

FLASH 9mA Weekly Meeting: 20 July 09 (draft)

Participants

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Meeting Notes

Splitting of cavity probe signals

It had originally been intended to split ACC456 cavity RF probe signals twice (to simultaneously feed the DSP system, SimconDSP, and ATCA). Currently they are split once, with one path going to the DSP system and the other to either the SimconDSP or the ATCA crates. Waldemar reported that the plan is now to install RF switches that will make it possible to quickly select either SimconDSP or ATCA. There are some issues:

- It will no longer be possible to do parasitic ATCA testing since selecting the ATCA signal path will stop the probe signals going to SimconDSP
- The switches must be bench-tested to verify reproducibility and hence evaluate whether it is practical to switch back and forth from SimconDSP to ATCA and back without having to re-calibrate the signal paths each time.
- The RF switches are not yet available (they are on order). The intention is to install them during the week of August 17th.

Downconverters

There was apparently a disconnect regarding which downconverters would be used for the 9mA test. Downconverters had been discussed at some length in previous 9mA meetings in May and June and John had been working under the understanding that the Cryoelectra downconverters were the baseline units for the 9mA test. DESY apparently has been expecting Fermilab to send downconverter boards to DESY for evaluation. (The Cryoelectra boards are a

new design that will be used in the ATCA crates for XFEL.)

Stefan reported that Cryoelectra downconverters were back at the company for repair. There is a limited supply of boards (~30) that would have to meet the needs of both 9mA and ATCA tests. For the 9mA tests, adaptor boards would have to be built to interface the boards with the SimconDSPs. Stefan reported that he would ensure sufficient boards would be put aside for the 9mA tests and that adaptor boards would be built.

MPS Interlocks

Waldemar reported that enough new interface boards were available for the MPS interfaces. ACC1, ACC23, and ACC456 all must receive an MPS inhibit and generate an RF drive inhibit.

LLRF studies outline for week of August 24th (KW35) - see slides for the draft studies outline

The flash tunnels would be opened on Aug 17th. During the week of Aug 24th, it will be possible to run LLRF/RF studies overnight from 8pm to 6am the following morning. This study time will be used to test and commission the new SimconDSP systems 'end to end' with the goal of having all RF/LLRF systems ready for the 9mA beam studies by the end of Sunday August 20th.

In addition to the 9mA LLRF studies, several shifts have been requested for commissioning of the ATCA prototype system. The weekend of Aug 29/30 will be scheduled for the ATCA testing (Saturday will be left as contingency for the 9mA preparations.)

It was noted that the RF gun will need to be conditioned for long pulses during these shifts and that it should be done by the LLRF on-shift people.

Valeri will prepare a schedule with names to cover these overnight LLRF shifts.

Wojciech reported that he will be at DESY to participate in commissioning and test of the SimconDSP systems. It is hoped that Jarek will also be at DESY during this time, but this is not yet confirmed.

Participation from other labs: John will at DESY from August 17 until Sept 21; Ned will be at DESY during the week of Aug 24 and will return during the week of Sept 7th; Brian, Gustavo, Shin, and Toshi are expecting to be at DESY for the latter part of the beam studies. Dates have not yet been confirmed.

Tim reported that he is planning to install a Windows pc in the BKR (control

room) to support skype and webex sessions for remote participation.

LLRF readiness checklist - see draft checklist on indico

The goal is for all items on the readiness checklist to be completed by the end of the week of August 24.

People assuming responsibility for the items are as follows...

1. ACC456 SimconDSP systems installed and tested (Wojciech, Jarek, Valeri, Olaf)
2. ACC456 SimconDSP system operational in closed loop mode with RF power
3. ACC456 SimconDSP operation checked end-to-end via doocs screens
4. Integrity of RF probe and drive signals verified end-to-end for all stations (John, Valeri, Mariusz)
5. MPS interlock functionality verified at ACC1, ACC23, ACC456 (Valeri, Martin Staack)
6. RF inhibit from LLRF system to RF amplifiers verified at ACC1, ACC23, ACC456 (Valeri, Martin Staack)
7. Beam loading compensation functions tested in ACC456 SimconDSPs (Valeri, Wojciech, Jarek, Olaf)
8. Beam loading compensation functions tested in ACC23 and ACC456 DSP systems (Valeri)
9. Piezo tuner controllers installed and tested (Mariusz, Konrad)
10. Piezo LFD compensation checked end-to-end via doocs screens and with RF power (Mariusz, Konrad)
11. DAC operational and new channels installed and data streams verified (Tim, Ned)
12. New DAQ and monitoring tools checked out (Olaf, Valeri, Ned)

Mariusz noted that commissioning of the piezo LFD compensation would require that cavities to be run with high gradients.

Stefan noted that he plans to have new people involved in the checkout in order to broaden the level of detailed knowledge of MSK people on specific systems.

The checklist and names will be posted on the 9mA wiki site at:
http://www.linearcollider.org/wiki/doku.php?id=9ma:9ma_home

Specific follow-up / Action Items

1. System experts for the checklist items are requested to think through what will need to be done in order to check off the respective checklist items. These will be discussed at a subsequent Monday meeting.

2. Valeri will develop a schedule of names to cover the LLRF shifts during KW35.
3. We need a list of LLRF commissioning/setup studies that require beam and will therefore be done early in the week of Sept 7th.

Next week's meeting:

Discussion of outline study plan for 9mA studies beginning on Sept 7.