

## 12GeV Trigger meeting notes:

22-Mar-2013: C. Cuevas, N. Nganga, B. Raydo, J. Gu, S. Kaneta, B. Moffit, H. Dong

15-Mar-2013: C. Cuevas, N. Nganga, B. Raydo, A. Somov, S. Kaneta, B. Moffit, H. Dong

8-Mar-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, S. Kaneta, B. Moffit, H. Dong, E. Jastrzembski

1-Mar-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, D. Abbott, S. Kaneta, B. Moffit, H. Dong

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### 1. Trigger/Clock/Sync – TI/TD

#### **22-Mar-2013**

→The production TS has been tested and is ready to be installed in the 3 crate global trigger test setup in EEL-109.

→The firmware for the production board is the same as the previous version, so there should be no significant issues when testing in the global crate setup.

#### **15-Mar-2013**

→No issues identified with the 1<sup>st</sup> production TS board. Firmware is not completely updated, and the new receivers on the board that accept the signals from the GTP via the RearTransitionModule have been tested.

#### **8-Mar-2013**

→First TS production board has arrived and William will begin testing.

→It will be a good idea to test the production version in the 3-crate global trigger test station.

→New (final) TS firmware will need to be completed soon so Bryan can begin CODA library.

#### **1-Mar-2013**

→On schedule to receive the TS assembly next week. This is a production board 1<sup>st</sup> article.

→No questions/feedback on the new TI “link” method.

### 1. SUB-SYSTEM PROCESSOR (SSP)

#### **22-Mar-2013**

→CTP to production SSP communications are working properly with updated firmware.

→VXS testing of SSP to GTP links is in progress. These links are defaulted to 5Gbps and no issues to discuss yet.

#### **15-Mar-2013**

→1 SSP is ready for the 3 crate ‘global’ test stand.

-->Production boards can be tested in the next few weeks.

#### **8-Mar-2013**

→All the production boards have front panels and transceivers populated. There will be some SSPs that do not need to be fully populated. These are stored in the EEL109 locker.

→Preparing one production board to be part of the global test station, and some firmware will need to be modified.

#### **1-Mar-2013**

→Acceptance testing routines ready to use on the boards.

- Front panels have been received.
- Adjustments to firmware to conform to the DAQ output data format.
- Prepare a production SSP to be used in the Global Crate test station.

## 2. CUSTOMERS

### 22-Mar-2013

- The FCAT system is being used and there are a few issues that need to be investigated.
- The goal is to test the full crates and move them to the Hall D CH for the large scale DAQ testing. (D. Abbott, et al)

### 8-Mar-2013

- I know there will be significant work activity for the Hall D large scale DAQ test plan that will take place in the Hall D counting room area. I think we should keep a section in these notes for any issues related to the trigger boards/firmware that are identified during the testing.
- FCAT activity continues in F112 with no significant issues reported.

### 1-Mar-2013

- Crypto keys will be available for pick-up at the HelpDesk. DAQ subnet will be located behind the Hall firewall by next week.

## 3. “B” Switch - Signal Distribution Module (SD)

### 22-Mar-2013

- Discussion about TI→SD and CTP ‘link’. Sounds like its time for a requirements document before spending any time developing firmware.
- Hall A SD?

### 8-Mar-2013

- No report this week, and no high priority activities exist for the SD board. The “SD to TI Link” firmware development and testing activities remain open, but not at a high priority.

### 1-Mar-2013

- The SD-link firmware will be propagated to the TI boards in the EEL109 test setup area and switch card developers can begin to test.

## 4. System Diagrams/Fiber Optics

### 15-Mar-2013

- No update

### 8-Mar-2013

- No report.

### 8-Feb-2013

- Patch panels and patch cables are being checked in now, and will be distributed to the hall groups
- START procurement for trunk cables in D and B by May??

## 5. Global Trigger & Trigger Distribution Testing

### 22-Mar-2013

- GTP is sitting in procurement office.
- New SSP to GTP configuration is being worked on, and the Ethernet development is taking a lower priority.
- 2<sup>nd</sup> prototype board is ready to run and has been tested. Currently used as a development board in Scott's office.

### 15-Mar-2013

- GTP purchase requisition has been signed and approved. We are waiting for quotations from selected vendors. Three contract manufacturers were suggested, so hopefully some action by procurement will happen soon.
- 2<sup>nd</sup> prototype GTP has been repaired and Scott is working on finishing GUI and other firmware features.
- Ethernet interface work is progressing nicely, and there will be further discussions I'm sure. Methods to handle the GigE data need further definition also.

### 8-Mar-2013

- GTP production board has been reviewed. Procurement specification and other fabrication documents have been completed. The PR will be sent for signature approval next week.
- 2<sup>nd</sup> prototype board is at the rework vendor. Expected delivery next week.
- Global test station work will resume next week.

### 1-Mar-2013

- Production board fabrication and assembly files have been reviewed.
- Scott shows the O'scope picture of the full latency of the three crate global crate test. There are a few issues that need to be verified, and the test can be performed again. The total latency for the setup is 3.0us. There is a wide distribution though, and this should not be the case.
- PCIe test boards have arrived and tests can be arranged.

20-JAN-2012 (Keep this date to reference full DAq crate procedure)

3-June-2011

→ Successful testing with the two crates each with a single FADC250-V2, CTP, TI, SD and one SSP!!

16-July-2010 (Keep this note because it needs to be implemented and tested at some point) See older note dates for the list of items.

## 6. Crate Trigger Processor (CTP)

### 22-Mar-2013

- Cost adjustment and updated delivery for the 1<sup>st</sup> article was transmitted to us by MTEQ on Wed 20—Mar. The cost increase is \$77/board and the full assembly will be at JLAB on 19-April!
- CTP Acceptance test board will need to be sent out soon. There is a backup plan to verify the 1<sup>st</sup> article board, and we have 15 business days to send approval.
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### 15-Mar-2013

- We are expecting a final cost adjustment from the CM. The reason for the cost adjustment is due to the extra layers. Vendor reports are due today 15-March-2013.
- Initial front panel has been ordered
- Acceptance test board (B-Switch card) will be completed soon, and ordered ASAP.(Jeff)

### **8-Mar-2013**

- Need to confirm that board has been fabricated and assembly is on schedule for 1<sup>st</sup> article.
- Hai reports that there will be very few changes to firmware for the production units.
- Stand-alone acceptance test procedure for the 1<sup>st</sup> article and the 1<sup>st</sup> article can be used in the global test stand to verify full crate operation.
- Front panel design is almost ready for 1<sup>st</sup> article and after approval the remaining panels can be ordered.
- New CTP acceptance testing support board (B-Switch card) needs to be finalized and sent for fabrication. Assembly and test will be completed at JLAB.

### **1-Mar-2013**

- No news is good news, and the BOM has been ordered. No feedback from the CM or circuit board fab house, so the latest files are error free!!
- The new CTP test board is not ready to order yet, but there is time before the 1<sup>st</sup> article board is delivered.
- Armen can begin the final front panel layout and prepare an order for the production panels.

**ACTION ITEMS: Next meeting - Friday 29 March 2013 @10AM in F224**