

Remote connection to control PC

The SMC chiller is connected to a small form-factor control PC (`pc-unige-irrad`) running Windows 10. In order to connect to the control PC in b161 you must first connect to the Windows TS and from there to the control PC. Passing through the TS is required to be able to login in the control PC using a local account.

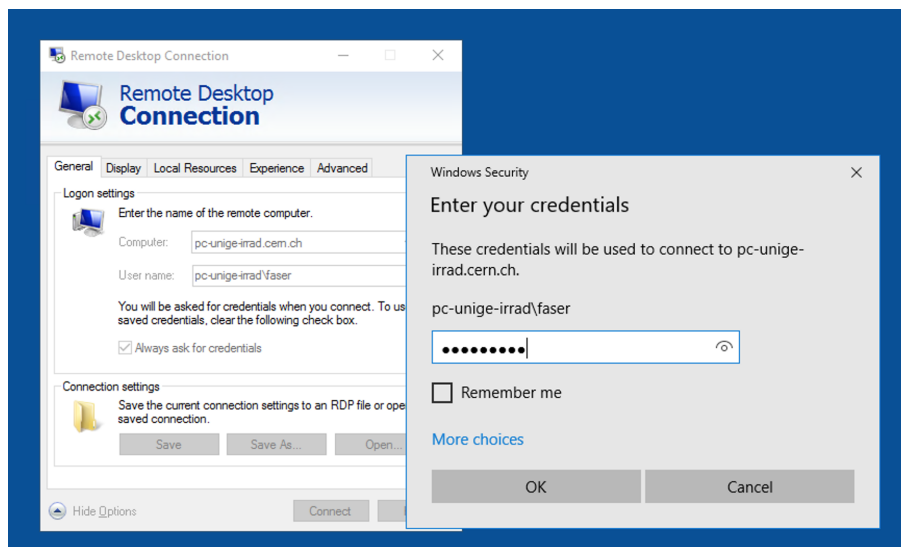
1.- Open a remote desktop connection to the CERN Windows Terminal Server (TS):

- connect to `cernts.cern.ch`
- user: `cern\guest`
- password: your password

The recommended client software is Microsoft Remote Desktop client, which is available for both Windows and Mac OS. For linux one can use "VNC viewer" or XfreeRDP clients. For additional information please check https://cern.service-now.com/service-portal?id=kb_article&n=KB0006557.

2.- once connected to `cernts.cern.ch`, open a new connection to `pc-unige-irrad.cern.ch`:

- user: `pc-unige-irrad\faser`
- password: password for local account in the windows control PC



Remote operation of SMC chiller

Enabling remote operation

When operating the chiller manually via the front panel it is said to be in LOCAL mode. To enable remote operation the chiller has to be put in SERIAL communication mode.

SERIAL mode can be enabled as follows:

1. press and hold the [MENU] key for 2 secs. The digital display should show a new menu code. Repeat press and hold [MENU] for 2 secs until the communication setting screen (labelled as `Co.01`) appears in the display.
2. select `ser` with the [up] and [down] arrow-keys, then press [SEL] key to confirm. This sets serial communication mode.
3. in the next sub-menu (labelled as `Co.02`) select `ndbS` corresponding to the MODBUS protocol. Confirm by pressing the [SEL] key.

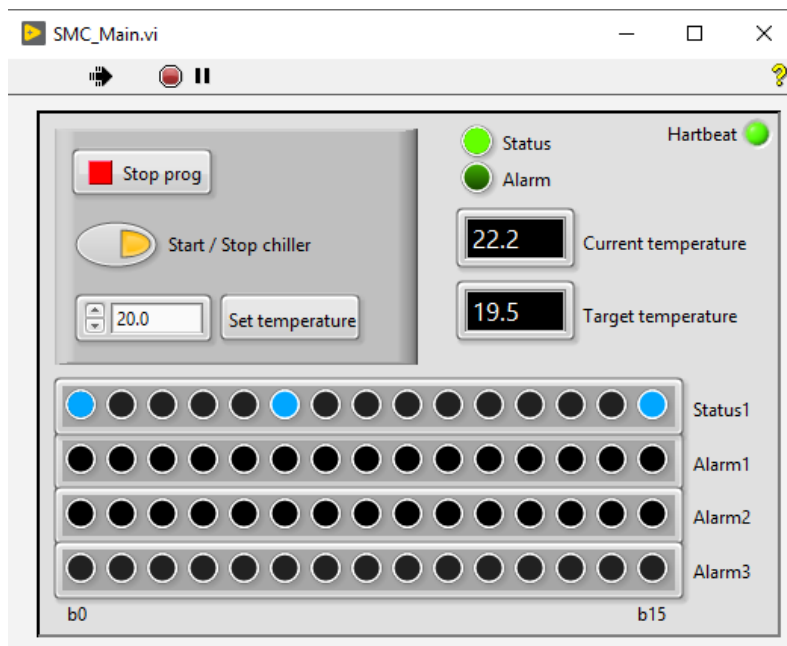
4. in the next sub-menu (labelled as Co.03) select 232C corresponding to RS-232C standard. Confirm by pressing the [SEL] key.
5. keep pressing [SEL] key until sub-menu Co.05 is displayed. Select address 1 and confirm by pressing the [SEL] key.
6. in the next sub-menu (labelled as Co.06) select 9.6 corresponding to 9600 bps rate. Confirm by pressing the [SEL] key.
7. exit by pressing the [MENU] key.

To return to LOCAL mode, repeat steps 1 and 2 and select Loc in the Co.01 menu.

For more information read chapter 4 of the SMC Communication manual.

LabVIEW application

A LabVIEW (2019) application has been created to control the SMC chiller in b161. The chiller is connected to the PC via a USB-RS232 cable with a FTDI chip. The driver chosen is Virtual Com Port so that to make it easier its control in LabVIEW using standard VISA vis. The alias SMC is defined in NI MAX to the corresponding COM port of the VCP. If the chiller is correctly configured in SERIAL mode with MODBUS protocol as explained above, upon start of the LabVIEW application the proper serial port is initialized and the contents of the different registers are automatically monitored every 3 seconds. The figure below shows a screenshot of the main program.



The controls and indicators shown in the front-panel are explained below.

• Controls

- ◆ `Stop prog` control button: stops the main application, closes the VISA device session.
- ◆ `Start / stop chiller` control: allows to start (run mode) or stop the chiller.
- ◆ `Set temperature` control button: sends a command to set a new target temperature. The new value is reflected in the SV display of the chiller front-panel.

• Indicators

- ◆ `Status` boolean indicator: shows if the chiller is running or stopped.
- ◆ `Alarm` boolean indicator: shows if any bit of the different alarm registers is set.
- ◆ `Current temperature` indicator: shows the current fluid temperature (also shown in the PV display of the chiller front-panel).

TrackerCommissioningRemoteAccessB161 < FASER < TWiki

- ◆ `Target temperature` indicator: shows the target set point (i.e. the temperature the chiller is trying to reach).
- ◆ `Status1`, `Alarm1`, `Alarm2` and `Alarm3` boolean array indicators: show the bit content of the corresponding 16-bit registers (bit 0 is shown left-most, bit 15 right-most). Refer to sections 4.10.4 and 4.10.5 of the SMC Communication manual for the meaning of the single bits.
- ◆ `HeartBeat` boolean indicator: it blinks every time the registers are monitored. This is just a visual help to be sure the automatic monitoring is running.

Note the user can only act on the controls.

Additional information

- SMC Operation manual
- SMC Communication manual

-- SergioGonzalez - 2020-05-22

This topic: FASER > TrackerCommissioningRemoteAccessB161

Topic revision: r3 - 2020-05-26 - SergioGonzalez



Copyright &© 2008-2020 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.
Ideas, requests, problems regarding TWiki? Send feedback