Group C SVT test setup

Operation

Running services

1. If on, turn off NIM crate to disable interlock (otherwise chiller won't start)
2. Turn on SVT power supply crate (turn key to "local on"), make sure red "interlock" light comes on (i.e. tripped)
3. Set flow manifold valves
4. Start chiller (power button on front panel)
5. Turn on NIM crate, make sure Arduino's green "ON" light and flow switch's red "flow above threshold" light turn on, SVT power supply's red interlock light turns off
6. Do stuff to start power and DAQ

Running tracker with CODA

1. Login to tracker@ppa-pc88427 and open a terminal
2. Setup environment: $cd /u1/software/daq && source setup_env.csh
3. Kill processes related to the tracker and CODA (if any is running): $ cd /u1/software/scripts && StopLocalCodaAll
4. On desktop #1:
    a. $ cd /u1/software/daq && RestartTrackerDaq
    b. $StartExpertGui
    c. Configure the SVT using the Expert GUI:
        i. Hard Reset => Load Settings ("config/coda_defaults.xml")=> Load Settings ("config/coda_groupC.xml")=>Soft Reset
        ii. You should see good sync (#apv's depends on what is connected)
5. On desktop #2:
    a. open a terminal and setup environment: $cd /u1/software/daq && source setup_env.csh && cd /u1/software/scripts/
    b. $ ./StartLocalCodaAll
    c. You should see three terminals: Run Control Platform, coda master and trackerRoc and one coda master GUI
    d. Select "coda" in the coda master GUI => opens a new coda master gui where you need to enable buttons
    e. Click Event Builder in the coda master gui => should open a smaller gui
    f. Click Run Control in the coda master gui => should open the large run control gui
    g. Click: connect, Configure, Download, Prestart (check progress in trackerRoc (apv sync status) and in run control gui for each step).
    h. Run with Go.
6. To look at the data being taken go to desktop #1:
    a. $cd /u1/software/daq && source setup_env.csh && StartOnlineGui
7. The data is written to the file /u1/software/coda/test.dat

SVT Layout in Lab

SVT Half	Cooling loop (from chiller side)	Side in lab (from chiller side)	Flange
Top	"away"	"away"	short cable (outside cold box)
Bottom	"same"	"same"	long cable (outside cold box)

Systems

Power

CAEN SY1527

Serial console

Serial port is connected to Windows desktop; run HyperTerminal (Start/Prorams/Accessories/Communication/HyperTerminal) and open the "CAEN SY1527" shortcut (set to COM1, 9600 baud, hardware flow control).

Instructions

In the current setup:

Slot	PS	Type
0	A509	DVDD for all hybrids
3	A509 H	AVDD, V125 and bias
6	A509 H	AVDD, V125 and bias

9	A509 H	AVDD, V125 and bias

Notes/remember:

- A509 BIAS is not used
- A509H last two channels are not used for any hybrid: ch.07 and upwards on slot 9 in this setup.

Mapping between the SY527 slots and channels to hybrids:

- Details here (Test run version): half-module assignments - Power supply assignments updated.pdf .
- **[Update with correct slot/ch assignment valid for group C]**
- Remember that a connector is switched on the support plate (see table in the above link) when identifying layer with fpga and hybrid id on the DAQ side.

Cooling

Chiller

Polyscience 6506T

- Product page: http://www.polyscience.com/en/p110t78/6500-series-chiller--1-2-hp-turbine-pump.php
- Manual: http://www.polyscience.com/_pdf/_manual/_recirculating-chillers/110-240.pdf)

Max outlet pressure set to 40 psig using internal pressure bypass

- Flow switch: FPR122 with low flow adapter (0.1-1.0 GPM) http://omega.com/Manuals/manualpdf/M1960.pdf

Typical flow:

Setting	Flow (GPH)	Pinlet (psi)	Poutlet (psi)
"Away" loop	22	30	10
"same" loop			
Both	25	26	16

Test of serial port (serial_hps_chiller.ino)

Interlock board

Arduino Leonardo (http://arduino.cc/en/Main/ArduinoBoardLeonardo)

Source code: serial.ino (serial_hps_svt.ino)

Need micro-USB cable to reprogram. Software is already installed on Windows laptop.

Inputs:

- HTM2500LF temperature+humidity sensor inside Lexan box
- Flow switch in cooling system return line
- RS-232 connection to chiller - status, set T, measured pressure/flow/T

Thresholds:

- Ambient T inside SVT Lexan box < 25 C (set in Arduino script)
- Ambient RH inside SVT Lexan box < 5 % (set in Arduino script)
- Cooling system flow > 20 GPH (adjustment screw on flow switch)

Logic:

- Check inputs every 1 s; if any input is abnormal, trip and stay tripped (must reset Arduino board to clear)

Outputs:

- RS-232 to chiller: if tripped, send "stop" command every 1 s
- Interlock to CAEN crate (5V normal, 0V tripped) - trip turns off all outputs immediately
- Prints inputs to USB serial connection every second (if plugged in)