ISAC-I RF Situation Response Procedures

(Based on Plone articles and collected wisdom and experience,
Version 1.1, March 16, 2010)

This is a compilation of system recovery instructions that we have been given (and authorized to use in case of problems) by ISAC-I RF system experts, either by ION document or verbal instructions, and therefore does not mean that it is in any way complete or comprehensive. In case problems not covered by this document or the solutions given here fail to solve the problem, please contact the system experts.

A. Resetting the RF Control System (Including the RFQ):

(by Zheng Ting Ang, Earth Day, Apr. 22, 2003; updated Sep. 1, 2009)

I. Reset only the control program for one device (DTL 1, for example).

1. Shut off RF from EPICS (addendum: may not work).
2. Switch off [the] control program: Find "dtl RF Control Server" window (it may be minimized). Close it and do not save anything.
3. Find the corresponding VXI crate (RF control boards in VXI crate locations: Four are above the monitor and three below it), and push the "reset" knob. E.g. The one for DTL1 is red and is located on the left board of its named board in the VXI crate.
4. Turn on the control program by choosing, for example: *Start/Programs/DTL1*.
5. Check if the amplifier is ready. If not, reset and restart it.
6. Turn on the RF by clicking [the] "AUTO ON" when [the] amplitude set point is about 400.

II. Reboot the Control Computer

1. Shut off RF from EPICS (addendum: may not work).
2. Switch off *all* control programs: Eg. Find "dtl RF Control Server" window (it may be minimized). Close it and do not save anything. Repeat this until you turn off all [the] RF controlled by this computer.

3. Turn the computer and VXI crate power off; turn them on again after waiting for about 5 seconds (all RF control programs will come on automatically).
4. ***Only if step #3 does not work (ie. RF control program does not come on automatically)***:
   - Turn on Control Communication Program by choosing: *Start/Program/auxx.exe. [Addendum: No such file on the RFQ computer.]*
   - Turn on each rf control program by choosing: *Start/Programs/DTL1*, and so on, for all of them.
   - Check if amplifiers are ready. If not, reset, and start them.
5. Turn *all* RF on by clicking "AUTO-ON" buttons, when amplitude set-points are about 400, for all RF devices.

B: Further RFQ Recovery Procedure:

(**Use only if "Procedure A" above fails to work.)**

CONTACT AN RF EXPERT FIRST BEFORE ATTEMPTING THE PROCEDURES BELOW!

(by Zheng Ting Ang, June 17, 2003; updated Sep. 1, 2009)

(Addendum from Zheng Ting: The recovery procedure for the RFQ is similar to all the other RF systems now, so use this procedure only if the RFQ could not be turned on by pressing "Auto-On" locally.)

1. Turn RFQ rf off.
2. Click 'align' in tuner control panel to move tuner to the default position.
3. Turn RF on (click 'RF on' button, not the 'Auto-On' button) with set point at about 500.
4. Wait for a while to see the RFQ working frequency on the frequency counter located on top of the rack. If it is not at about 35.36 MHz (eg. 35.36322 MHz), then move

tuner to get the frequency reading at about 35.36 MHz.

5. Then switch from "self excited" mode to "driven".
6. If the above does not work, try steps1– 5 again until the RF comes on.

C: MEBT Bunch Rotator Startup Instructions:

(by Zheng Ting Ang and Jon Aoki, Mar. 30, 2009, adapted for QREAM by R. Tanaja)

1. If the Rotator tripped trips off, check the Amplifier I/L page and note which interlock condition(s) exist(s). If all the interlock conditions have cleared, there is a good chance that the trip was caused by a vacuum excursion (common while running the Rotator, caused by multipacting).
2. If all the interlock conditions have cleared, click on "Amplifier Mon" and try resetting the amplifier. If the amplifier does not come on right away, try clicking "Reset", then "On". If it does not come on, continue clicking "Reset" and "On" until the PA comes on.
3. Once the amplifier is on, press "AUTO ON" to start the RF with the set point at about 350.

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