

LHC RF Meeting

18th September 2008

Participants: Philippe Baudenghien, Urs Wehrle, Joachim Tuckmantel, Andy Butterworth, Edmond Ciapala, Wolfgang Hofle, Daniel Valuch, Eric Montesinos, John Molendijk, Frode Weierud, Elena Chapochnikova, Trevor Linnecar, Thomas Bohl

1. Beam Control

- + **Software:** After yesterday's discussions, some software modifications have been made, all crates rebooted and now restart and function correctly, including reading of observation buffers. We now have globally a good LabView interface.
- + **Radial loop:** We will start setting up the radial loop today when we have beam, this should be quick as partly done already for ADT. We plan to start operation with the synchro loop, however, but the output from the radial pickup should be available to feed forward into the radial steering.
- + **Frequency program functions:** the real-time channel of the FGC is enabled for chromaticity measurements and global orbit feedback radial steering. It would be prudent to start with the radial correction disabled.
- + **Voltage matching:** Do we need to setup voltage matching? The experiments prefer a large emittance so a certain mismatch is good at the moment.
- + **Phasing:** The cables to the cavity voltage sum should be checked.

2. Damaged driver amplifiers

- + 2 driver amplifiers were damaged in UX45 when the 400MHz from SR4 was interrupted due to a crate power-off. One half of the first push-pull stage is broken, losing 6dB of gain, so more drive is required to make the same output power. Daniel has found a supplier for the replacement transistors. There is a large dispersion in gains between amplifiers, so it is necessary to readjust the RF feedback loops if one is changed.

3. Protection of cavity controllers from clock interruptions

- + John proposes a protection against the type of accident described above:
 - o In each cavity controller:
 - Check that the 40MHz present and if not, generate a veto on the Switch and Protection module.
 - Survey the 40Mhz frequency at a 1ms rate, and generate a veto if it is more than 1kHz off.
 - o The veto will require human intervention to clear.
 - o The CMM has access to all backplane interlock lines, which is useful for debugging.

4. ADT

- + Problems with connections between 2 amplifiers and the kickers have been fixed. 2 tetrodes have been found with open filaments, which is normally a very unusual fault.
- + **DSPU:** The fourth board is now functioning correctly. 32 of the red Spinner loads are dead, although they had all been tested and found to be good before installation.
- + **Low Level:** Setup of beam position modules will be done once the 40MHz clock is OK. This takes 2-3 hours per module, giving a total of 4 days needed. The pickup signals are all there, and look extremely good with the low intensities used so far.

5. SM18

- + Dan Van Winkle will come to finish the Matlab applications when the SM18 test setup is ready. This should be around the end of week 41.
- + Week 42 is the LHC inauguration, so we will have to warm up and there will be no cryo available until next year. Pierre will confirm.

6. AOB

- ✚ **Online logbook:** It was suggested that we should we have some form of online logbook. Possibilities are OneNote, as used for the HW commissioning, or the central elogbook service.
- ✚ **Computer security:** all our control machines are on technical network and not visible from outside CERN, so the risk of an intrusion like the one in CMS recently is minimal.

A. Butterworth, 30th September 2008