Software and Controls

SM18 RFD CryoModule tests

Michael Jaussi

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Objectives for SM18 test stand

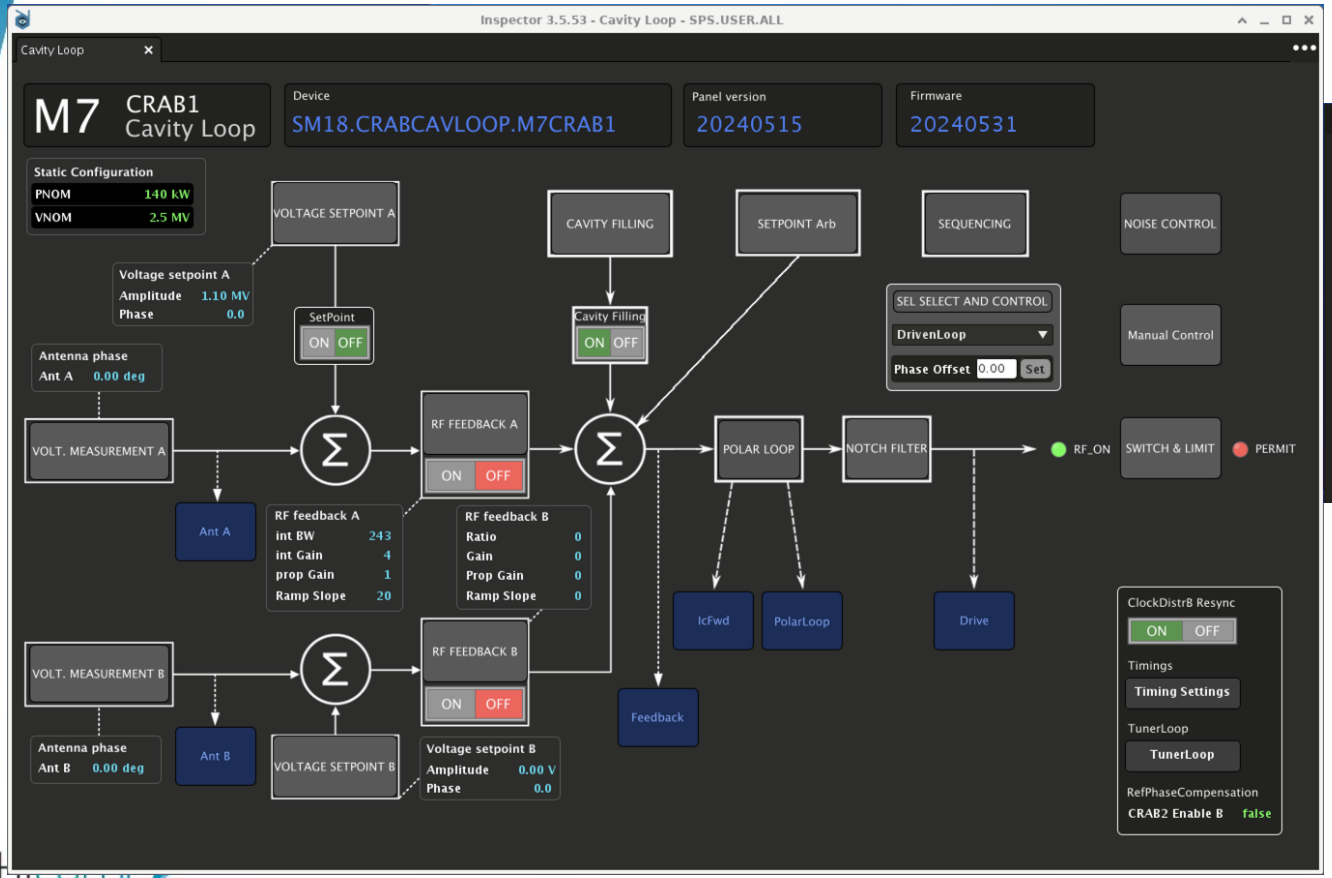
Software objectives (RFD C2)

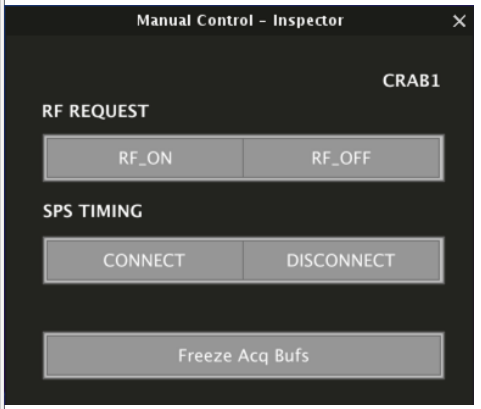
- Commissioning of new FESA software in pair with new firmware
  - New Polar-Loop in Cavity Controller firmware
  - New TunerLoop firmware
- Study how to operate decoupled from SPS timing for SM18 and BA6 but with easy switch to SPS timing
- Polish Inspector panel to ease operation without LLRF or Controls expert present

Summary on RFD C2 tests

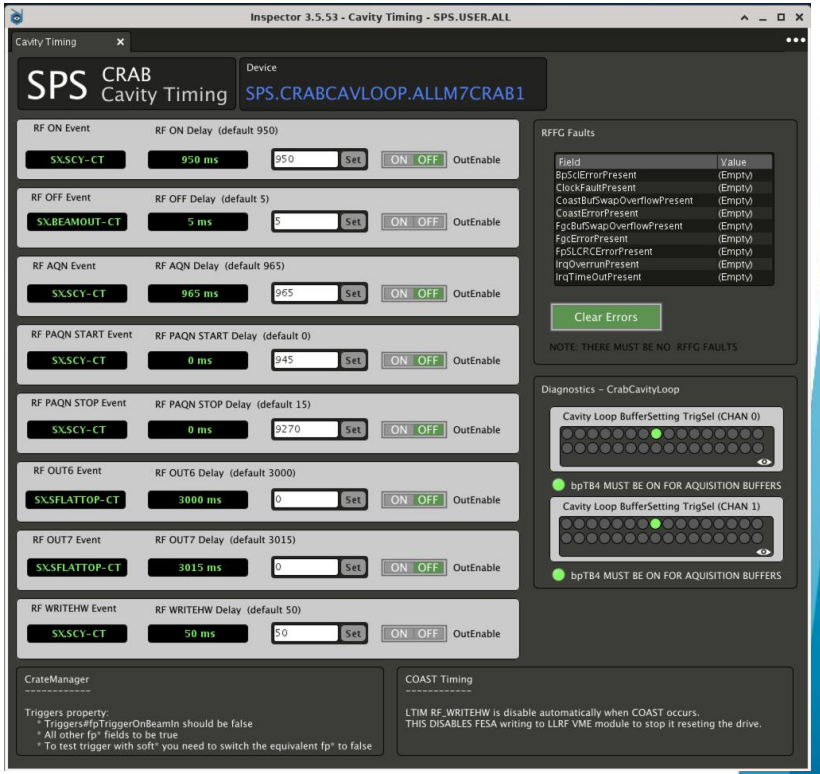
- ALLFrontEndCtrl
  - Already tested last year, no change
- ALLCrabCavityLoop
  - 25 versions between May 12th and June 5th (Thanks Niall !)
  - Some firmware problems were first thought to be software issues, so time was lost
  - New software commissioned (FESA, inspector)
- ALLL4TunerControl
  - 5 versions between Mat 23rd and June 6th (Thanks Bartek !)
  - New software commissioned (FESA, inspector)
- ALLSwitchAndLimit
  - No change since 2020
- Inspectors Panels
  - Many fix/change/addons (Thanks Niall !)

Inspectors panels





Inspectors panels



Next steps, SM18

LLRF commissioning on 2nd Cavity (sept 2024)

- Migration to CW operation
  - Non-multiplex operation, decoupled from SPS timing but easy to switch back to timing if needed
  - More efficient for SM18 tests and SPS MD's
  - RF ON/OFF controlled via state machine

- Consolidation of the controls
  - Checks all data-logging and graph for correct units, conversion from HW values, etc.
  - More automation, for example phase scan ?